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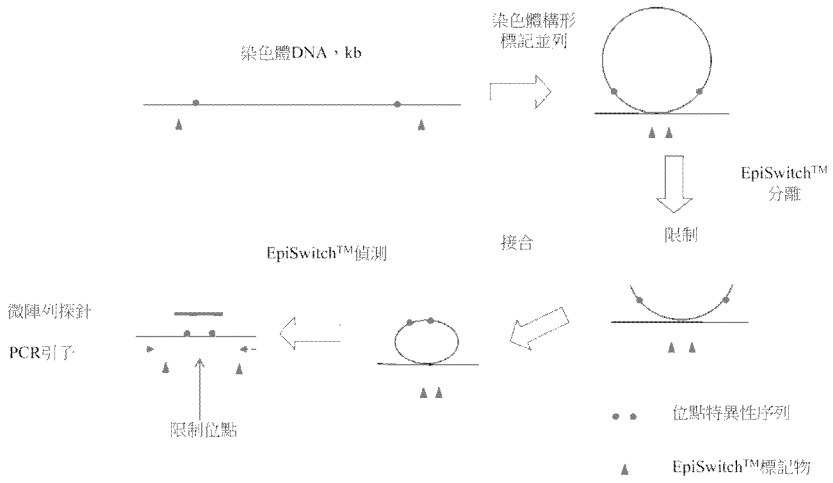
分析方法

(57)摘要

本發明提供一種分析與免疫健康相關之染色體交互作用的方法。

A process for analysing chromosome interactions relating to immune health.

指定代表圖：



【圖1】

【發明摘要】

【中文發明名稱】

分析方法

【英文發明名稱】

ANALYSIS METHOD

【中文】

本發明提供一種分析與免疫健康相關之染色體交互作用的方法。

【英文】

A process for analysing chromosome interactions relating to immune health.

【指定代表圖】

圖1

【代表圖之符號簡單說明】

無

【發明說明書】

【中文發明名稱】

分析方法

【英文發明名稱】

ANALYSIS METHOD

【技術領域】

【0001】 本發明係關於免疫系統。

【先前技術】

【0002】 免疫系統如何對特定觸發子(諸如病原體或靶向治療性干預)起反應可確定疾病之嚴重程度或免疫相關副作用。免疫反應之不同部分，包括體液及細胞，在保護身體方面具有不同作用，且亦具有公用控制機制。

【0003】 免疫反應之實例為細胞介素釋放症候群(CRS)，其為可由多種因素(諸如感染及某些藥物)觸發之全身性發炎反應症候群(SIRS)形式。其可在大量白血球經活化且釋放發炎性細胞介素時發生，此轉而活化再更多白血球。CRS亦為一些單株抗體藥物療法以及授受性T細胞療法之不良作用。當作為藥物療法結果出現時，其亦稱為輸注反應。

【發明內容】

【0004】 發明人已鑑別定義免疫系統如何對特定觸發子起反應之染色體構形標記。此闡明在免疫系統控制中調節之此模式之作用且允許個體免疫健康之『讀出』，尤其判定其對免疫系統之過度反應之易感性。本發明集中於作為不同於疾病過程之其餘部分之某物的免疫反應。本發明在由染色體交互作用定義之基因體之3D架構水準上針對獨立分析『分離出』

免疫組分。

【0005】 3D基因體學提供極早期症狀及症狀前讀數。個體之染色體相互作用之分型允許在全身性免疫概況中之早期時間點識別是否例如其預設用於特定器官或組織中之免疫過度反應，諸如細胞介素風暴及/或強過度發炎及/或自體免疫反應。

【0006】 因此，本發明提供一種偵測用於確定個體是否易患免疫過度反應之方法之預後的方法，其包含確定一或多種由表1或表3中所示之探針表示之染色體交互作用之存在或不存在，由此確定個體中該易感性之存在或不存在。本發明亦提供一種確定個體之免疫健康之方法，其包含確定一或多種由表7中所示之探針表示之染色體交互作用之存在或不存在，由此確定個體之免疫健康。

【0007】 本發明進一步提供一種確定個體之免疫健康之方法，其包含確定一或多種由表8、9、10及11中之任一者中所示之探針表示之染色體交互作用的存在或不存在，由此確定個體之免疫健康。本發明提供一種確定個體之免疫健康之方法，其包含確定一或多種由表14、15、6及17中之任一者中所示之探針表示之染色體交互作用的存在或不存在，由此確定個體之免疫健康。

【0008】 本發明亦提供一種確定個體之敗血症之存在或對敗血症之易感性的方法，其包含確定一或多種由表12或表13中所示之探針表示之染色體交互作用之存在或不存在。

【0009】 較佳地，進行該方法以選擇個體用於接受療法或治療。可例如對已經基於身體特徵、風險因素或症狀存在進行預先選擇之個體進行該方法。

【圖式簡單說明】

【0010】

圖1展示用於進行本發明之標記物偵測步驟的較佳方法。

圖2展示白血球譜系。

圖3展示研究設計。

圖4展示38名無症狀(正方形)、輕度(三角形)及ICU（嚴重）(圓形)患者(來自3組)之PCA。

圖5僅展示輕度(圓形)及ICU (正方形)之PCA。

圖6展示分析流水線。

圖7展示ICU相對於輕度之20 Hallmark GeneSets。中央欄表示在ICU與輕度之間共有的GeneSets。右下方之四個集合指示與ICU患者相關之免疫過程。基於頂部EpiSwitch標記物鑑別此等20個基因集且它們在基因位置處之定位係由GeneSets描述。

圖8展示ICU相對於輕度之BioCarta路徑。共有基因集展示於中央且最左側的7個基因集展示與ICU相關之免疫過程。此分析係基於頂部EpiSwitch標記物之基因體位置，以查看哪些重疊基因係哪些路徑之一部分。

圖9展示ICU相對於輕度的前20個reactome路徑。ICU右側之7個基因集係關於免疫過程。免疫及血管緊張素過程展示於輕度中。在此分析中，將EpiSwitch位置與reactome資料庫中所描述之相同基因體位置進行比較。

圖10展示與免疫過程相關之針對輕度的前100個顯著標記物。此並非二維PCA，而是類似的一維標準線性判別分析(針對三個臨床結果/表型，

所有複雜度減少至一個線性得分)。其係基於前100個顯著標記物產生，僅在輕微情況下且無症狀或嚴重ICU存在，且在其位置與基因體中之免疫基因基因座重疊(因此稱為免疫EpiSwitch標記物)。此分析含有80名患者：在來自UK (1)及USA (2)之三組頂部，且具有來自Lima、Peru之42名患者，全部在Lima變成來自Covid-19之最高死亡位點時收集。圖式之頂部係在頁面左側。圓形之頂部集合係嚴重的(頁面之左下方)。圓形之中間集合係輕度的(頁面之頂部)。圓形之底部集合係無症狀的(頁面之中間右邊)。

圖11展示圖10之標記物之基因體視圖。

圖12展示與免疫過程相關之針對ICU之前100個顯著標記物，展示ICU為不同的表型。此分析以與圖10相同之方式進行，除了所使用之頂部標記物皆為統計顯著的且存在於ICU (嚴重)患者組中，而不是在輕度或無症狀組中。此表明，基於ICU結果特有且在血液收集及第一Covid-19測試時存在於併發症之前的頂部標記物，吾人可預測地將針對嚴重結果存在之概況鑑別及區分為與不同臨床結果相關之3D基因體學中之不同表型。圖式之頂部係在頁面左側。圓形之頂部集合係嚴重的(頁面之左上方)。圓形之中間集合係輕度的(來自頁面底部之第二組圓)。圓形之底部集合為無症狀(至頁面之右下方)。

圖13展示圖12之標記物之基因體視圖。

圖14係關於如何針對LDA分析及分類統計來選擇與免疫過程相關之前50個ICU標記物。使用30個訓練樣品集來選擇標記物且隨後用於對12個測試集進行分類。

圖15展示使用富含前50個標記物之基因位置對路徑之富集。

圖16展示使用富含前50個標記物之基因位置對化合物之富集。

圖17展示使用前50個標記物之30個訓練集之LDA曲線。頁面之左側為圖式之頂部。頂部處之三角形為嚴重的(頁面之左上方)。底部之圓形為輕度的(頁面之右下方)。

圖18展示具有12個設定測試之30個訓練集之LDA曲線。

圖19展示藉由LDA對來自Lima群組之42名患者之患者調用及藉由LDA調用分級預測之功效。

圖20展示標準STRING網路分析-功能蛋白締合網路，其中具有ICU/嚴重COVID相關之EpiSwitch顯著標記物之免疫基因過度施加至已知交互作用網路上。其極好地匹配已知網路且展示經由EpiSwitch調節異常基因高度連接調節網路之一部分。為了網路完成，不需要添加超出Episwitch清單之額外節點形式。表5展示所涉及之關鍵基因之名稱且提供另外資料。

圖21展示應如何解釋表6。

圖22展示與藉由對本發明工作中所發現之標記物之分析鑑別的免疫過度反應及敗血症兩者相關的路徑。特定言之，牽涉PSMA5，且HG38_1_109341939_109348573_109359719_109366704_RR (OBD183_q481.q483)為共用標記物。PSMA5、CD3D及CD3G為與抗原處理交叉呈現相關之路徑中之匹配基因，且KLRG1、CD3D及CD3G為與淋巴與非淋巴細胞之間的免疫調節交互作用相關之路徑中之匹配基因。

【實施方式】

【0011】

本文所用之術語

本發明之方法可在本文中稱作本發明之『方法(process)』。

【0012】 進行分型之染色體交互作用在本文中可稱為『標記物』、『CCS』、『染色體構形標記』、『表觀遺傳交互作用』或『EpiSwitch標記物』。

【0013】 將根據上下文解釋字組『分型』，但通常將係指偵測特定染色體交互作用是否存在或不存在。

【0014】 術語『免疫過度反應』為在其內包括對個體造成傷害之任何類型之免疫反應的廣義術語，一般因為其高於其應存在或根本不應存在。典型地，免疫反應將為細胞介素風暴、過度發炎或自體免疫反應。

【0015】 術語『免疫相關副作用』係關於另一類型之有害免疫反應，其藉由本發明方法偵測，且通常係關於所給與療法之副作用。

【0016】 冠狀病毒感染為基於許多本文所描述之工作的疾病模型。因此，在結果或表格係指『嚴重』疾病或表型之情況下，此表示如本文所描述之免疫反應。

【0017】

與本發明相關之表觀遺傳交互作用

在本發明中分型之染色體交互作用通常為染色體之遠端區域之間的交互作用，該等交互作用為動態的且視染色體區域之狀態而改變、形成或斷裂。彼狀態將反映免疫健康之不同態樣。

【0018】 染色體交互作用可例如反映其是否經轉錄或抑制。已發現對如本文所定義之免疫健康『子組』具有特異性之染色體交互作用為穩定的，由此提供量測兩個子組之間的差異的可靠方式(例如反映不同免疫反應)。

【0019】 對免疫健康具有特異性之染色體交互作用通常在疾病過程之前或早期存在，例如相較於其他表觀遺傳標記物，諸如組蛋白之甲基化或結合變化。因此，本發明之方法能夠提供關於免疫系統在早期將起反應之方式的寶貴資訊。此允許因此更有效的早期干預(例如，治療)。染色體交互作用亦反映個體之當前狀態且因此可用於評定疾病狀態之變化。此外，在相同子組內之個體之間的相關染色體交互作用中存在極少變化。偵測染色體交互作用具有很高的資訊性，其中每個基因具有至多50種不同可能的交互作用，且因此本發明之方法可例如查詢500,000種可能的不同交互作用。

【0020】 染色體交互作用可重疊且包括經展示以編碼相關或未描述基因之染色體區域，但同等地可在基因間區域中。另外應指出，發明人發現所有區域中之染色體交互作用在確定染色體基因座之狀態中同樣重要。

【0021】 在本發明中偵測到之染色體交互作用可因環境因素、DNA甲基化、非編碼反義RNA轉錄物、非突變致癌物、組蛋白修飾、染色質重構及特定局部DNA交互作用而受底層DNA序列之變化影響。然而，必須牢記，如本文所定義之染色體交互作用本身為調控型式且與任何基因標記物(DNA序列變化)或任何其他表觀遺傳標記物不具有一對一對應關係。

【0022】 導致染色體交互作用之變化可受底層核酸序列之變化影響，該等變化本身不直接影響基因產物或基因表現模式。此類變化可為例如基因內及/或基因外之SNP、基因間DNA之基因融合及/或缺失、微RNA及非編碼RNA。舉例而言，眾所周知，大約20%之SNP在非編碼區域中，且因此如所描述之方法在非編碼情形中亦具有資訊性。在一個態樣中，聚集在一起以形成交互作用之染色體區域小於5 kb、3 kb、1 kb，在相同染

色體上相隔500個鹼基對或200個鹼基對。

【0023】 在本發明方法中所偵測到之染色體交互作用可在任何基因、表中所定義之染色體區域中或在本文所展示之任何路徑中(例如在此類路徑中之任何基因中)。

【0024】 所偵測到之染色體交互作用可在基因內，諸如本文所提及之任何基因。然而，其亦可在基因之上游或下游，例如距基因之上游或下游或距編碼序列至多50,000、至多30,000、至多20,000、至多10,000或至多5000個鹼基。

【0025】

本發明之方法

本發明之方法包含用於偵測與免疫健康相關之染色體交互作用的分型系統。可使用任何適合的分型方法，例如偵測到交互作用中之染色體鄰近度的方法。分型方法可使用本文所提及之*EpiSwitch*™系統進行，該系統例如可藉由包含以下步驟之方法(例如對來自個體之樣品)進行：

(i)交聯在染色體交互作用中聚集在一起之染色體區域；

(ii)視情況自該等染色體基因座分離交聯DNA

(iii)使該交聯DNA經歷裂解，及

(iv)接合存在於經交聯實體中之核酸以自形成染色體交互作用之兩個區域衍生具有序列之經接合核酸。

【0026】 此經接合核酸之偵測允許確定特定染色體交互作用之存在或不存在。因此，經接合核酸充當染色體交互作用存在之標記物。較佳地，經接合核酸係藉由PCR或基於探針之方法，包括qPCR方法偵測。

【0027】 在該方法中，染色體可藉由任何適合的手段交聯，例如藉

由通常為化合物之交聯劑。在一較佳態樣中，交互作用係使用甲醛交聯，但亦可藉由任何醛或D-生物素-e-胺基己酸-N-羥基丁二醯亞胺酯或地高辛-3-O-甲基羰基-e-胺基己酸-N-羥基丁二醯亞胺酯交聯。對甲醛可交聯以4埃間隔之DNA鏈。較佳地，染色體交互作用係在同一染色體上。典型地，染色體交互作用間隔2至10埃。

【0028】 交聯較佳為活體外。裂解較佳藉由用酶(諸如TaqI)限制性消化來進行。接合可形成DNA環。

【0029】 在使用聚合酶鏈反應(PCR)偵測或鑑別經接合核酸之情況下，所產生之PCR產物之大小可指示存在之特定染色體交互作用，且因此可用於鑑別基因座之狀態。在較佳態樣中，使用本文中任何表中所示之引子，例如使用表1或表3中所示之引子對(對應於所偵測到之染色體交互作用)。在其他較佳態樣中，使用表8、9、10、11、12、13、14、15、16或17中所示之引子(對應於所偵測到之染色體交互作用)。亦可使用此類引子或引子對之同源物，其可與原始序列具有至少70%同一性。

【0030】 在探針用於偵測或鑑別經接合核酸之情況下，此通常係藉由探針與經接合核酸之間的基於華特生-克里克(Watson-Crick)之鹼基配對。可使用如本文中之任何表中所示之探針序列，例如表1或表3中所示之探針序列(對應於所偵測到之染色體交互作用)。可使用如表8、9、10、11、12、13、14、15、16或17中所示之探針序列(對應於所偵測到之染色體交互作用)。亦可使用此類探針序列之同源物，其可與原始序列具有至少70%同一性。

【0031】 根據本發明方法之分型可在多個時間點進行，例如以監測疾病進展。此可在一或多個經定義時間點處，例如在至少1、2、5、8或

10個不同的時間點處。至少1、2、5或8個時間點之間的持續時間可為至少5、10、20、50、80或100天。通常相隔至少50天存在3個時間點。

【0032】

子組及個人化治療

如本文所用，「子組」係指群體子組，更佳為特定生物體，諸如特定真核生物、動物、鳥類或哺乳動物之群體中之子組。最佳地，「子組」係指人類群體中之子組。因此，較佳進行本發明方法以偵測真核生物(諸如動物、哺乳動物或鳥類)中，且較佳人類中之冠狀病毒感染之存在。本發明之方法可出於診斷或預後目的進行。

【0033】 本發明包括偵測及治療群體中之特定子群，其通常在其免疫健康方面不同，例如對特定免疫過度反應之易感性。發明人發現，染色體交互作用在相關群體中之子組(例如，至少兩個子組)之間不同。鑑別此等差異將允許醫師將其患者分類為群體之一個子組之一部分。因此，本發明為醫師提供一種基於其表觀遺傳染色體交互作用個人化患者之藥品的方法。此類測試可用於選擇如何隨後治療患者，例如藥物類型及/或其劑量及/或其投與頻率。

【0034】

所測試之個體

在本發明方法中所測試之個體可能已按某種方式選擇，例如基於風險因素或身體特徵。可基於對於給定疾病無症狀或處於疾病早期或具有疾病之輕度形式來選擇個體。

【0035】 個體可能易患本文所提及之任何病狀及/或可能需要所提及之任何療法。個體可接受本文所提及之任何療法。特定言之，個體可患有

或疑似患有與免疫系統相關之病狀，諸如本文所提及之任何此類病狀。

【0036】

用於進行測試之特定目的

在一個態樣中，進行該方法以測定個體之免疫健康及/或全身性免疫能力。可進行該方法以確定：

- 對感染之全身性免疫反應(例如藉由病毒、細菌或真菌病原體)

- 對腫瘤學(癌症)治療之全身性免疫反應

- 神經退化性預後之免疫概況

- 與疾病發展/宿主反應機制有關之全身性免疫能力

-類風濕性關節炎及自體免疫反應，例如作為致癌治療，尤其免疫-致癌治療之副作用

-對敗血症之免疫反應或為敗血症之治療之副作用的免疫反應。

【0037】 在一個態樣中，進行該方法以偵測對免疫系統過度反應之易感性。可進行該方法以確定對過度發炎之易感性。典型地，此過度發炎靶向個體中之極特定組織及器官，例如視其獨特弱點而定。此類過度發炎可出現於許多不同疾病及併發症中。過度發炎可為自體免疫反應，通常影響特定器官或組織，諸如對肺或心臟組織(亦即針對肺或心臟血管系統)之自體免疫反應。

【0038】 可進行該方法以偵測對細胞介素風暴、細胞介素釋放症候群或免疫危機之易感性。可進行該方法以確定對於對個體健康有害之免疫反應的易感性。該免疫反應可由可為病原體、抗原(自體或外來)或療法(包括藥物或療法)之『觸發子』引起。

【0039】 可進行該方法以確定個體在免疫-腫瘤學中之免疫反應(例

如亦考慮自體免疫副作用、類風濕性關節炎、自閉症(其具有顯著神經免疫組分)或硬皮病(其具有用於預後之顯著免疫組分)。因此，該方法可偵測對任何此類免疫反應之易感性，例如在此等病狀中之任一者中發生時。

【0040】 可進行該方法以偵測針對療法，例如靶向治療劑或干預(諸如與T細胞免疫-腫瘤學相關之療法)對免疫過度反應之易感性。

【0041】

待測試之個體之較佳群組

藉由本發明方法測試之個體可具有以下特性中之一或多者：

- 免疫功能不全，例如歸因於已與免疫抑制劑一起投與。此類免疫功能不全個體可患有類風濕性關節炎、狼瘡或可已接受器官移植；

- 由調節因子對Covid-19疫苗接種排除，例如具有過敏之個體或孕婦

- 慢性病狀

- 特約醫療客戶，希望其醫師做出Covid-19併發症之風險評鑒。(特約醫療為US單獨的健康照護系統及市場)

- 舉例而言，作為「返回至工作」策略之部分的公司勞動力之部分，諸如當待針對Covid-19併發功能評估之工作人員的雇主安排時，使得雇員可由辦公室或家庭中之工作條件相應地調節。

【0042】 待測試之其他類型之較佳個體包括：

- 已接受針對癌症之化學療法或抗體治療，包括免疫療法

- 已接受針對肺癌之放射療法(根治性放射療法)之劇烈病程

- 已接受可影響免疫系統之靶向癌症療法(諸如蛋白激酶抑制劑或PARP抑制劑)

- 其患有或已患有血液或骨髓癌(諸如白血病、淋巴瘤或骨髓瘤)

- 其患有或已患有嚴重肺病狀(諸如囊腫性纖維化、嚴重哮喘或嚴重COPD)

- 獲得感染之高風險(諸如SCID或鐮狀細胞)

- 其服用使得個體更可能獲得感染(諸如高劑量之類固醇或免疫抑制劑藥品)之藥品。

- 具有脾或脾已移除(脾切除術)之問題

- 其患有唐氏症候群(Down's syndrome)

- 具有透析或具有嚴重(5期)長期腎病

- 基於臨床判斷及其需求評定，歸類為臨床上極其脆弱的

- 為70歲或更大年紀

- 患有不嚴重肺病(諸如哮喘、COPD、肺氣腫或支氣管炎)

- 患有心臟病(諸如心臟衰竭)

- 患有糖尿病

- 患有肝病(諸如肝炎)

- 具有影響大腦或神經之病狀(諸如帕金森氏病(Parkinson's disease)、運動神經元疾病、多發性硬化或腦性麻痺)

- 其為極肥胖的(例如BMI為40或更高)。*經確定之預後*

【0043】 本發明之方法較佳藉由允許確定免疫概況，包括在該個體類型中或在該特定疾病情況下對特定類型之免疫反應的易感性來確定疾病之結果(預後)。可針對任何類型之疾病情況及/或本文中提及之任何類型之個體確定結果及/或免疫反應。因此，該方法可用於確定疾病嚴重程度之預後，且可確定個體是否具有嚴重疾病或輕度疾病之預後。該方法可確定個體是否具有將導致以下之嚴重疾病之預後：需要ICU治療、細胞介素風

暴(細胞介素釋放症候群)、過度發炎。該方法可確定個體是否需要本文所提及之任何治療或療法，諸如控制、調節或抑止免疫反應之療法。

【0044】 可進行本發明之方法以偵測敗血症。

【0045】

本文所提供之表格

表1、2、3及4展示可用於偵測免疫健康之特定標記物。該等標記物之存在或不存在可用於此類偵測(亦即其為『播散性』標記物)。表1及2展示存在於具有免疫過度反應之預後之個體中的標記物。表3及4展示存在於具有普通免疫反應之預後之個體中的標記物。表2及4分別為表1及3之標記物子集。本發明之方法可使用來自表1至4中之任一者之標記物或藉由使用來自超過一個表之標記物，例如使用來自表1及表3之標記物進行。

【0046】 表7展示另一組可用於確定免疫健康之標記物。本發明之方法可僅使用表7之標記物進行，或此等標記物可與如本文所揭示之其他標記物組合。在此表中，表示為『ICU』之標記物為其存在與免疫過度反應相關之標記物，且表示為『輕度』之標記物為其存在與免疫過度反應不存在相關之標記物。

【0047】 表8、9、10、11、12、13、14、15、16及17展示可用於偵測免疫健康之另一組標記物。本發明之方法可僅使用表8、9、10、11、12、13、14、15、16或17中之任一者之標記物進行，或此等標記物可與如本文所揭示之其他標記物組合。

【0048】 表8包括與嚴重表型相關之標記物(亦即免疫過度反應)。LS列中存在『1』之標記物與此表中之嚴重表型相關。此等為本發明中所用之較佳標記物。

【0049】 表9展示全部與嚴重表型相關之較佳標記物。

【0050】 表10包括與輕度表型相關之標記物(亦即缺乏免疫反應)。LS列中存在『-1』之標記物與輕度表型相關。此等為本發明中所用之較佳標記物。

【0051】 表11展示全部與輕度表型相關之較佳標記物。

【0052】 表12及13展示可用於確定敗血症狀態之標記物。表12中之結果係關於「S_SS」及「qPCR_ICU」。此等標記物為27個標記物，其為ICU預後標記物，但亦已發現在對患有敗血症對嚴重敗血症之患者的分析中顯著及敗血症-特異性。表13中之結果係關於「H_SS」及「qPCR_ICU」。此等標記物為ICU預後標記，當與健康比較時，其亦在分析患有嚴重敗血症之患者中以顯著及嚴重敗血症特異性而出現。

【0053】 表14及15展示較佳嚴重表型標記物，CCS列中之『1』表示彼表型。

【0054】 表16及17展示較佳輕度表型標記物，CCS列中之『-1』表示彼表型。

【0055】 標記物使用探針序列(其偵測如本文所定義之接合產物)定義。前兩組開始-結束位置展示探針位置，且後兩組開始-結束位置展示相關4kb區域。標記物可參考開始-結束位置定義，提供該等位置係因為該等位置將以與探針序列相同之方式獨特地鑑別標記物。

【0056】 以下資訊提供於探針資料表中：

RP-對每個染色體交互作用評估之秩積統計Rsum。

FC-交互作用頻率(正或負)。

Pfp-估算誤判為正預測之百分比(pfp)，考慮正及負染色體交互作用

兩者。

Pval-估算各CCS之pvalue為正及負。

Adj.P.value (FDR) -經假發現率調節之p.value。

所偵測到之循環-在此狀態中發現循環。

【0057】 基於簡單變換之估算用於確定在隨機實驗中如何觀測到給定RP值或更好。該估算具有以下步驟：

1. 產生長度n之k等級清單之p變換。

2. 計算p變換中之n CCS之秩積。

3. 計數(c)該變換中CCS之秩積之次數小於或等於所觀測到之秩積。將c設定成此值。

4. 藉由以下計算秩積之平均期望值：Erp(g)=c/p。

5. 將誤判為正之百分比計算為：pfp (g)=Erp(g)/分級(g)，其中分級(g)為藉由增加RP分選之所有n個CCS之清單中之CCS g之分級。

【0058】 秩積統計根據各微陣列內之強度分級染色體交互作用且計算跨越多個微陣列之此等秩的乘積。此技術可鑑別在許多複製微陣列中之大部分差異染色體交互作用中一致地偵測到之染色體交互作用。在p值為0之情況下，此指示在樣品上CCS之秩積存在極少變化，此為CCS之信噪比及效應量之良好實例。其中p值為0且pfp為0，此意謂經變換之秩積不與實際觀測到之秩積不同。此等方法描述基於Breitling R及Herzyk P (2005)分級方法作為用於生物微陣列資料之分析之t測試的非參數替代方案。J Bioinf Comp Biol 3, 1171-1189。

【0059】 FC指示各比較中標記物之發生率，2意謂平均測試兩次，1.5意謂平均測試1.5次等，且因此FC指示標記物對表型/群組之權重。FC

值可用以給出高效測試所需之標記物多少的指示。個別標記物為強大預後指標，且通常5至10個標記物將產生高效測試，但較小數目之標記物將產生用於偵測免疫健康之功能測試。

【0060】 探針經設計遠離Taq1位點30bp。在PCR之情況下，PCR引子通常經設計以偵測接合產物，但其距Taq1位點之位置變化。探針位置：

開始1-片段1上TaqI位點上游之30個鹼基

結束1-片段1上之TaqI限制位點

開始2-片段2上之TaqI限制位點

結束2-片段2上TaqI位點下游之30個鹼基

【0061】 4kb序列位置：

開始1-片段1上TaqI位點上游之4000個鹼基

結束1-片段1上之TaqI限制位點

開始2-片段2上之TaqI限制位點

結束2-片段2上TaqI位點下游之4000個鹼基

【0062】 表5係關於圖20中所示之網路分析且展示此網路中所表示之String功能子網路，其中子網路中之關鍵基因之名稱與EpiSwitch標記物相關。

【0063】 表6提供與對嚴重疾病後果具有特異性之EpiSwitch顯著標記物相關之具有與其相關之受影響基因集合(參見#基因欄)及具有來自彼等集合之個別基因(參見以下欄#匹配基因)的治療性化合物之清單(其所有均為免疫相關基因)。在表中：

- 具有基因總數目之欄展示受治療劑影響之基因

- 具有匹配基因之欄展示匹配EpiSwitch標記物之受影響基因之數目。

【0064】 所獲得之高得分證實匹配基因之非隨機選擇，亦即受嚴重疾病患者中之3D基因體架構影響。

【0065】 表7展示一組用於本發明之較佳標記物，以及較佳探針及PCR引子。與各標記物之存在相關之特定預後展示於第一欄中：『輕度』指示COVID疾病之臨床表現(與無症狀病狀相反)，其中患者可甚至住院，但對標準護理起反應且保持穩定；『ICU』指示嚴重病狀，其中住院患者對醫院病房之標準護理並不起反應且需要加護病房(ICU)支持。嚴重(ICU)之實例為過度發炎且需要機械換氣。

【0066】 表8展示一組用於本發明之標記物。此表中可使用任何標記物。較佳標記物在LS欄中具有『1』與此表中之嚴重表型相關，且因此所有此等標記物表示標記物之較佳子集，標記物可自其中選擇用於本發明中。

【0067】 表9展示全部與嚴重表型相關之標記物。該表亦展示較佳引子及探針序列。此等引子及探針可以qPCR形式用於偵測相關標記物。

【0068】 表10展示一組用於本發明之標記物。此表中可使用任何標記物。較佳標記物在LS欄中具有『-1』與此表中之輕度表型相關，且因此所有此等標記物表示標記物之較佳子集，標記物可自其中選擇用於本發明中。

【0069】 表11展示全部與輕度表型相關之標記物。該表亦展示較佳引子及探針序列。此等引子及探針可以qPCR形式用於偵測相關標記物。

【0070】 表14及16展示可視情況以qPCR形式使用之較佳探針及引

子序列。

【0071】 表15及17展示可視情況以巢式PCR形式使用之較佳引子序列。

【0072】

較佳標記物集合

本發明係關於藉由對染色體交互作用標記物(諸如本文所揭示之特定標記物中之任一者，例如表1或表3中)或標記物之較佳組合或本文所揭示之經界定特定區域中之標記物)進行分型來偵測對免疫健康之預後。可對存在於表中所提及之基因及區域中之標記物進行分型。本文中藉由定位或藉由探針及/或引子序列來定義特定標記物。因此，較佳標記物為由本文中之表中所揭示之探針及/或引子對表示之標記物。

【0073】 本發明係關於藉由對染色體交互作用標記物(諸如表8、9、10、11、14、15、16或17中所揭示之特定標記物中之任一者，或來自此等表中之任一者之標記物之較佳組合，或此等表中之任一者中所揭示之經界定特定區域中之標記物)進行分型來偵測對冠狀病毒感染之預後。

【0074】 本發明係關於藉由對染色體交互作用標記物(諸如表12或表13中所揭示之特定標記物中之任一者，或來自此等表中之任一者的標記物之較佳組合)進行分型來進一步偵測冠狀病毒感染期間之敗血症狀態。

【0075】 標記物之組合可以不同方式定義，諸如：

- 藉由由本文所定義之任何參數進行分級，或
- 根據表1或表3之任何『部分』，
- 參考在該等表之左欄中所列之該標記物之『編號』。

【0076】 在一較佳態樣中，針對表中所提及之任何參數，諸如FC，

自前40個標記物對至少10個標記物進行分型。

【0077】 在一個態樣中，對一或多個標記物進行分型，該一或多個標記物：

(i)存在於表1或表3中所列之區域中之任一者中；及/或

對應於由表1或表3中所示之任何探針表示的染色體交互作用中之任一者；及/或

(iii)存在於包含或側接(i)或(ii)之4,000個鹼基區域中。

【0078】 在一較佳態樣中：

- 至少5種染色體交互作用係自表1分型，及/或

- 至少5種染色體交互作用係自表3分型。

【0079】 在另一較佳態樣中，至少5種染色體交互作用進行分型，該等染色體交互作用選自：

- 表1中之前40種交互作用，其使用任何參數定義，及/或

- 表3中使用任何參數定義之前40種交互作用。

【0080】 標記物之組合可由表8、9、10、11、12、13、14、15、16或17之任何『部分』定義。

【0081】 在一較佳態樣中，針對表中所提及之任何參數，諸如FC，自前40個標記物對至少10個標記物進行分型。

【0082】 在一個態樣中，對一或多個標記物進行分型，該一或多個標記物：

(i)存在於表8、9、10或11中所列之區域中之任一者中；及/或

(ii)對應於由表8、9、10或11中所示之任何探針表示的染色體交互作用中之任一者；及/或

(iii)存在於包含或側接(i)或(ii)之4,000個鹼基區域中。

【0083】 在一較佳態樣中：

- 至少5種染色體交互作用係自表9分型，及/或

- 至少5種染色體交互作用係自表11分型。

【0084】 在另一較佳態樣中，至少5種染色體交互作用進行分型，該等染色體交互作用選自：

- 表8中使用任何參數定義之前40種交互作用，及/或

- 表10中使用任何參數定義之前40種交互作用。

【0085】

待分型之標記物之較佳數目

歸因於染色體交互作用調節之性質，包括其類網路特性，對極少數目之本文所揭示之標記物進行分型將導致有效測試。標記物之不同數目及組合產生不同的效能特性。進一步如將瞭解，標記物可選自表1或表3整體上或選自由數字及字母(例如『a2』)定義之表之部分。類似地，標記物可選自表8、9、10、11、14、15、16或17中之任一者之全部或部分。標記物亦可選自表12及13之全部或部分。

【0086】 在一個態樣中，該方法包含分型至少3、5、8、10、15、20、50、100、150、200、250或300種由表1中之探針表示之染色體交互作用。在一個實施例中，對由表1中之探針表示之至少10種染色體交互作用進行分型。

【0087】 在一個態樣中，該方法包含分型至少3、5、8、10、15、20、25或30種由表2中之探針表示之染色體交互作用。在一個實施例中，對由表2中之探針表示之至少10種染色體交互作用進行分型。

【0088】 在一個態樣中，該方法包含分型至少3、5、8、10、15、20、50、80、100、150或200種由表3中之探針表示之染色體交互作用。

【0089】 在一個態樣中，該方法包含分型至少3、5、8或10種由表4中之探針表示之染色體交互作用。在一個實施例中，對由表4中之探針表示之至少10種染色體交互作用進行分型。

【0090】 在一個態樣中，至少3、5、8、10、15或20種染色體交互作用係使用任何參數自經界定表1中之前40個標記物分型及/或至少3、5、8、10、15或20種染色體交互作用係使用任何參數自經界定表3中之前40個標記物分型。

【0091】 在一個態樣中，2、3、4、5或6種標記物係自表7分型。表7之所有6種標記物可分型。在另一態樣中，來自表7之所有6個標記物與來自表1之至少3、5、8、10、15或20種染色體交互作用一起分型。在另一態樣中，表7之所有6個標記物與來自表3之至少3、5、8、10、15或20個標記物一起分型。

【0092】 在一個態樣中，該方法包含分型至少3、5、8、10、15、20、50、100、150、200、250或300種由表8中之探針表示之染色體交互作用。較佳至少對由表8中之探針表示之至少10種染色體交互作用進行分型。

【0093】 在一個態樣中，該方法包含分型至少3、5、8、10、15、20、50、100種或所有由在LS欄具有『1』之表8中所示之染色體交互作用。較佳地，對由在LS欄具有『1』之表8中之至少10種染色體交互作用進行分型。

【0094】 在一個態樣中，該方法包含分型至少3、5、8、10、15、

20、30種或所有表9中所示之染色體交互作用。較佳地，對由表9中之探針表示之至少10種染色體交互作用進行分型。

【0095】 在一個態樣中，該方法包含分型至少3、5、8、10、15、20、50、100、150、200種或所有由表10中之探針表示之染色體交互作用。較佳地，對由表10中之探針表示之至少10種染色體交互作用進行分型。

【0096】 在一個態樣中，該方法包含分型至少3、5、8、10、15、20、50、80種或所有由在LS欄具有『-1』之表10中所示之染色體交互作用。較佳地，對在LS欄具有『-1』之表8中所示之至少10種染色體交互作用進行分型。

【0097】 在一個態樣中，該方法包含分型至少3、5、8、10種或所有表11中所示之染色體交互作用。較佳地，對由表11中之探針表示之至少10種染色體交互作用進行分型。

【0098】 在一個態樣中，該方法包含分型至少3、5、8、10、20、25種或所有表12中所示之染色體交互作用。較佳地，對由表12中之探針表示之至少10種染色體交互作用進行分型。

【0099】 在一個態樣中，該方法包含分型至少2、3或5種表13中所示之染色體交互作用。較佳地，對由表13中之探針表示之至少5種染色體交互作用進行分型。

【0100】 在一個態樣中，該方法包含分型至少3、5、8、10、15、20、50、70種或所有由表14中之探針表示之染色體交互作用。較佳地，對由表14中之探針表示之至少10種染色體交互作用進行分型。

【0101】 在一個態樣中，該方法包含分型至少3、5、8、10、15、

20、50、100、120種或所有由表15中之探針表示之染色體交互作用。較佳地，對由表15中之探針表示之至少10種染色體交互作用進行分型。

【0102】 在一個態樣中，該方法包含分型至少3、5、8、10、15、20、40種或所有由表16中之探針表示之染色體交互作用。較佳地，對由表16中之探針表示之至少10種染色體交互作用進行分型。

【0103】 在一個態樣中，該方法包含分型至少3、5、8、10、15、20、50、80種或所有由表17中之探針表示之染色體交互作用。較佳地，對由表17中之探針表示之至少10種染色體交互作用進行分型。

【0104】

染色體交互作用之類型

在一個態樣中，基因座(包括其中偵測到染色體交互作用之基因及/或位置)可包含CTCF結合位點。此為能夠結合轉錄抑制物CTCF之任何序列。該序列可由序列CCCTC組成或包含該序列CCCTC，其可在基因座處以1、2或3個複本存在。CTCF結合位點序列可包含序列CCGCGNGGNGGCAG (在IUPAC標記法中)。CTCF結合位點可在染色體交互作用之至少100、500、1000或4000個鹼基內或在表1所示之染色體區域中之任一者內。

【0105】 當使用探針進行偵測時，通常可偵測來自探針之兩個區域(亦即來自染色體交互作用之兩個位點)的序列。在較佳態樣中，在方法中使用包含與任何表中所示之探針相同或互補序列或由其組成的探針。在一些態樣中，使用包含與表中所示之探針序列中之任一者同源之序列的探針。

【0106】

用以鑑別標記物及標記物組之方法

本文所描述之本發明係關於與表型密切相關之憑藉自身能力呈調節模態之染色體構形概況及3D架構。生物標記物之發現係基於經由圖案識別進行之標註及對表示表型中之差異的臨床樣品之代表性群組進行之篩選。吾等在編碼及非編碼部分上且在大範圍的用於鑑別統計學上播散一致的條件性播散染色體構形的已知基因之非編碼5'及3'上標註且篩選基因體之顯著部分，其例如錨定在開放閱讀框架之內(固有的)或開放閱讀框架之外的非編碼位點中。

【0107】 在選擇最佳標記物時，吾等受標記物引線之統計資料及p值驅動。標籤內所選擇及驗證染色體構形自身為播散分層實體，無論用於參考中之基因之表現概況如何。可針對相關調節模態進行另外的操作，諸如錨定位點之SNP、基因轉錄概況之變化、H3K27ac含量之變化。

【0108】 吾等正考慮臨床表型差異及其基於基礎生物學及表觀遺傳學對表型之控制，包括(例如)調節網路之構架進行分層的問題。因此，為輔助分層，吾人可捕獲網路之變化且其較佳經由若干生物標記物之標籤，例如經由遵循用於標記物減少的機器學習演算法進行，該機器學習演算法包括評估標記物之最佳數目以在最少雜訊下對測試群組進行分層。此可以3-20種標記物結束。

【0109】 標記物組之選擇可藉由交叉驗證統計效能來進行(而非例如藉由用於參考名稱之相鄰基因之功能相關性來進行)。

【0110】 一組標記物(具有相鄰基因之名稱)為在基因體之顯著部分中進行篩選，以無偏方式分析基因體之顯著部分中超過14,000-60,000個經標註EpiSwitch位點之統計播散能力的群集選擇之產物。對於分層問

題，不應將其視為對已知功能值之基因進行染色體構形之定製捕獲。染色體交互作用之位點之總數目為120萬，且因此組合之潛在數目為120萬至功效120萬。吾等遵循之方法仍然允許鑑別相關染色體交互作用。

【0111】 由本申請案提供之特定標記物已通過選擇，其統計學上(顯著)與病狀或子組相關。此經相關表中之資料所證實。可將各標記物看作表示作為在相關病狀中體現之網路下調之部分的生物表觀遺傳之事件。在實際術語中，其意謂此等標記物在相較於對照時在患者組中普遍存在。平均而言，作為一實例，個別標記物可通常存在於80%經測試患者中及10%經測試對照中。

【0112】 所有標記物之簡單添加將不直接表示一些失調之間的網路相互關係。此為可引入標準多變量生物標記物分析GLMNET (R套裝軟體)之地方。GLMNET套裝軟體有助於鑑別一些標記物之間的相互依賴性，此反映其在達成產生疾病表型之失調中之共同作用。對具有最高GLMNET得分之標記物進行建模且隨後測試不僅提供鑑別準確地鑑別患者群組之標記物之最小數目，且亦鑑別由於對照組中之低發背景統計雜訊而在患者之對照組中提供最少誤判為正結果之最小數目。通常，所選標記物(諸如3至10種)之群組(組合)提供偵測之敏感性與特異性兩者之間的最佳平衡，在多變量分析之情形下自病狀之所有所選統計顯著標記物之個別特性新出現。

【0113】 本文中之表展示用於陣列分析之陣列探針(60-mer)之參考名稱，該陣列分析與交互作用位點之間的接合點、染色體數目及並接之兩個染色體片段之起點及終點重疊。表中所列之各標記物之名稱產生由相關探針識別之兩個區域之染色體位置編號，提供以獨特方式定義染色體交互

作用之替代方式。

【0114】

樣品及樣品處理

本發明之方法將通常在樣品上進行。可在限定時間點處，例如在本文所定義之任何時間點處獲得樣品。樣品通常將含有來自個體之DNA。其通常將含有細胞。在一個態樣中，樣品係藉由最小創傷性方式獲得且可例如為血液樣品。DNA可經提取且用標準限制酶切碎。此可預測定哪些染色體構形將保留且將藉由EpiSwitch™平台偵測到。由於組織與血液之間的染色體交互作用之同步(包括水平轉移)，血液樣品可用於偵測組織(諸如與疾病有關之組織)中之染色體交互作用。

【0115】

用於樣品製備及染色體交互作用偵測之較佳態樣

本文描述製備樣品且偵測染色體構形之方法。可使用此等方法之最佳(非習知)型式，例如，如此章節中所描述。

【0116】 樣品通常將含有至少2×10^5個細胞。樣品可含有至多5×10^5個細胞。在一個態樣中，樣品將含有2×10^5至5.5×10^5個細胞。

【0117】 本文描述存在於染色體基因座處之表觀遺傳染色體交互作用之交聯。此可在細胞裂解發生之前進行。細胞裂解可進行3至7分鐘，諸如4至6或約5分鐘。在一些態樣中，細胞裂解進行至少5分鐘及少於10分鐘。

【0118】 本文中描述了用限制酶消化DNA。通常，使DNA限制在約55℃至約70℃，諸如約65℃下進行約10至30分鐘，諸如約20分鐘之時段。

【0119】 較佳地，使用產生平均片段大小至多為4000個鹼基對之經接合DNA之片段的頻繁切割限制酶。視情況，限制酶產生平均片段大小為約200至300個鹼基對，諸如約256個鹼基對之經接合DNA之片段。在一個態樣中，典型片段大小為200個鹼基對至4,000個鹼基對，諸如400至2,000個或500至1,000個鹼基對。

【0120】 在EpiSwitch方法之一個態樣中，不在DNA限制消化步驟與DNA接合步驟之間執行DNA沈澱步驟。

【0121】 DNA接合描述於本文中。通常，DNA接合進行5至30分鐘，諸如約10分鐘。

【0122】 樣品中之蛋白質可以酶方式，例如使用蛋白酶，視情況蛋白酶K消化。蛋白質可以酶方式消化約30分鐘至1小時，例如約45分鐘之時段。在消化蛋白質(例如，蛋白酶K消化)之後的一個態樣中，不存在交聯逆轉或酚DNA提取步驟。

【0123】 在一個態樣中，PCR偵測能夠偵測經接合核酸之單一複本，較佳地用二進位讀出是否存在經接合核酸。

【0124】 圖1展示偵測染色體交互作用之較佳方法。

【0125】

本發明之方法及用途

本發明之方法可以不同方式描述。其可為描述為一種製造經接合核酸之方法，該方法包含(i)使在染色體交互作用中聚集在一起之染色體區域活體外交聯；(ii)使該交聯DNA經歷切割或限制消化裂解；及(iii)接合該等經裂解之交聯DNA末端以形成經接合核酸，其中經接合核酸之偵測可用於確定基因座處之染色體狀態，且其中較佳地：

- 基因座可為表1、3、8或10中所提及之基因座或區域中之任一者，及/或

- 其中染色體交互作用可為本文中所提及之染色體交互作用中之任一者或對應於表1、3、8或10中所揭示之探針中之任一者，及/或

- 其中接合產物可具有或包含：(i)與表1、3、8或10中所揭示之探針序列中之任一者相同或同源的序列；或(ii)與(i)互補之序列。

【0126】 可將本發明之方法描述為一種用於偵測表示群體中之不同子組之染色體狀態的方法，其包含確定染色體交互作用在基因體之經界定表觀遺傳作用區域內之存在或不存在，其中較佳地：

- 該子組由免疫健康之預後定義，及/或

- 染色體狀態可在表1或表3中所提及之任何基因座或區域處；及/或

- 染色體交互作用可為表1或表3中所提及之彼等交互作用中之任一者，或對應於彼等表中所揭示之探針中之任一者。

【0127】 表7之標記物中之一或多者可用於本發明之此等態樣中，例如表3、4、5種或所有表7之標記物。

【0128】 表8、9、10、11、12、13、14、15、16或17之標記物中之其他一或多者可用於本發明之此等態樣中，包括來自如本文所揭示之此等表中之任一者的特定數目或組合或標記物。

【0129】

同源物

本文中提及多核苷酸/核酸(例如，DNA)序列之同源物。此類同源物通常例如在至少10、15、20、30、100或更多個連續核苷酸之區域上或在來自參與染色體交互作用之染色體區域的核酸部分上具有至少70%同源

性，較佳至少80%、至少85%、至少90%、至少95%、至少97%、至少98%或至少99%同源性。可基於核苷酸同一性(有時稱為「硬同源性」)來計算同源性。

【0130】 因此，在一特定態樣中，本文中參照序列同一性百分比提及多核苷酸/核酸(例如，DNA)序列之同源物。通常，此類同源物例如在至少10、15、20、30、100個或更多個連續核苷酸之區域上或在來自參與染色體交互作用之染色體區域的核酸部分上具有至少70%序列同一性，較佳至少80%、至少85%、至少90%、至少95%、至少97%、至少98%或至少99%序列同一性。同源物可跨整個探針、引子或引子對具有至少70%序列同一性，較佳至少80%、至少85%、至少90%、至少95%、至少97%、至少98%或至少99%序列同一性。

【0131】 舉例而言，UWGCG套裝軟體提供可用於計算同源性及/或序列同一性% (例如，在其預設設置上使用)的BESTFIT程式(Devereux等人(1984) Nucleic Acids Research 12, 第387-395頁)。PILEUP及BLAST算法可用於計算同源性及/或序列同一性%及/或對齊序列(諸如鑑別等效或對應序列(通常按其預設設置))，例如如Altschul S. F. (1993) J MoI Evol 36:290-300；Altschul, S, F等人 (1990) J MoI Biol 215:403-10中所描述。

【0132】 進行BLAST分析之軟體為可經由國家生物技術資訊中心(National Center for Biotechnology Information)公開獲得。此演算法涉及藉由鑑別查詢序列中之長度W之短字來首先鑑別得高分序列對(high scoring sequence pair；HSP)，該等短字在與資料庫序列中相同長度之字比對時匹配或滿足某些正值臨限值分數T。T稱作鄰域字得分臨限值(Altschul等人，前述)。此等初始鄰域字命中充當用於啟動搜尋之種子以

發現含有其之HSP。字命中沿各序列以兩個方向延伸，只要累積比對得分可增加即可。當以下情況時，字命中者沿各方向之延伸中斷：累積比對分值自其達成之最大值降低數量X；累積分值由於一或多個負分殘基比對之累加而變成零或更低；或達至任一序列之末端。BLAST演算法參數W5 T及X確定比對之靈敏度及速度。BLAST程式使用以下作為預設：字長度(w)為11，BLOSUM62計分矩陣(參見Henikoff及Henikoff (1992) Proc. Natl. Acad. Sci. USA 89: 10915-10919)比對(B)為50，期望值(E)為10，M=5，N=4，及兩股之比較。

【0133】 BLAST演算法進行兩個序列之間相似性的統計分析；參見例如Karlin及Altschul (1993) Proc. Natl. Acad. Sci. USA 90: 5873-5787。一種由BLAST演算法提供之相似性量度為最小總機率(P(N))，其提供兩個多核苷酸序列之間將偶然出現匹配之機率的指示。舉例而言，若第一序列與第二序列之比較中的最小和機率小於約1、較佳小於約0.1、更佳小於約0.01且最佳小於約0.001，則認為序列與另一序列相似。

【0134】 同源序列通常相差1、2、3、4個或更多個鹼基，諸如少於10、15或20個鹼基(其可經取代、缺失或插入核苷酸)。可在上文關於計算同源性及/或序列同一性%所提及之區域中之任一者上量測此等變化。

【0135】 可例如藉由將兩個序列視為單一序列(如同兩個序列接合在一起)以便隨後與同樣被視為單一序列之另一引子對進行比較來計算『引子對』之同源性。

【0136】

EpiSwitch™技術

EpiSwitch™技術亦關於微陣列EpiSwitch™標記物資料在偵測對表

型具有特異性之表觀遺傳染色體構形標籤中之用途。以本文所描述之方式利用經接合核酸的態樣(諸如EpiSwitch™)具有若干優點。其具有低水準之隨機雜訊，例如此係因為來自本發明之第一組核酸的核酸序列與第二組核酸雜交或未能與第二組核酸雜交。此提供允許以相對簡單的方式在表觀遺傳水準下量測複雜機制之二元結果。EpiSwitch™技術亦具有快速處理時間及低成本。在一個態樣中，處理時間為3小時至6小時。

陣列

【0137】本文所揭示之所有核酸均可結合至陣列，且在一個態樣中，有至少15,000、45,000、100,000或250,000個不同核酸結合至陣列，其較佳表示至少300、900、2000或5000個基因座。在一個態樣中，一種或多種或所有不同的核酸群體結合至超過一個不同的陣列區域，實際上在陣列上重複以允許進行錯誤偵測。陣列可基於Agilent SurePrint G3 Custom CGH微陣列平台。可藉由雙色系統進行第一核酸與陣列之結合的偵測。

【0138】

偵測臨限值

已發現本文所揭示之標記物為能夠確定免疫健康狀態或子組之『播散標記物』。在實際術語中，其意謂此等標記物在與對照相比時在患者組中為普遍的(例如，如藉由FC值所示)。平均而言，作為一實例，個別標記物可通常存在於80%經測試患者中及10%經測試對照中。因此，在該方法之一個態樣中，若針對彼子組所測試之至少80%標記物存在於個體中及/或若個體中不存在與對照相關之所測試之至少80%標記物，則個體視為相關預後子組之一部分。

【0139】

治療劑及治療

此章節與以下兩者相關：

- 向藉由本發明方法選擇之個體給與治療劑，及

- 治療劑係基於本發明方法之結果而選擇。

【0140】 本發明提供用於預防或治療本文所提及之任何病狀，特定言之與免疫系統相關之任何病狀的治療劑，諸如免疫過度反應、細胞介素風暴或過度發炎。此可包含向需要之個體投與治療有效量之藥劑。本發明提供藥劑在製造用於預防或治療病狀之醫藥中，例如在藉由本發明方法測試之個體中之用途。

【0141】 藥劑之調配物將視藥劑之性質而定。藥劑將以含有藥劑及醫藥學上可接受之載劑或稀釋劑的醫藥組合物之形式提供。適合的載劑及稀釋劑包括等張鹽水溶液，例如磷酸鹽緩衝鹽水。典型的口服劑量組合物包括錠劑、膠囊、液體溶液及液體懸浮液。藥劑可經調配以用於非經腸、靜脈內、肌肉內、皮下、經皮或經口投與。

【0142】 可根據各種參數，尤其根據所用之物質；待治療之個體之年齡、體重及病狀；投與途徑；及所需療程來確定藥劑之劑量。醫師將能夠判定任何特定藥劑之所需投與途徑及劑量。然而，適合的劑量可為0.1至100 mg/kg體重，諸如1至40 mg/kg體重，例如每天1至3次。

【0143】 本發明亦提供特異性免疫遺傳標靶(基因)及受失調影響之路徑，此允許靶向治療性治療。治療劑可為本文所揭示之任何此類藥劑，或可靶向本文所揭示之任何『標靶』，包括本文在任何表或任何路徑中所揭示之任何蛋白質或基因。應理解，組合中所揭示之任何藥劑亦應視為個

別地投與所揭示。

【0144】 可用於本發明中之治療劑及治療包括以下：

- 免疫調節劑

- 免疫抑制劑

- 地塞米松-例如使身體之免疫系統減弱。

- 恢復期血漿-含有高含量之多株病原體特異性抗體。此等抗體可向接受者賦予被動免疫

- 選自表6之任何治療劑，且較佳阿巴西普、阿非莫單抗、血管緊張素II、地塞米松、伊馬替尼、免疫球蛋白、英利昔單抗、尼達尼布、利妥昔單抗或優立替尼。

【0145】 經鑑別具有免疫過度反應之預後之個體：

- 可針對過度發炎治療

-可在密切觀測下給與特殊化治療

- 可用藥劑處理以降低病毒負荷

- 可給與免疫調節劑

- 可給與疫苗

- 可給與預防性治療

- 可給與預防或治療敗血症之治療劑。

【0146】

其他療法實施例

本發明提供預防或治療本文所提及之任何病狀或類型之免疫反應的個體療法，該個體諸如本文所提及之任何類型之個體(包括由風險因素、疾病、易感性或本文所提及之任何其他特徵定義)。個體可已鑑別為易患

本文所提及之任何類型之免疫反應。較佳地，本發明提供視情況在已鑑別為易患此等類型免疫反應之個體中預防或治療免疫過度反應或免疫副作用之療法。個體可給與本文所提及之任何療法，包括表6中所列之藥劑中之任一者。

【0147】 本發明提供一種選自表6中所示藥劑中之任一者的治療劑，其用於治療免疫過度反應或免疫副作用之方法中，該方法包含：

- 藉由本發明之方法鑑別個體是否易患免疫過度反應或免疫副作用，及

- 向鑑別為易患免疫過度反應或免疫副作用之任何個體投與該藥劑。

【0148】 本發明提供一種治療方法，其包含藉由本發明之方法鑑別個體是否易患免疫過度反應或免疫副作用且向鑑別為易患免疫過度反應或免疫副作用之任何個體投與表6中所列之任何藥劑。

【0149】 來自表6之較佳藥劑包括阿巴西普、阿非莫單抗、血管緊張素II、地塞米松、伊馬替尼、免疫球蛋白、英利昔單抗、尼達尼布、利妥昔單抗及優立替尼。

【0150】 本發明提供一種藥劑，其：

- 控制或調節免疫系統；或

- 其預防或治療異常免疫反應；或

- 預防或治療免疫反應之過度反應；

其用於治療免疫健康已根據本發明之方法確定之個體。

【0151】

個人化療法

本發明提供不同類型之個人化治療。在一個態樣中，基於本發明方

法之結果，亦即基於偵測一或多種特定染色體交互作用之存在或不存在，給與或不給與個體療法。本發明之方法在此意義上通常允許基於個體之預後或對療法之反應來選擇療法。

【0152】 在一個態樣中，本發明提供一種治療個體之方法，其包含：

(i)偵測一或多種由表1或表3中所示之探針表示之染色體交互作用之存在或不存在；

(ii)向該個體投與治療劑，該治療劑係基於個體中之該等染色體交互作用之存在或不存在而選擇。

【0153】 在一個態樣中，選擇靶向特定基因或基因產物(例如所表現之蛋白質)之治療劑，其中該基因為與染色體交互作用相關或染色體交互作用存在於其內之基因。

【0154】 在本發明之個人化療法態樣中，可例如在任何表中對本文所提及之任何特定染色體交互作用進行分型。可對本文所揭示之任何數目或交互作用組合進行分型。

【0155】 表7之標記物中之一或多者可用於本發明之此等態樣中，例如表3、4、5種或所有表7之標記物。表8、9、10、11、12、13、14、15、16或17之標記物中之其他一或多者可用於本發明之此等態樣中，包括來自如本文所揭示之此等表中之任一者的特定數目或組合或標記物。

【0156】

治療劑之篩選

本發明提供一種篩選候選藥劑(例如化合物)以確定其是否可用於本文所提及之任何病狀、免疫健康概況或免疫反應(包括對免疫過度反應之易

感性)之療法的方法。

【0157】 在一個態樣中，本發明提供一種確定候選藥劑是否為免疫過度反應之治療劑的方法，其包含確定該候選藥劑是否能夠改變本文所揭示之一或多種染色體交互作用，包括本文所揭示之染色體交互作用之數目及組合，例如如表1或表3中所示之探針所表示。此方法可以確定候選藥劑是否能夠產生或破壞一或多種此類交互作用。

【0158】 在一個態樣中，本發明提供一種用於確定候選藥劑是否可用於預防或治療免疫過度反應之方法，其包含：

(i)使該候選藥劑與一或多個染色體接觸，

(ii)確定該候選藥劑是否能夠在該等染色體上產生或破壞一或多種由表1或表3中所示之探針表示之染色體交互作用

由此確定該候選藥劑是否可用於預防或治療免疫過度反應。

【0159】 表7之標記物中之一或多者可用於本發明之此等態樣中，例如表3、4、5種或所有表7之標記物。

【0160】 表7之標記物中之一或多者可用於本發明之此等態樣中，例如表3、4、5種或所有表7之標記物。表8、9、10、11、12、13、14、15、16或17之標記物中之其他一或多者可用於本發明之此等態樣中，包括來自如本文所揭示之此等表中之任一者的特定數目或組合或標記物。

【0161】

本發明核酸之特性

本發明係關於某些核酸，諸如本文中描述為在本發明之方法中使用或產生之經接合核酸。此等核酸可與本文所提及之第一核酸及第二核酸相同或具有本文所提及之第一核酸及第二核酸之特性中之任一者。本發明之

核酸通常包含各自包含來自在染色體交互作用中聚集在一起的兩個染色體區域中之一者的序列之兩個部分。通常，各部分長度為至少8、10、15、20、30或40個核苷酸，例如長度為10至40個核苷酸。較佳的核酸包含來自表中之任一者所提及之基因中之任一者的序列。通常，較佳的核酸包含表1或表3中所提及之特定探針序列；或此類序列之片段及/或同源物。

【0162】 較佳地，核酸為DNA。應理解，在提供特定序列時，本發明可視需要在特定態樣中使用互補序列。較佳地，核酸為DNA。應理解，在提供特定序列時，本發明可視需要在特定態樣中使用互補序列。

【0163】 表1或表3中所示之引子亦可如本文所提及用於本發明中。在一個態樣中，使用包含以下中之任一者之引子：表1或表3中所示之序列；或表1或表3中所示之任何序列之片段及/或同源物。

【0164】 表7之探針或引子對中之一或多者可用於本發明之此等態樣中，例如3、4、5種或所有表7之探針或引子對。在本發明之此等態樣中可使用表8、9、10、11、12、13、14、15、16或17中之任一者之探針或引子中之另外一或多者。

【0165】

篩選以鑑別相關染色體交互作用

在一個態樣中，經分型之染色體交互作用中之一或多者已藉由確定染色體交互作用與對應於群體之免疫健康子組的染色體狀態相關之方法鑑別，該方法包含使來自具有不同染色體狀態之子組的核酸之第一組與索引核酸之第二組接觸，及允許互補序列雜交，其中核酸之第一及第二組中之核酸表示包含來自在染色體交互作用中聚集在一起之兩個染色體區域之序列的接合產物，且其中核酸之第一及第二組之間的雜交模式允許確定染色

體交互作用對該子組具有特異性。

【0166】 第二組核酸序列具有作為一組索引序列之功能，且基本上為適用於鑑別子組特定序列之核酸序列之組。其可表示『背景』染色體交互作用且可以某種方式經選擇或未經選擇。其通常為所有可能的染色體交互作用之子集。

【0167】 第二組核酸可藉由任何適合方法衍生。其可計算獲得或其可基於個體中之染色體交互作用。其通常表示比第一組核酸更大的群體組。在一個特定態樣中，第二組核酸表示特定基因組中之所有可能的表觀遺傳染色體交互作用。在另一特定態樣中，第二組核酸表示較大比例之存在於本文描述之群體中的所有可能的表觀遺傳染色體交互作用。在一個特定態樣中，第二組核酸表示至少50%或至少80%之至少20、50、100或500個基因，例如20至100或50至500個基因中的表觀遺傳染色體交互作用。

【0168】 第二組核酸通常表示至少100種改變、調節或以任何方式介導群體中之免疫健康的可能的表觀遺傳染色體交互作用。第二組核酸可表示影響免疫健康(通常地與診斷或預後有關)的染色體交互作用。第二組核酸通常包含表示與免疫健康子組有關及無關的表觀遺傳交互作用的序列。

【0169】 在一個特定態樣中，第二組核酸至少部分地來源於群體中之天然存在之序列，且通常藉由電腦模擬方法獲得。相較於存在於天然存在之核酸中之核酸的對應部分，該等核酸可進一步包含單一或多個突變。突變包括一或多個核苷酸鹼基對之缺失、取代及/或添加。在一個特定態樣中，第二組核酸可包含表示與存在於天然存在之物種中之核酸的對應部

分具有至少70%序列同一性之同源物及/或直系同源物的序列。在另一特定態樣中，提供與存在於天然存在之物種中之核酸的對應部分具有至少80%序列同一性或至少90%序列同一性。

【0170】

第二組核酸之特性

在一個特定態樣中，在第二組核酸中存在至少100種不同的核酸序列，較佳至少1000、2000或5000種不同的核酸序列，至多100,000、1,000,000或10,000,000種不同的核酸序列。典型數目將為100至1,000,000，諸如1,000至100,000種不同的核酸序列。所有或至少90%或至少50%或此等將對應於不同的染色體交互作用。

【0171】 在一個特定態樣中，第二組核酸表示至少20種不同的基因座或基因，較佳至少40種不同的基因座或基因，且更佳至少100、至少500、至少1000或至少5000種不同的基因座或基因，諸如100至10,000種不同的基因座或基因中之染色體交互作用。第二組核酸之長度對於其適合於根據華特生-克里克鹼基配對與第一組核酸特異性地雜交，以允許鑑別對子組具有特異性之染色體交互作用。通常地，第二組核酸將包含在序列中對應於在染色體交互作用中聚集在一起的兩個染色體區域的兩個部分。第二組核酸通常包含長度為至少10、較佳20且仍較佳30個鹼基(核苷酸)之核酸序列。在另一態樣中，核酸序列長度可為至多500、較佳至多100且仍較佳至多50個鹼基對。在一較佳態樣中，第二組核酸包含17與25個鹼基對之間的核酸序列。在一個態樣中，至少100%、80%或50%之第二組核酸序列具有如上文所描述之長度。較佳地，不同核酸不具有任何重疊序列，例如至少100%、90%、80%或50%之核酸在至少5個連續核苷酸上不

具有相同序列。

【0172】 鑒於第二組核酸充當『索引』，則相同組之第二核酸可與表示不同特徵之子組的不同組之第一核酸一起使用，亦即第二組核酸可表示可用於鑑別與不同特徵有關之染色體交互作用之核酸的『通用』集合。

【0173】

第一組核酸(篩選相關染色體交互作用)

第一組核酸通常來自與免疫健康有關之子組。第一核酸可具有本文所提及之第二組核酸之特徵及特性中之任一者。第一組核酸通常來源於來自如本文所描述進行治療及處理，特定言之EpiSwitch™交聯及裂解步驟之個體的樣品。通常，第一組核酸表示所有或至少80%或50%的存在於自個體獲得之樣品中之染色體交互作用。

【0174】 通常，與由第二組核酸表示之染色體交互作用相比，第一組核酸表示由第二組核酸表示之基因座或基因中之染色體交互作用的群體更小，亦即第二組核酸表示經界定組基因座或基因中之交互作用之背景或索引組。

【0175】

核酸庫

本文所提及之核酸群體之類型中之任一者可以包含至少200、至少500、至少1000、至少5000或至少10000種該類型之不同核酸(諸如『第一』或『第二』核酸)之庫形式存在。此庫可呈結合於陣列之形式。庫可包含本文中之任何表中所示的探針或引子對中之一些或全部。庫可包含來自本文所揭示之表中之任一者的所有探針序列。

【0176】

雜交

本發明通常需要允許完全或部分互補核酸序列雜交，例如在本發明之方法中或在第一組核酸與第二組核酸之間雜交之構件。在一個態樣中，使所有第一組核酸在單一分析中，亦即在單一雜交步驟中與所有第二組核酸接觸。然而，可使用任何適合的分析。

【0177】

經標記核酸及雜交模式

本文所提及之核酸可較佳使用有助於偵測成功雜交之獨立標記(諸如螢光團(螢光分子)或放射性標記)來標記。某些標記可在UV光下偵測。例如在本文所描述之陣列上的雜交模式表示兩個子組之間的表觀遺傳染色體交互作用之差異，且因此提供一種比較表觀遺傳染色體交互作用且確定哪些表觀遺傳染色體交互作用對本發明之群體中之子組具有特異性的方法。

【0178】 術語『雜交模式』廣泛地涵蓋第一組核酸與第二組核酸之間的雜交之存在及不存在，亦即哪些來自第一組之特定核酸與哪些來自第二組之特定核酸雜交，且因此其不限於任何特定分析或技術，或需要具有其上可偵測到『模式』之表面或陣列。

【0179】

本文所提及之物質之形式

本文所提及之物質中之任一者(諸如核酸或治療劑)可呈純化或分離形式。其可呈不同於自然界中所發現之形式，例如其可以與自然界中不存在之其他物質之組合存在。核酸(包括本文所定義之序列之部分)可具有不同於自然界中所發現之彼等核酸的序列，例如在如關於同源性之章節中所描述之序列中具有至少1、2、3、4種或更多種核苷酸變化。核酸可在5'或3'

端處具有異源序列。核酸可化學上不同於自然界中所發現之彼等核酸，例如其可以某種方式經修飾，但較佳地仍能夠進行華特生-克里克鹼基配對。適當時，核酸將以雙股或單股形式提供。本發明以單股或雙股形式提供本文所提及之所有特定核酸序列，且因此包括與所揭示之任何序列互補的股。

【0180】 本發明提供一種用於實行本發明之任何方法，包括偵測與預後相關之染色體交互作用的套組。此類套組可包括能夠偵測相關染色體交互作用之特異性結合藥劑，諸如能夠偵測由本發明之方法產生之經接合核酸的藥劑。存在於套組中之較佳藥劑包括能夠與經接合核酸或引子對雜交的探針，例如如本文所描述，能夠在PCR反應中擴增經接合核酸。

【0181】 本發明提供一種能夠偵測相關染色體交互作用之裝置。裝置較佳包含能夠偵測染色體交互作用之任何特異性結合藥劑、探針或引子對，諸如本文描述之任何此類藥劑、探針或引子對。

【0182】

偵測方法

在一個態樣中，使用在PCR反應期間活化時可偵測之探針進行與染色體交互作用相關之經接合序列之定量偵測，其中該經接合序列包含來自在表觀遺傳染色體交互作用中聚集在一起之兩個染色體區域的序列，其中該方法包含使經接合序列與探針在PCR反應期間接觸，且偵測活化探針之程度，且其中該探針結合接合位點。方法通常允許使用雙重標記之螢光水解探針以MIQE適應方式偵測特定交互作用。

【0183】 探針通常用具有失活及活化狀態之可偵測標記來標記，使得其僅在活化時偵測到。活化程度將與PCR反應中存在之模板(接合產物)

之程度相關。偵測可在所有或一些PCR期間進行，例如至少50%或80%之PCR循環。

【0184】 探針可包含共價附接至寡核苷酸之一端的螢光團及附接至核苷酸之另一端的淬滅劑，使得螢光團之螢光係由淬滅劑淬滅。在一個態樣中，螢光團附接至寡核苷酸之5'端，且淬滅劑共價附接至寡核苷酸之3'端。可在本發明之方法中使用之螢光團包括FAM、TET、JOE、雅基馬黃(Yakima Yellow)、HEX、花青3、ATTO 550、TAMRA、ROX、德克薩斯紅(Texas Red)、花青(Cyanine) 3.5、LC610、LC 640、ATTO 647N、花青5、花青5.5及ATTO 680。可與適當螢光團一起使用之淬滅劑包括TAM、BHQ1、DAB、Eclip、BHQ2及BBQ650，視情況其中該螢光團係選自HEX、德克薩斯紅及FAM。螢光團與淬滅劑之較佳組合包括FAM與BHQ1及德克薩斯紅與BHQ2。

【0185】

在qPCR分析中使用探針

本發明之水解探針通常用濃度匹配之陰性對照進行溫度梯度最佳化。較佳地，單步驟PCR反應經優化。更佳地，計算標準曲線。使用在經接合序列之接合點上結合之特定探針之優點為可在不使用巢式PCR方案之情況下獲得對經接合序列之特異性。本文所描述之方法允許準確及精確定量低複本數目標。標靶經接合序列可在溫度梯度最佳化之前經純化，例如經凝膠純化。標靶經接合序列可經定序。較佳地，使用約10 ng、或5至15 ng、或10至20 ng、或10至50 ng、或10至200 ng模板DNA進行PCR反應。正向及反向引子經設計以使得一種引子結合至經接合DNA序列中所表示之染色體區域中之一者的序列，且其他引子結合至經接合DNA序列中所

表示之其他染色體區域，例如藉由與序列互補。

【0186】 經接合核酸之偵測可使用任何表中之本文所揭示之任何探針及/或引子對。在一個態樣中，使用qPCR系統以用於此類探針及引子對之同源物，該qPCR系統使用表7中所揭示之探針及引子對。較佳地，表7之使用『修飾Seq』欄中所示之探針與所示類型之淬滅劑及報導子一起使用。

【0187】

經接合DNA標靶之選擇

本發明包括選擇用於如本文所定義之PCR方法中之引子及探針，包含基於其結合及擴增經接合序列之能力選擇引子且基於其所結合之標靶序列之特性，特定言之標靶序列之曲率選擇探針序列。

【0188】 探針通常經設計/選擇以結合至跨越限制位點並接限制片段之經接合序列。在本發明之一個態樣中，例如使用本文所提及之特定演算法計算與特定染色體交互作用相關之可能的經接合序列之所預測曲率。曲率可表示為每螺旋轉角之度數，例如每螺旋轉角10.5°。選擇經接合序列以進行靶向，其中經接合序列具有每螺旋轉角至少5°，通常每螺旋轉角至少10°、15°或20°，例如每螺旋轉角5°至20°之曲率傾向峰值得分。較佳地，計算至少20、50、100、200或400個鹼基，諸如接合位點之上游及/或下游20至400個鹼基之每螺旋轉角的曲率傾向得分。因此，在一個態樣中，接合產物中之標靶序列具有此等曲率水準中之任一者。亦可基於最低熱力學結構自由能選擇標靶序列。

【0189】

特定態樣

在一個態樣中，僅分類/偵測到染色體內交互作用，且未分類/偵測到染色體外交互作用(在不同染色體之間)。

【0190】 在特定態樣中，不對某些染色體交互作用進行分型，例如本文所提及之任何特定交互作用(例如，如由本文所提及之任何探針或引子對所定義)。在一些態樣中，染色體交互作用不在與本文所提及之染色體交互作用相關的基因中之任一者中進行分型。

【0191】 本文所提供之資料展示標記物為能夠針對免疫健康區分不同子組之『播散』標記。因此，當實行本發明時，熟習此項技術者將能夠藉由偵測個體所在子組之交互作用進行測定。在一個實施例中，偵測至少70%呈與相關疾病子組相關之形式(藉由不存在或存在)之經測試標記物的臨限值可用於確定個體是否在相關子組中。

【0192】

篩分法

本發明提供一種測定哪些染色體交互作用與對應於免疫健康子組之染色體狀態相關的方法，其包含使具有不同染色體狀態之來自子組之第一組核酸與第二組索引核酸接觸，且允許互補序列雜交，其中第一組核酸及第二組核酸中之核酸表示接合產物，該接合產物包含來自在染色體交互作用中聚集在一起之兩個染色體區域的序列，且其中第一組核酸與第二組核酸之間的雜交模式允許測定哪些染色體交互作用對預後子組具有特異性。子組可為本文所定義之特定子組中之任一者，例如參照特定類型之免疫反應。

【0193】

公開及優先申請案中之揭示內容

本文所提及之所有公開案之內容均以引用之方式併入本說明書中且可用於進一步定義與本發明相關之特徵。所有優先申請案之內容均併入本說明書中且可用以定義與本發明相關之特徵。

【0194】

用於鑑別特定相關染色體交互作用之技術

EpiSwitch™平台技術偵測基因座處正常病狀與異常病狀之間的調節變化之表觀遺傳調節標籤。EpiSwitch™平台鑑別且監測與亦稱為染色體構形標籤之人類染色體之調節高階結構相關的基因調節之基本表觀遺傳水準。染色體標籤為基因失調級聯中之不同初始步驟。其為具有針對利用晚期表觀遺傳及基因表現生物標記物(諸如DNA甲基化及RNA圖譜分析)之生物標記物平台的一組特有優點的高階生物標記物。

【0195】

EpiSwitch™陣列分析

定製EpiSwitch™陣列-篩選平台具有4種密度(15K、45K、100K及250K)的特有染色體構形，各嵌合片段在陣列上重複4次，從而使得有效密度分別為60K、180K、400K及100萬。

【0196】

定製設計之EpiSwitch™陣列

15K EpiSwitch™陣列可篩選用EpiSwitch™生物標記物發現技術詢問的包括大約300個基因座之全部基因體。將EpiSwitch™陣列建構在Agilent SurePrint G3 Custom CGH微陣列平台上；此技術提供4種密度(60K、180K、400K及100萬)之探針。在各EpiSwitch™探針重複四次呈現時，將每陣列之密度降低至15K、45K、100K及250K，因此允許可再

生性之統計評估。每基因基因座詢問之潛在EpiSwitch™標記物之平均數目為50；因此可研究之基因座之數目為300、900、2000及5000。

【0197】

EpiSwitch™定製陣列流水線

EpiSwitch™陣列為雙色系統，其中在EpiSwitch™庫產生之後，一組樣品在Cy5中標記，且待比較/分析之其他樣品(對照)在Cy3中標記。使用Agilent SureScan掃描儀掃描陣列且使用Agilent特徵提取軟體提取所得特徵。隨後使用EpiSwitch™陣列處理腳本在R中處理資料。使用標準雙色套裝軟體在Bioconductor中在R:Limma*中處理陣列。使用Limma*中之normalisedWithinArrays函式進行陣列之標準化且此針對晶片上Agilent陽性對照及EpiSwitch™陽性對照進行。基於Agilent Flag調用過濾資料，將Agilent對照探針移除且將技術複製探針平均化，以便使用Limma*對其進行分析。探針係基於探針在所比較之2種情境之間的差異建模且隨後藉由使用假發現率進行校正。<=-1.1或=>1.1且通過p<=0.1 FDR p值的變化係數(CV)<=30%之探針係用於進一步篩選。為減少探針設置，使用FactorMineR套裝軟體在R中進行另外多個因數分析。

【0198】 *應注意：LIMMA為用於評定微陣列實驗中之差異性表現之線性模型及實驗貝氏方法(Linear Models and Empirical Bayes Processes)。Limma為用於分析由微陣列或RNA-Seq產生之基因表現資料的R套裝軟體。

【0199】 針對最終挑選，最初基於經調整p值、FC及CV<30% (任意截止點)參數選擇探針池。僅基於前兩個參數(adj. p-value；FC)抽取另外的分析及最終清單。

【0200】

統計流水線

使用EpiSwitch™分析套裝軟體在R中處理EpiSwitch™篩選陣列，以便選擇高值EpiSwitch™標記物以供轉譯至EpiSwitch™ PCR平台上。

【0201】

步驟1

基於其經校正p值(假發現率，FDR)選擇探針，其為經修改線性回歸模型之產物。選擇p值<=0.1以下的探針且隨後藉由其表觀遺傳比率(ER)進一步降低，探針ER必須為<=-1.1或=>1.1，以便經選擇以用於進一步分析。最後濾波為變化係數(CV)，探針必須在<=0.3以下。

【0202】

步驟2

基於其ER選擇來自統計列表之前40種標記物，以供選擇作為用於PCR轉譯之標記物。具有最高負ER負載之前20種標記物及具有最高正ER負載之前20種標記物形成清單。

【0203】

步驟3

來自步驟1之所得標記物(統計學上顯著之探針)形成使用超幾何富集(HE)進行富集分析之基礎。此分析使得能夠自顯著探針清單減少標記物，以及來自步驟2之標記物形成轉譯至EpiSwitch™ PCR平台上的探針之清單。

【0204】 統計探針係由HE處理以測定哪些基因位置具有統計學上顯著之探針之富集，從而指示哪些基因位置為表觀遺傳差異之中心。

【0205】 選擇基於校正p值之最顯著富集基因座以用於探針清單產生。選擇p值為0.3或0.2以下之基因位置。映射至此等基因位置之統計探針與來自步驟2之標記物一起形成用於EpiSwitch™ PCR轉譯之高值標記物。

【0206】

陣列設計及處理

陣列設計

使用SII軟體(當前v3.2)處理基因基因座以：

- 撤離此等特定基因基因座處的基因體之序列(上游50kb及下游20kb之基因序列)

- 界定此區域內之序列參與CC之機率

- 使用特定RE切割序列

- 確定哪些限制片段有可能在某些定向中交互作用

- 將一起交互作用之不同CC之可能性進行分級

- 確定陣列大小且因此確定可利用的探針位置之數目(x)

- 撤離x/4交互作用。

- 對於各交互作用，界定至部分1之限制位點30bp及部分2之限制位點30bp的序列。檢查彼等區域不重複，若如此排除且在清單上進行下一交互作用。接合兩30 bp以定義探針。

- 產生x/4探針加經界定對照探針之清單且重複4次以產生待在陣列上產生之清單

- 將探針清單上傳至Agilent Sure設計網站上以用於定製CGH陣列。

- 使用探針群組來設計Agilent定製CGH陣列。

【0207】

陣列處理

- 使用EpiSwitch™標準操作程序(SOP)處理樣品以進行模板生產。

- 藉由陣列處理實驗室用乙醇沈澱淨化。

- 根據Agilent SureTag完整DNA標記套組(用於血液、細胞或組織的基因體DNA分析酶促標記的基於Agilent寡核苷酸陣列之CGH)處理樣品

- 使用Agilent C掃描儀使用Agilent特徵提取軟體進行掃描。

【0208】 *EpiSwitch*™生物標記物標籤證實複雜疾病表型分層中之高穩定性、敏感性及特異性。此技術利用表觀遺傳學科學中之最新突破，監測及且評估染色體構形標籤作為表觀遺傳生物標記物之高度資訊性類別。理論環境中採用的當前研究方法需要3至7天來進行細胞材料之生物化學處理以便偵測CCS。彼等程序具有有限的敏感性及可再生性；且另外，不具有在設計階段由*EpiSwitch*™分析套裝軟體提供之針對性見解的益處。

【0209】

EpiSwitch™陣列電腦模擬標記物鑑別

藉由EpiSwitch™陣列針對來自測試群組之臨床樣品直接評估基因體上之CCS位點，以鑑別所有相關分層導引生物標記物。EpiSwitch™陣列平台由於其高通量能力及其快速地篩選大量基因座之能力而用於標記物鑑別。所使用之陣列為Agilent定製CGH陣列，其允許詢問經由電腦模擬軟體鑑別之標記物。

【0210】

EpiSwitch™ PCR

隨後藉由*EpiSwitch™ PCR*或DNA定序器(亦即Roche 454、Nanopore MinION等)驗證由*EpiSwitch™陣列*鑑別之潛在標記物。選擇統計學上顯著且顯示最佳可再生性之居首位的PCR以用於進一步降低至最終*EpiSwitch™*標籤設置，且針對單獨樣品群組進行驗證。可在所確定之標準化操作程序方案之後由經訓練之技術員進行*EpiSwitch™ PCR*。所有方案及試劑之製造係在ISO 13485及9001評審下進行，以確保產品質量及轉移方案之能力。*EpiSwitch™ PCR*及*EpiSwitch™陣列*生物標記物平台與對全血及細胞株兩者之分析相容。測試足夠靈敏以使用小體積之血液偵測極低複本數中之異常。

【0211】

使用分類器

本發明之方法可包括分析個體中所鑑別之染色體交互作用，例如使用分類器，其可增加效能，諸如靈敏度或特異性。分類器通常為已在來自群體之樣品上『訓練』之分類器，且此類訓練可輔助分類器偵測本文所提及之任何免疫健康概況或易感性，包括對本文所提及之任何類型之免疫反應的易感性。

【0212】藉由以下說明本發明：

實例

使用EpiSwitch™平台之免疫健康相關及感染Sars-Covid-2病毒作為模型免疫疾病之染色體交互作用標記物的鑑別

概述

基於前免疫遺傳標記物且亦基於『純統計』鑑別染色體交互作用標記物，包括具有針對重要臨床觀測，諸如血鈣過高(圍繞Ca穩態破壞之標

記物、鈣調蛋白、鈣調神經磷酸酶等)之其他生物連接。

【0213】 預後分層係基於Covid陽性測試之後不久，在無症狀個體或恰好住院的人的血液收集。分級係基於輕度Covid疾病之結果，其自身表現於住院患者中，該等住院患者住院且對治療起反應；及重度Covid疾病，吾人將患者與轉移至加護病房(ICU)關聯。重度患者對醫院字可獲得之治療不起反應(額外氧、消炎劑等)且對ICU緊急支持惡化。當暴露於Covid感染時，分層提供個體之免疫健康及過度發炎之預後。

【0214】 標記物資料係基於80名來自UK、USA及Peru群組之混合物的患者，表示無症狀、輕度及ICU嚴重病例。42個樣品來自Lima, Peru，在Lima為Covid-19之併發症及死亡之最高數目的世界熱點(對比US-每100,000中有71死亡；巴西-每100,000中有76死亡，Peru具有最高的人均死亡率-每100,000中有107死亡)時間收集。來自UK存在11個樣品且來自US存在19個樣品。

【0215】

Covid-19作為疾病模型用於研究免疫過度反應

Covid-19併發症之大部分死亡在具有各種健康併發症及共生病症之背景的個體中。Covid-19併發症中之過度發炎已鑑別為關鍵促成因素且潛在健康病狀對免疫健康概況具有直接及間接影響。

【0216】

實驗工作

全血樣品係取自經確認COVID-19疾病(SARS-CoV-2感染症狀)住院之患者且分成兩種定義：嚴重結果及輕度結果。嚴重結果定義包括住院且在ICU護理中需要更具主動干預之患者，或其中除了合併症之外，亦提供

此干預。住院僅接受氧氣治療及/或對病房之更少創傷性干預(不進入ICU)之患者定義為輕度。

【0217】 最初利用EpiSwitch™微陣列平台來詢問具有已知臨床結果之患者樣品以獲得生物洞察且鑑別可在嚴重患者樣品與輕度患者樣品之間界定的一組潛在標記物。目的為鑑別最具統計顯著性及生物學上相關之標記物。此研究在整個基因體陣列上進行，其中超過900,000個所選錨定位點係針對圖12中之LDA分析中所呈現的80名患者中之每一者詢問，全部降低至線性評分。

【0218】 頂部EpiSwitch™標記物經歷引子設計以鑑別可成功地在實驗室中藉由巢式PCR (nPCR)詢問之交互作用。選擇來自成功設計之交互作用之清單的頂部標記物且用於將微陣列標記物轉譯為nPCR標記物，不過在完整樣品群組上篩選前150個標記物。

【0219】 該操作具有三個主要目的：調查全血樣品中之Covid-19，鑑別頂部微陣列交互作用且將其轉譯為nPCR，且為基於全血之EpiSwitch™ nPCR產物提供Covid-19嚴重程度之概念驗證。

【0220】 全血及PBMC常常含有不同的細胞群體，其中在密度梯度處理期間會損失全血中所發現之大量粒細胞(嗜鹼性球、嗜中性球及嗜酸性球)純化來自全血之PBMC部分(參見圖2)。在解釋結果時必須牢記此情形。研究設計展示於圖3中。

【0221】 42名患者入選此部分之操作中。自各個體獲取靜脈血液樣品。獲取5 ml或更大體積之全血用於EpiSwitch™生物化學處理。

【0222】

納入準則

個體必須在入院72小時內登記

【0223】 將個體招募至以下兩組中：

- 嚴重情況：ICU及/或機械換氣中24名患者

- 輕度COVID-19：在ICU中且亦未進行機械換氣，而僅住院(其可經由鼻插管接受補充氧)之18名患者。

【0224】 將全血樣品收集於EDTA K3血液收集管中。伴隨樣品之臨床註釋由以下組成：

- 人口資料

- 旅行史

- 症狀

- 症狀發作之日期

- 預先存在之醫學病狀

- SARS-CoV-2 RT-PCR結果

- 樣本收集日期

- 其他SOC呼吸診斷結果(若可獲得)

- 住院日期

- 進入ICU之日期(若可行)

- 關於機械換氣之使用及使用持續時間之資訊

- 關於補充氧及使用持續時間之資訊

【0225】 在血液取樣之後，將EDTA管倒置以將樣品與塗佈於管表面上之EDTA混合以避免結塊。樣品在-20℃或更低溫度下儲存，理想地在收集60分鐘內。

【0226】

EpiSwitch庫製備

42個所取樣品係使用EpiSwitch™萃取方案處理。用Picogreen及Nanoquant定量所製備庫(分別dsDNA及全部核酸量測結果)。在-80℃下儲存直至用於後續步驟之前，使用標準OBD nPCR陽性對照分析品質控制所製備之EpiSwitch™庫中之每一者。

【0227】 在產生所需體積之EpiSwitch庫用於微陣列處理之後，繼續萃取以產生用於nPCR轉譯之所需庫體積。

【0228】

微陣列處理

使用單頻道分析利用EpiSwitch™完全基因體中等密度編碼蛋白質聚焦陣列。陣列由973,335個EpiSwitch™探針及2500個EpiSwitch™對照探針組成。設計聚焦於基因體中之蛋白質編碼及長非編碼RNA基因座(GRCh38)周圍。

【0229】 處理42個EpiSwitch™庫中之每一者且僅使用Cy3染料標記單一通道微陣列。將各經處理之庫雜交至單獨微陣列。使用由四個外部DNA片段組成之在線對照混合液來提供品質控制及定量。

【0230】

微陣列分析

分析EpiSwitch微陣列資料以鑑別兩種不同疾病表型病狀之間的差異偵測之交互作用。在統計分析及生物分析中鑑別頂部標記物之後，針對各推定標記物設計nPCR引子組合。僅將具有所設計引子組合之標記物轉譯成nPCR分析。最初使用元基因體引子設計之預設參數來設計標記物之最佳引子組合，隨後視需要升高或降低參數臨限值。

【0231】

EpiSwitch™發現巢式PCR轉譯

對於自微陣列及引子設計鑑別之前150個標記物，對實體引子進行排序以允許篩選可區分嚴重疾病表型與輕度疾病表型之nPCR分析。全部42個樣品組用於nPCR轉譯。將各患者庫相對1 ng/μl dsDNA濃度進行標準化，且產生由1×、1:2×及1:4×組成之連續稀釋液用於分析篩選。

【0232】 端點nPCR產物使用5K晶片及試劑選項在LabChip GX Touch高通量毛細管電泳機器上運行。包括陰性人類基因體對照之適當對照用於各分析以確保所偵測之產物為實際染色體構形捕獲產物且不為高複本數基因體DNA之非特異性結合。NTC用於偵測試劑之任何交叉污染。

【0233】

EpiSwitch™發現巢式PCR分析

用多種統計技術分析EpiSwitch巢式PCR平台資料輸出，該等統計技術包括(但不限於)：Fishers精準檢定、GLMNET (邏輯回歸模型)及貝氏邏輯回歸模型(Bayesian logistic regression)。關於EpiSwitch™分類器之開發，使用以下統計分析：

- XGBoost梯度提昇決策樹演算法。產生弱決策樹模型之總體，且組合弱決策樹模型以產生一個強分類模型。

- 邏輯主成分分析經最佳化以使用二元資料。

- GLMNET。經由懲罰最大似然擬合之廣義線性模型。

【0234】

結果及治療併發症

上述操作中所鑑別之標記物展示於表1至4中，且圖式展示額外資料

及結果。獨立的nPCR及qPCR標記物組經並行開發，如表中所示。自陣列選擇qPCR標記物(當與nPCR相比時)依賴於針對高豐度之額外過濾器。在表中，若標記物因為其基因體位置與免疫基因基因座(免疫對照之基因標記物)重疊，則標記為「免疫」，且若標記物與心臟血管基因標記物一致，則標記為「心臟」。

【0235】 基於所鑑別之標記物之預後測試為在暴露於Covid-19感染下之免疫健康及免疫能力之量測。高風險組(具有嚴重疾病之預後)可能產生過度發炎且展示對標準護理治療之不良反應，向醫師警示緊密觀測下之特定治療之必要性：病毒負荷減少及免疫調節劑引入。此外，在疫苗使用及分佈之情形下，測試鑑別應經受疫苗接種之高風險組。同時，在一般工作群體中，其可幫助鑑別用於進一步防治性治療、保護及檢疫隔離之高風險組，儘管低風險組可在返回工作中得以支援。

【0236】

鑑別基因路徑

染色體交互作用標記物對應於調節網路。吾等分析查看標記物如何對應於生物路徑。吾等獲得展示顯著EpiSwitch 3D基因體標記物與表示特定路徑之基因座之相對重疊的統計得分。該得分愈高，來自該路徑之愈多基因與基因體架構中失調之位點共定位。此展示與個別基因不同的路徑在3D基因體學展示程度上之生物學相關性。經鑑別之路徑展示標記物與超出疾病之Covid-19模型之免疫健康(全身性免疫能力)有多大關係。

【0237】 受3D失調影響之基因位置處之頂部路徑包括：

- 先天性免疫系統
- 類鐸(Toll-like)受體信號傳導路徑

- ERK信號傳導
- TGF-β信號傳導路徑(WikiPathways)
- 免疫系統中之細胞介素信號傳導
- TCR信號傳導(REACTOME)
- Th17細胞分化
- I類MHC介導抗原處理及呈現
- 細胞凋亡路徑
- 類風濕性關節炎
- 免疫反應中之免疫反應NFAT
- T輔助細胞中之ICos-ICosL路徑
- 藉由GPCR信號傳導
- 同種異體移植排斥反應
- 藉由STAT4介導之IL12信號傳導
- T淋巴球中之MEF2之免疫反應功能
- CXCR4介導之信號傳導事件
- 滑膜纖維母細胞中之凋亡路徑
- GPCR路徑。

【0238】 圖20展示進行之標準STRING網路分析，且表5展示與EpiSwitch標記物相關之網路中的關鍵基因之名稱。

【0239】

經鑑別之療法

使用受影響基因組及與對嚴重疾病組具有特異性之EpiSwitch標記物相關之基因組鑑別治療化合物。表6展示化合物之清單，且圖21描述如何

解釋此表。

【0240】

結論

本工作明確地指示當嚴重/ICU(關鍵護理單元)達到利用EpiSwitch標記物(亦即染色體交互作用標記物)之3D基因體概況時，其係來自輕度或無症狀患者之單獨表型。此外，此預測上預先可見。所鑑別之標記物很大程度上定位於負責免疫之基因周圍。實際上此意謂，經由基因體之免疫基因部分的3D基因體學，個體中存在免疫健康傾向。此傾向性意謂若某些個體暴露於Covid-19感染，則其將由於其免疫反應之性質而惡化且將不對標準治療作出反應(因此其移至ICU)。其經歷過度發炎，通常靶向特定器官。

【0241】 吾等對Covid-19疾病系統之研究允許吾等鑑別在染色體結構之水準下之免疫反應之機制及其如何與相關路徑交互作用。此允許確定個體之免疫健康及預測免疫反應在不同疾病情況下如何反應。

【0242】

與表7之標記物相關之進一步工作

自陣列選擇標記物

將資料載入並使用R Limma套裝軟體將資料標準化，首先移除Agilent對照探針，下一步驟係不包括高於系統65、525之飽和點的任何探針，此係由於掃描儀之偵測範圍。接下來兩個步驟係關於資料之標準化，首先存在背景校正，隨後使用分位數方法來執行陣列之間的標準化，此標準化陣列上及陣列之間的探針，此等步驟皆最小化非生物變化。

【0243】 在標準化之後直接移除對照中之正值及峰值，隨後進行統

計分析。採用兩個統計程序進行統計分析、使用LIMMA套裝軟體之線性模型化及使用BigRankProduct套裝軟體之秩積分析。線性分析為參數方法及秩積非參數方法。為了使探針在統計學上顯著，對於經調節之p值，其必須低於<=0.05。比較來自兩個方法之統計清單，且藉由兩個步驟進一步限制該兩個方法之聯合。經組合統計清單上之下一個過濾器為豐度，探針必須為豐度量表中之1.2<=或=>1.2。此清單隨後藉由考慮樣品之標準化強度而進一步過濾以供轉譯至qPCR，所有樣品必須為以強度單位高於=>1000或以log2標度=>9.66。一旦應用此等過濾器，資料藉由探針豐度值(對於正整數遞減，且對於負整數遞增)排序，來自正及負選擇之前120-200個標記物形成用於轉譯至qPCR平台之標記物清單。

【0244】

最終C19模型

最終二元結果COVID-19模型已使用WHO分類建構，其中若患者已換氣，則確定嚴重程度(參見下文)。

群組劃分之ASTERIX嚴重程度組							
		SARS-COV-2 PCR+	COVID肺炎	住院	嚴重反應失效(≥步驟6，亦即Max O2%≥60%或CPAP)	需要換氣之關鍵呼吸衰竭	死亡
1	輕度	是	不需要但在是情況下報告	否	否	否	否
2	中度	是	不需要但在是情況下報告	是	否	否	否
3	嚴重	是	不需要但在是情況下報告	是	是	否	否
4	極嚴重	是	不需要但在是情況下報告	是	不需要但在是情況下報告	是	否
5	致死	是	不需要但在是情況下報告	不需要但在是情況下報告	不需要但在是情況下報告	不需要但在是情況下報告	是

			↓		↓	↓
			此對應於方案/SAP中之臨床進展模型1		此對應於方案/SAP中之臨床進展模型2	此對應於方案/SAP中之臨床進展模型3

【0245】 高風險患者(極嚴重，有換氣)為需要換氣之患者，且該等患者不需要換氣形成此分類器中之另一組，平均值-風險(無換氣)。兩種強化分類器形成CST模型、XGBoost (極端梯度強化)及CatBoost (對決策樹之梯度強化)之基礎，組合來自此等模型之機率且高危之呼叫為達成合併機率分數=>0.75之患者，平均-風險患者為合併機率分數低於<0.75之患者。

【0246】

最終組合模型數據統計

第一混淆表為訓練集與2個測試集組合。

【0247】 用於預測高風險(致命/嚴重(ICU))之統計(n=116)

準確性：92%

靈敏度：96%

特異性：86%

PPV：92%

NPV：93%

【0248】 參見下表：

混淆基質及統計

	參考	
預測	否	是
否	38	3
是	6	69

準確性： 0.9224

95% CI： (0.8578, 0.9639)

無資訊率：	0.6207
P值[Acc > NIR]：	9.843e-14
K：	0.833
Mcnemar之測試P值：	0.505
感敏度：	0.9583
特異性：	0.8636
正預測值：	0.9200
負預測值：	0.9268
發生率：	0.6207
偵測比率：	0.5948
偵測發生率：	0.6466
平衡準確性：	0.9110
「陽性」類別：	是

【0249】第二個為組合之2個測試組：28個經換氣患者(ICU(18)及非ICU(10)之混合物)及死亡之患者(11個ICU，8個非ICU，其未經換氣)。此等2組不用於模型構建中。此展示如下：

```
> cm.m_3<-confusionMatrix(as.factor(c$Ventilation),
as.factor(c$call),positive="Yes")
> cm.m_3
combined
Confusion Matrix and Statistics
          Reference
Prediction No Yes
       No  38   3
       Yes  6  69

               Accuracy : 0.9224
                 95% CI : (0.8578, 0.9639)
    No Information Rate : 0.6207
    P-Value [Acc > NIR] : 9.843e-14

                  Kappa : 0.833
```

```
McNemar's Test P-Value : 0.695

            Sensitivity : 0.8588
            Specificity : 0.8636
         Pos Pred Value : 0.9200
         Neg Pred Value : 0.7917
             Prevalence : 0.6220
         Detection Rate : 0.5342
   Detection Prevalence : 0.5806
      Balanced Accuracy : 0.8612

       'Positive' Class : Yes

測試集:
Confusion Matrix and Statistics
          Reference
Prediction No Yes
       No   9   3
       Yes  6  38

               Accuracy : 0.8085
                 95% CI : (0.6874, 0.8965)
    No Information Rate : 0.766
    P-Value [Acc > NIR] : 0.311

                  Kappa : 0.611

 Mcnemar's Test P-Value : 0.505

            Sensitivity : 0.9268
            Specificity : 0.6000
         Pos Pred Value : 0.8636
         Neg Pred Value : 0.7500
             Prevalence : 0.7660
         Detection Rate : 0.7100
   Detection Prevalence : 0.8220
      Balanced Accuracy : 0.7634

       'Positive' Class : Yes

> a <- as.factor(ifelse(Validation>="Yes",1,0))[,1]; b <- as.factor(ifelse(
  ))[,1]
[1] 1.0
```

[0250]

其他結論

就測試效率而言，qPCR型式具有許多優點，其中配對引子及探針之高效設計提供高偵測功效。

[0251] 藉由在測試中一起使用多種標記物獲得其他技術優勢。其於EpiSwitch標記物之全身性表觀遺傳讀數捕獲在反映潛在特定病理表型之細胞水準下之生物網路調節之功能設計。分析模型可基於反映個別貢獻因素之間的調節網路相互關係及同步的生物標記物組。此可與機器學習模

型組合，且可對『最佳化模型化』做出決策，包括在測試中使用多少標記物。

【0252】

敗血症操作

進一步分析標記物以鑑別與敗血症表型相關之標記物。結果提供於表12及13及圖22中。必須注意，PSMA5為已在敗血症領域以及Covid研究中鑑別為可能的治療標靶之基因。首次本發明操作直接展示在Covid及敗血症病狀兩者中之染色體構形水準處參與同一失調網路之PSMA5基因座，且提供監測敗血症及判定免疫健康經監測患者中之類似敗血症結果之預後的標記物。

編號	探針	基因	RP
1	Hg38_1_112145907_112153217_112262815_112272478_FF	WNT2B	6632.327399
2	Hg38_1_112145907_112153217_112262815_112272478_FR	WNT2B	6615.221985
3	Hg38_22_25290566_25299563_25482038_25486782_FR	LRP5L	28171.7163
4	Hg38_11_93191458_93197121_93228754_93237221_FR	MTNR1B	30854.43895
5	Hg38_12_8956666_8971971_9041253_9052225_RF	KLRG1	32830.14986
6	Hg38_17_27705007_27714184_27773460_27778067_RF	LGALS9	31710.89437
7	Hg38_17_27705007_27714184_27860380_27865714_RF	NOS2	32302.86692
8	Hg38_19_50837203_50840748_50961391_50964466_FR	KLK3	41082.56724
9	Hg38_1_27834284_27836433_28029814_28033207_FR	SMPDL3B	34252.74921
10	Hg38_10_101411213_101417434_101485766_101490138_RF	POLL	33830.59298
11	Hg38_11_93057516_93069988_93228754_93237221_RR	MTNR1B	38697.48465
12	Hg38_18_42444488_42452373_42488741_42500135_RR	PIK3C3	36961.50644
13	Hg38_1_99631771_99639876_99708395_99714403_FF	AGL	39107.43986
14	Hg38_19_34387270_34393741_34499918_34506554_FR	GPI	38265.62504
15	Hg38_3_196353836_196356776_196593741_196597691_FF	RNF168	38295.8272
16	Hg38_1_99659612_99670382_99708395_99714403_FF	AGL	38478.96973
17	Hg38_11_9685853_9690988_9710140_9716903_RF	SWAP70	39606.72308
18	Hg38_17_27705007_27714184_27875357_27879509_RF	NOS2	39888.90639
19	Hg38_5_76572657_76583168_76676513_76680170_RF	IQGAP2	42674.08273
20	Hg38_6_132703799_132711156_132757539_132761457_FF	VNN1	41891.67247
21	Hg38_4_154217720_154222054_154421614_154428471_FR	FGB	41672.67989
22	Hg38_15_98874707_98883774_99040149_99043892_FF	IGF1R	42502.98791

23	Hg38_22_25482038_25486782_25613025_25619501_RF	LRP5L	45257.16951
24	Hg38_11_93178112_93183061_93228754_93237221_FR	MTNR1B	40589.83763
25	Hg38_10_122677780_122685636_122702672_122705534_FF	DMBT1	47360.38753
26	Hg38_1_99533569_99538124_99618648_99629858_FR	AGL	45455.75237
27	Hg38_11_93198707_93202947_93228754_93237221_RR	MTNR1B	44085.15403
28	Hg38_17_27594551_27602944_27705007_27714184_FR	LGALS9	45673.11179
29	Hg38_18_42413424_42422256_42488741_42500135_RR	PIK3C3	40889.09224
30	Hg38_3_184235022_184240690_184480439_184482239_FR	EIF2B5	44523.82545
31	Hg38_11_9685853_9690988_9833988_9839719_RF	SWAP70	44637.16946
32	Hg38_3_184389484_184390857_184480439_184482239_FR	EIF2B5	46450.621
33	Hg38_17_27609054_27616846_27705007_27714184_RR	LGALS9	43991.22324
34	Hg38_7_29905017_29911792_30016613_30019069_FR	WIPF3	41863.49514
35	Hg38_8_5120591_5125403_5295149_5302540_FF	ANGPT2	46856.24945
36	Hg38_1_109341939_109348573_109359719_109366704_RR	PSMA5	48297.45591
37	Hg38_8_5115633_5120591_5295149_5302540_FF	ANGPT2	43978.91795
38	Hg38_11_9656772_9663043_9685853_9690988_FR	SWAP70	44994.92012
39	Hg38_2_223382061_223395131_223446116_223450606_FF	AP1S3	36942.13688
40	Hg38_22_34722666_34726389_34750116_34757594_RR	TOM1	35013.59465
41	Hg38_22_34696712_34700627_34750116_34757594_RR	TOM1	42265.79077
42	Hg38_11_9575436_9577203_9685853_9690988_FR	SWAP70	44448.90982
43	Hg38_3_196466940_196470869_196593741_196597691_FF	RNF168	46109.70739
44	Hg38_3_10166863_10171451_10289864_10293604_RF	IRAK2	46779.70177
45	Hg38_16_20282299_20286605_20445721_20457266_FR	UMOD	54241.62999
46	Hg38_8_47127019_47130852_47283075_47288879_FR	PRKDC	48044.37065
47	Hg38_6_46130577_46139255_46168740_46175484_FF	ENPP4	46958.78429
48	Hg38_1_241870739_241874965_242033568_242040771_FF	EXO1	47180.45513
49	Hg38_5_76400222_76402838_76572657_76583168_RR	IQGAP2	45337.39374
50	Hg38_15_34886920_34889054_34974237_34980574_FF	ACTC1	49743.84856
51	Hg38_11_59844932_59849082_59873751_59881156_FF	TCN1	47867.7306
52	Hg38_2_68140822_68144419_68359452_68365969_FR	PLEK	51605.70057
53	Hg38_2_223296739_223307566_223446116_223450606_FF	AP1S3	49372.04609
54	Hg38_3_2993519_3002201_3121830_3126033_FF	IL5RA	48427.09125
55	Hg38_8_47239740_47247017_47283075_47288879_FR	PRKDC	47376.87168
56	Hg38_19_55428737_55436084_55609240_55610480_RR	SSC5D	47009.69299
57	Hg38_19_50907981_50915866_50961391_50964466_RR	KLK5	51087.9601
58	Hg38_6_13822111_13826619_14070076_14075830_RF	CD83	51551.70406
59	Hg38_2_215168332_215174922_215339857_215344488_FF	FN1	48345.93731
60	Hg38_9_83691585_83699524_83785514_83789572_FF	UBQLN1	48416.43058
61	Hg38_5_76572657_76583168_76717099_76725306_RF	IQGAP2	52489.5729
62	Hg38_1_27966549_27971202_28029814_28033207_FR	SMPDL3B	51485.31893

63	Hg38_2_227820023_227824564_227868226_227874758_RR	CCL20	46004.21086
64	Hg38_12_25200007_25206998_25256673_25260057_FR	KRAS	52498.54024
65	Hg38_7_66298919_66305803_66392051_66398673_FF	CRCP	54136.9225
66	Hg38_10_67952694_67960415_68133244_68143089_FR	SIRT1	54837.31692
67	Hg38_11_78974904_78976508_79134716_79152601_RF	GAB2	41989.93216
68	Hg38_16_20348272_20352389_20445721_20457266_RR	UMOD	55380.96235
69	Hg38_4_70243444_70255254_70475197_70476584_FF	MUC7	52402.38034
70	Hg38_12_45013447_45019401_45077155_45087147_FF	ANO6	51383.90016
71	Hg38_16_12325962_12334419_12372790_12375829_FF	CPPED1	52699.22445
72	Hg38_17_39781052_39789227_39819888_39822803_RR	GRB7	55019.10601
73	Hg38_3_157551093_157568769_157606016_157614360_FF	PTX3	53401.93153
74	Hg38_20_32234511_32238066_32285519_32290180_FF	KIF3B	48801.16551
75	Hg38_5_139327785_139331530_139355652_139356681_FF	MATR3	53797.60168
76	Hg38_6_13822111_13826619_14011144_14016925_RF	CD83	58355.99643
77	Hg38_5_55874716_55883166_56069488_56074299_FR	IL31RA	53914.7156
78	Hg38_1_109359719_109366704_109611657_109614647_RF	PSMA5	54950.53026
79	Hg38_19_50732808_50735232_50961391_50964466_RR	GPR32	56016.13008
80	Hg38_8_55800026_55805370_55942582_55947045_FF	LYN	55621.8783
81	Hg38_11_93115381_93124900_93228754_93237221_FR	MTNR1B	52689.14086
82	Hg38_X_70952076_70955538_71213839_71218089_FF	IL2RG	56885.39132
83	Hg38_11_93057516_93069988_93228754_93237221_FR	MTNR1B	55446.12937
84	Hg38_5_76572657_76583168_76637173_76639966_RF	IQGAP2	58308.47106
85	Hg38_20_4763308_4769930_4885862_4890450_FF	RASSF2	59927.43482
86	Hg38_3_105278351_105281788_105425156_105431103_RF	ALCAM	56327.14698
87	Hg38_19_42642158_42648993_42697457_42701566_RR	CEACAM8	55006.12013
88	Hg38_5_76400222_76402838_76572657_76583168_FR	IQGAP2	53090.77575
89	Hg38_2_223203554_223212132_223446116_223450606_FF	SCG2	58337.7325
90	Hg38_19_38895868_38902769_39089148_39091382_FR	SIRT2	57992.17317
91	Hg38_1_17044824_17050263_17192218_17198113_FF	PADI2	57847.82668
92	Hg38_5_76420596_76423340_76572657_76583168_FR	IQGAP2	58745.04935
93	Hg38_20_34791262_34795203_34932162_34933974_FF	NCOA6	60708.3298
94	Hg38_12_8119443_8124985_8341969_8343630_FF	CLEC4A	60019.25444
95	Hg38_17_1287026_1289930_1411117_1412617_FR	CRK	53984.44619
96	Hg38_1_109359719_109366704_109385998_109391476_RF	PSMA5	56576.1692
97	Hg38_1_187499122_187506399_187600952_187612332_FF	PTGS2	59637.75783
98	Hg38_11_72469497_72474813_72726299_72730494_FF	ARAP1	58295.92687
99	Hg38_15_34813171_34816916_34974237_34980574_FF	ACTC1	61960.99999
100	Hg38_12_32741504_32743146_32986666_32993216_RF	PKP2	66693.25
101	Hg38_8_30141432_30150688_30174555_30176773_FR	DCTN6	55692.9615
102	Hg38_12_8705594_8710071_8956666_8971971_RR	KLRG1	58603.68516

103	Hg38_4_146421995_146434783_146576248_146581867_RR	POU4F2	49274.49382
104	Hg38_20_31418840_31431664_31617243_31621976_RR	DEFB123	59083.38395
105	Hg38_5_76380998_76384783_76572657_76583168_FR	IQGAP2	54851.10909
106	Hg38_1_150618429_150622168_150754333_150760976_FF	CTSS	64127.37577
107	Hg38_8_47283075_47288879_47486518_47496230_RF	PRKDC	57314.15933
108	Hg38_8_47250090_47257109_47283075_47288879_FR	PRKDC	50064.97609
109	Hg38_20_46117565_46123196_46312844_46316630_FF	CD40	59459.05109
110	Hg38_11_59836753_59842056_59873751_59881156_FF	TCN1	53784.52324
111	Hg38_17_75812204_75816321_75950756_75954014_FF	UNC13D	60099.77655
112	Hg38_19_51712234_51719472_51826457_51831790_RF	FPR1	65123.51909
113	Hg38_4_146576248_146581867_146648355_146653240_RF	POU4F2	57957.39948
114	Hg38_4_151824476_151828586_151939544_151951330_RF	FBXW7	56112.04376
115	Hg38_6_136360365_136366092_136470425_136479842_RF	MAP3K5	56877.63053
116	Hg38_3_10094056_10097375_10166863_10171451_RR	BRK1	57233.48463
117	Hg38_3_30527627_30532055_30652453_30660274_FR	TGFBR2	60126.87115
118	Hg38_2_74566692_74568044_74592023_74597081_FR	LOXL3	57121.13507
119	Hg38_7_29859712_29867302_30016613_30019069_RR	WIPF3	60565.65705
120	Hg38_10_26740932_26742560_26959699_26967983_RR	ABI1	59888.31329

表1.a1

編號	FC:(1類/2類)	pfp	P值	CCS
1	1.432700804	0.005113164	0.005113164	免疫
2	1.432377731	0.00216811	0.002123472	免疫
3	1.261392393	0.00019327	0.0000852662093316079	免疫
4	1.24933454	0.000190318	0.0000600478751082751	心臟
5	1.248199493	0.000191193	0.0000821396004875956	免疫
6	1.248110436	0.000190318	0.0000407351774014788	免疫
7	1.244388651	0.000190318	0.0000608132430656547	免疫
8	1.239284032	0.000190318	0.0000248893629995964	免疫
9	1.238018648	0.000190318	0.0000660302361677739	免疫
10	1.237745489	0.000232634	0.000129254	免疫
11	1.232468734	0.000190585	0.0000679703314288909	心臟
12	1.230563488	0.000270694	0.000185233	免疫
13	1.228138328	0.000226279	0.000123122	免疫
14	1.227970267	0.000250933	0.000155726	免疫
15	1.227284759	0.000194259	0.0000866473003156764	免疫
16	1.227283877	0.000236458	0.00014024	免疫
17	1.226172597	0.000190318	0.0000175890246934132	免疫
18	1.223195987	0.000190318	0.0000632774145529100	免疫

19	1.220877422	0.000190318	0.0000256473899263971	免疫
20	1.220844426	0.000197577	0.0000924206625724565	免疫
21	1.220594126	0.000295776	0.000219223	免疫
22	1.219932467	0.000217426	0.000113829	免疫
23	1.219326086	0.000190318	0.0000314882959726604	免疫
24	1.218547015	0.00029559	0.000215607	心臟
25	1.218546484	0.000225914	0.000122259	免疫
26	1.217793578	0.000190585	0.0000727087524469363	免疫
27	1.217634455	0.000190318	0.0000558784524675291	心臟
28	1.214995239	0.000190318	0.0000261730567931897	免疫
29	1.214925448	0.000445143	0.000381491	免疫
30	1.21420253	0.000221256	0.000117135	免疫
31	1.213208971	0.000232634	0.000129317	免疫
32	1.212777042	0.000190318	0.0000655570525199885	免疫
33	1.212729895	0.000191193	0.0000804439468234639	免疫
34	1.212672171	0.000471617	0.000410584	免疫
35	1.212339076	0.000190585	0.0000783090229779244	免疫
36	1.211313728	0.000190318	0.0000273915828374346	免疫
37	1.210971319	0.000270694	0.000188689	免疫
38	1.210935714	0.000203616	0.000100216	免疫
39	1.210848175	0.001762385	0.001715734	免疫
40	1.210759976	0.003185687	0.003148208	免疫
41	1.210755417	0.000460206	0.000399296	免疫
42	1.210288615	0.000266947	0.000170375	免疫
43	1.209957577	0.000236458	0.000138509	免疫
44	1.209213182	0.000235024	0.000134793	免疫
45	1.209175245	0.000190318	0.0000247322439789465	免疫
46	1.20891203	0.000203616	0.00010061	免疫
47	1.208676033	0.000190318	0.0000585964148685346	免疫
48	1.208555322	0.000190318	0.0000662672547004071	免疫
49	1.207074623	0.000235024	0.000133546	免疫
50	1.204960402	0.000190585	0.0000784761579361953	心臟
51	1.204466691	0.000270694	0.000186333	免疫
52	1.204265587	0.000198471	0.0000945655818356899	免疫
53	1.203832699	0.000377016	0.000308266	免疫
54	1.20361951	0.000203616	0.0000986733609637470	免疫
55	1.203047691	0.000323677	0.000248469	免疫

56	1.202678261	0.000386009	0.000316755	免疫
57	1.202676692	0.000190318	0.0000369636644668720	免疫
58	1.202099372	0.000190318	0.0000379683365434912	免疫
59	1.201468439	0.000309338	0.000232913	免疫
60	1.201216095	0.000398896	0.000329676	免疫
61	1.201051522	0.000190585	0.0000780928794896019	免疫
62	1.200030214	0.000205013	0.00010311	免疫
63	1.198654468	0.000208559	0.000105506	免疫
64	1.198534797	0.000190318	0.0000524933985960772	免疫
65	1.19847735	0.000424345	0.000356949	免疫
66	1.198308347	0.000190318	0.0000588163199349148	免疫
67	1.1980759	0.003159364	0.003112902	免疫
68	1.198072413	0.000190318	0.0000238384529441442	免疫
69	1.197988929	0.000331089	0.000256107	免疫
70	1.197718744	0.000436269	0.000370828	免疫
71	1.197394377	0.000267757	0.000174042	免疫
72	1.19677388	0.000190585	0.0000778740690545236	免疫
73	1.196698463	0.000236458	0.000138568	免疫
74	1.196661797	0.00035878	0.000285969	免疫
75	1.196248355	0.000270694	0.000187911	免疫
76	1.195984218	0.000190318	0.0000112566859098334	免疫
77	1.195682592	0.000190318	0.0000619732654937230	免疫
78	1.194986266	0.000190318	0.0000241090249404686	免疫
79	1.194608978	0.000190318	0.0000485840591196331	免疫
80	1.194497412	0.000190318	0.0000473235495640848	免疫
81	1.194332622	0.000370996	0.000298257	心臟
82	1.194295196	0.000190318	0.0000447040951612409	免疫
83	1.193750964	0.000220747	0.000116217	心臟
84	1.193449221	0.000190318	0.0000206378276547441	免疫
85	1.1931546	0.000190318	0.0000353670578327641	免疫
86	1.19304865	0.000241232	0.000148287	免疫
87	1.192289525	0.000211794	0.000109015	免疫
88	1.19220398	0.000269965	0.0001777	免疫
89	1.192155643	0.000203616	0.0000992033550152097	免疫
90	1.191812951	0.000190318	0.0000370888319081472	免疫
91	1.191782438	0.000190318	0.0000395163946477312	免疫
92	1.191324001	0.000190318	0.0000582140809924575	免疫

93	1.190714179	0.000190318	0.0000203083647353577	免疫
94	1.190702538	0.000190318	0.0000573892590397073	免疫
95	1.190499917	0.000367955	0.000294364	免疫
96	1.190008843	0.000190585	0.0000712243208368300	免疫
97	1.188655157	0.000190318	0.0000490378253543905	心臟
98	1.187152176	0.000296454	0.000221468	心臟
99	1.184047821	0.000211794	0.000108871	心臟
100	1.181070726	0.000190318	0.0000290960447036924	心臟
101	1.189894605	0.000267757	0.000173585	免疫
102	1.189574098	0.000241232	0.00014759	免疫
103	1.189341371	0.001503703	0.001455054	免疫
104	1.189054381	0.000197577	0.0000912070407078747	免疫
105	1.188958993	0.000349576	0.000274341	免疫
106	1.188853014	0.000190318	0.0000207507672832592	免疫
107	1.188487932	0.000296454	0.000221421	免疫
108	1.18834688	0.000953713	0.000903222	免疫
109	1.187993343	0.0002561	0.000160439	免疫
110	1.187956606	0.000386774	0.00031852	免疫
111	1.187782434	0.000281289	0.000199385	免疫
112	1.187618829	0.000190318	0.0000195821615274430	免疫
113	1.187303761	0.000374876	0.000305414	免疫
114	1.187272836	0.000270662	0.000183891	免疫
115	1.18719651	0.000309944	0.000234281	免疫
116	1.186853935	0.000270451	0.000180566	免疫
117	1.186778182	0.000190318	0.0000444105488788849	免疫
118	1.186672454	0.000211794	0.000108212	免疫
119	1.186560703	0.000270662	0.000181532	免疫
120	1.186285074	0.000197577	0.0000913431738671524	免疫

表1.a2

	探針序列	探針位置
編號	**60 mer**	**Chr**
1	AGGGGTCACTGTTGATTCTGGAGTGTTCTCGAGGTGACAGATTTTGTAGACACTTTATGG	1
2	AGGGGTCACTGTTGATTCTGGAGTGTTCTCGAAAGAGGGAGACCAATAGCAAAAGGAACA	1
3	ACTGAATATCTCTATCTATGAATAGAGTTCGATCTCCTGACCTCCATCATGTCCTCTCTT	22

4	TTAATTTTTTAATTACATTTAATCAGCATCGAACTCCTGACCTTGTAATCTGTCCACCTT	11
5	TTATCCAATTATAAGTCTATTGGCTCTTTCGAACTCCTGACCTCACGTAATTCTCCCACC	12
6	AAAAAAAAAAGGAAAAGAAAGAAGAAAGTCGATCTCCTGACCTAGTGATTGGCCCTCCTC	17
7	AATAAACTATGACTTTGTGAAGATTCAGTCGATCTCCTGACCTAGTGATTGGCCCTCCTC	17
8	TACGAGGAAATAGAATAAGATCTAGTATTCGAACTCCTGACCCTAGGTGATCCTCCTGCT	19
9	ATTTTTATTTTTTTGTTTGTTTTTGTTTTCGAACTCCTGACCTCAGGAGTTCCACCCACC	1
10	TTTTTCAGGGTGTGTTTCCATATAAAGATCGAACTCCTGACCTCAAGAAATCTACCTGCC	10
11	CTCAAAGACCCAAATATAGAAATACCATTCGAACTCCTGACCTTGTAATCTGTCCACCTT	11
12	GCATTAAAAAAAGATACCTTGTTCAGAATCGAACTCCTGACCTCACGTCAATTCATAAGT	18
13	CAGTCTTAAAAATCAATTCCACAAATCATCGAGACCAGCCTGACTGATATTGTGAAACCC	1
14	TGCTTTTGTGTCACAGGTTTTGACAACTTCGAACTCCTGACCGAAGCGATGATCCAGCCG	19
15	TATCATAGTCCAGATGAGATAATTTCCTTCGAACTCCTGACCTCAGGTAGTCCAACTGTC	3
16	ACAAAGCACTTGAACTTACATTAAGTCATCGAGACCAGCCTGACTGATATTGTGAAACCC	1
17	GGACCATTTCTGTAGCAGAAAGAGGAAGTCGATCTCCTGATCTCGTGATCTACCTTCCTT	11
18	TGTTTTTTATACTGCAAGACAGAGAGATTCGATCTCCTGACCTAGTGATTGGCCCTCCTC	17
19	GTTAGACATAAAGACTAATGGGATAGAATCGAACTCCTGACTTCAGGAAATCTGCCCGTC	5
20	CATGTGTATTCAGAAAGAAGTATGTGAATCGAACTCCTGACCTCAAATAATTCGCCCGCC	6
21	TAAGTGAACACGCAAGATAAAAATAGTATCGAACTCCTGACCTCAAAAAATCCACCACCT	4
22	GGTGCTGAAAATAAAGATACCCTTTCTGTCGAACTCCTGACCTCAATTAATCCACCCACC	15
23	GAGTAAGGAGTTTTTGTTGTCGTTGTTTTCGATCTCCTGACCTCCATCATGTCCTCTCTT	22
24	AACTAATAAACTTGATGCAGAAGGAATTTCGAACTCCTGACCTTGTAATCTGTCCACCTT	11
25	AGTTCCTGCTATGTATAAAATGAAACTTTCGATCTCCTGTTCTCGTGATCCACCTGCCTC	10
26	ATACTAATTAATACGTAACCTACTAACATCGATCTCTTGACCTCA	1

	TGGTCTCCCACCTCA	
27	CCAAAAGCTTGCTTCATCCATTGATTCATCGAACTCCTGACCTTGTAATCTGTCCACCTT	11
28	AAAGGCAGAAGAAAGCCCTAGAAGAAGGTCGATCTCCTGACCTAGTGATTGGCCCTCCTC	17
29	AGGAAACATACTATCAACATTATAGCTGTCGAACTCCTGACCTCACGTCAATTCATAAGT	18
30	CCTAGCAAGGCAATCTACTCTGTTAAAGTCGAACTCCTGACCTCTAGTGATACACCTACC	3
31	TCTGAAACTGTGATGGTAGAGACAGATATCGATCTCCTGATCTCGTGATCTACCTTCCTT	11
32	GAAGTTATTGTCTTAGCCCATTGAAGCATCGAACTCCTGACCTCTAGTGATACACCTACC	3
33	TATTGTCCCCATTTTACAGAAGAAGAAATCGATCTCCTGACCTAGTGATTGGCCCTCCTC	17
34	TCATGTACAAAAATTAACTCAAAATGAATCGAACTCCTGACCTCAGAAGATTTGCCTGCC	7
35	TCACTCCCAAGCCATTGTGTTGTCTAAATCGAACTCCTGACCTCAACTGATTTGTCCACC	8
36	AGCTTTGAGCAGCTTTTATTTTTACATGTCGAACTCCTGACCTCAGGTAATCTTCCCACA	1
37	TTTCATACTTTTAATCTTACTAATGTTGTCGAACTCCTGACCTCAACTGATTTGTCCACC	8
38	CGAACAGATATTAATTCAACAGCTGCAATCGATCTCCTGATCTCGTGATCTACCTTCCTT	11
39	TTGATTGGGATGACATTAAATGTATAGGTCGAACTCCTGACCTACCTCAAGTGATCCATC	2
40	CTTGATCAAGAGGGATTTAAACTGAAATTCGAGGAGTATCTTTGTGGCTTTCTCTGTATT	22
41	AGTCTGCCTCTTGGGAGTCATCCTGGGTTCGAGGAGTATCTTTGTGGCTTTCTCTGTATT	22
42	CAGTGCTTGGACAGCATTCTCATGTAGTTCGATCTCCTGATCTCGTGATCTACCTTCCTT	11
43	AACCCTGATTTTCTGATTTAACACTGATTCGAACTCCTGACCTCAGGTAGTCCAACTGTC	3
44	TTTTGTCCTAGTTGTAGCTTTTATAATTTCGAACTCCTGACCTCATGTGATTTGGCCGCT	3
45	AGACTCAACCATTTGTCTAACCAATCAATCGAACTCCTGACCTCAGATGATTCACTCACC	16
46	TTCCTAAACTTTATGACTGAAATTATCTTCGAACTCCTGATCTCAGGTGATTTACTTGCG	8
47	GTGTCTGCATCTATTTTTATTAAGCCTTTCGAACTCCTGACTTTGTGATTCGCAAAATAT	6
48	ACCAGCTCCTGTATTCCACTAGAAGACTTCGAACTCCTGACCTTGTGCTCTGTCTGCCTC	1

49	TTTAAAATAACAGATTATATCAAGAGCATCGAACTCCTGACTTCAGGAAATCTGCCCGTC	5
50	ATTCTAATATTCTTTAAAAACCATAAATTCGATCTCTTGACCTTGTGACTCACCCGCATC	15
51	TGCCACCTCTAGAAGGAACACAGCTCCTTCGATCTCCTGACCTCATGACGTGTCCGCCTT	11
52	TCTCAAAATAGCCAAAAGTCTGAAACAATCGAACTCCCGACCTCCAGTGGAAGTTCACAC	2
53	ATACACTTCTATCTTGGAACTATTGAGATCGAACTCCTGACCTACCTCAAGTGATCCATC	2
54	CTAATTTTTATGAATATTTTTAATTGATTCGAACTCCTGACCTCGTGTTCCCCAGGCCTC	3
55	ATTTTGTTAAATCCTTTCTCTGCATCAATCGAACTCCTGATCTCAGGTGATTTACTTGCG	8
56	TTTTTGGAATAAATAGACATTTTCCTGATCGAACTCCTGACTATAGTTGATCCACCCACC	19
57	CGGGGAGCCTTACCAATAACATAAATAGTCGAACTCCTGACCCTAGGTGATCCTCCTGCT	19
58	AATAAAAATAGAAAACAATCCTTCAAAATCGATCTCCTTACCTCGTAATCTGCCTGCATA	6
59	TTGTAAAATCTAGTCTTCTGCTTCCAAGTCGAACTCCTGAGCTCAAGTCATCTACGTGCC	2
60	TTTTTATTTTTTTGTAGACAGGCTGGTCTCGAGGAAGGGATTCTGGACAGATAAAAACAA	9
61	ATTTAAACTATTTAATAATTTGCTGTATTCGAACTCCTGACTTCAGGAAATCTGCCCGTC	5
62	TGATGCTAAGGCACAGTCAGTTTTACATTCGAACTCCTGACCTCAGGAGTTCCACCCACC	1
63	GAGTTGGGCAGATCATGAGGTCAGGAGTTCGATCTCCTGACCTTATGATCTGCCCACCTT	2
64	ATGAAGTGATTTACATAAAGTAGCTTGATCGAACTCCAGACCTCAGGAGATCTGCAGTCC	12
65	GATAATATTTAGTGAATATAGGGCTATTTCGAACTCCTGACTTGAGGTGATTCACCTGCC	7
66	CTAAAATTTTTTTTTTTGAGACGGAGCTTCGAACTCCTGACCTTATGCAATCCACTTGCC	10
67	TACAACAATTTATTTTTGGTTTAAAAGCTCGAACTCCTGACCTTATATAATCTGCCCACC	11
68	GGAGTGCAGTATAGACGAGGACTGCAAATCGAACTCCTGACCTCAGATGATTCACTCACC	16
69	GGTGGTCACCCATAGTCATTTACTTCTGTCGAACTCCTGACCTCACATTCCTGTATTTTC	4
70	CACGTTCTGGTAGTTAGGAAAATTCAAATCGAACTCCTGACCTCATTACCCACCCACCTT	12
71	TGGGGAAAAAAATCATCCCCGGGTGCATTCGAACTCCTGACCTCA	16

	AATGCACCCCCACCT	
72	TTTACAACTGCTGGTCAGCCAGAGTCAGTCGAACTCCTGACCTCCAGAAAAATCCGCCCA	17
73	ATTTTTTTATGTGATGTGAGGTAAGAGTTCGATCTCCTGACCTCAGATGATCCATCTGCC	3
74	TAAATGCTCTTAATTATAAAAAATTCTGTCGAATTCCTGACCTCAGGTGTTCTACCTGCC	20
75	CTGTTAGTGATAAATCTGTAACAGCCCTTCGAACTCCTGACATCAAATAATCCACTCGCC	5
76	TTCCTATATGCCTGGAATAATGCCTTAGTCGATCTCCTTACCTCGTAATCTGCCTGCATA	6
77	CTGTTTCATCTGATTTAAAATACACACTTCGAACTCCTGACCTCAGGCAGTCACCTTCTT	5
78	GTACAGCCAAGGTGGAGAACTACTGAGGTCGAACTCCTGACCTCAGGTAATCTTCCCACA	1
79	ATCTTCTTTTCTTCCCCCATCCATTTCATCGAACTCCTGACCCTAGGTGATCCTCCTGCT	19
80	CAGATGAATCCCTTGTAACCTAGATACATCGAACTCCTGACCACAGGTGATCTACCTAAC	8
81	TGTCATTCAGCAATATTCAGTTTTTTGATCGAACTCCTGACCTTGTAATCTGTCCACCTT	11
82	TTGATCTACAGACTTAGAGCAACAGCCATCGAAGTCCTGACCTCAGGTAATCCTGCTGCC	X
83	GAATCCTAATCATAAAAGGGAAGTTTTATCGAACTCCTGACCTTGTAATCTGTCCACCTT	11
84	AGATGTATCAAACTATAAAGCAGCAGCATCGAACTCCTGACTTCAGGAAATCTGCCCGTC	5
85	TATAAGGCTTAAGATCTCTTAGAGTCTATCGAACTCATGACCTCAGGTTATCCTCCTGCC	20
86	ATAGAAAGTATATTCTATTAAGAGGTACTCGAGACCAGACTGGATAACAAGGCAAAACCC	3
87	CCTGGAAATCAGCTAGGAGGCCATTCCTTCGATCTCCTGACCTCGTGCGCAAGAGCAATG	19
88	TGTAGACAAAAAGTGACAGAAGCAACTTTCGAACTCCTGACTTCAGGAAATCTGCCCGTC	5
89	GAAAGGTGGAGAATGAGGTGAAAAGAAGTCGAACTCCTGACCTACCTCAAGTGATCCATC	2
90	TGGCTGCTTTTGCACTGACACAGCAGAGTCGAACTCCTGACCTCAAGTAATCTACCCACC	19
91	CCAGGATGTACTACACTGAATATCTAAGTCGAACTCCTGACCTCAGGTTATCCATCTGCC	1
92	TGGTACCCGCTATTAAAATGGTGCTTGGTCGAACTCCTGACTTCAGGAAATCTGCCCGTC	5
93	CAGGTTGCTAAAAATCATTTTTGCATGATCGAACTCCTGACCTTACGATCCACCCACCTT	20

94	CCCCCATCATTTGACAAAATATCATAACTCGAACTCCTGACCTCA TGATTTCCTGCCTCA	12
95	GCACCCAAGCTGGGAACCTGGGAATCATTCGATCTCCTGACCTCG TGATTACAGGTGTGA	17
96	CAAAACTTCTTGTGCTGTAGATGAGGAATCGAACTCCTGACCTCA GGTAATCTTCCCACA	1
97	GTGATAAGTTATACAGAGATAAAATAAGTCGAACTCCTGGACTT ATGTGATCTGCCCCCC	1
98	CAGAAAGGCTATTAGAATGCTTTGACCTTCGAATTCCTGACCTCA AGTGTTGGGATTACA	11
99	TAACAAAACATTTAAGAAGTAAATAATATCGATCTCTTGACCTTG TGACTCACCCGCATC	15
100	TCACATTTGAATTATTCACCCAAATGAATCGAACTCCTGACGTCA GGTGATCTACCTGTC	12
101	GTAAGAAGTGAGTGGGAATTAGACCAGCTCGATCTCCTGACCTTA AGCGATCTCCCCGCC	8
102	ACTGATATACCTATCCTTATTAAGGCACTCGAACTCCTGACCTCA CGTAATTCTCCCACC	12
103	GATACAATTTCTGTTTAAGAGAGTGTAATCGAACTCCTGACCTCA CTCAGGTGATCCCCC	4
104	ATATTGGAAATTATTTTACTCTAGACTTTCGAACTCCTTGACCTCA GGTGATCTACCTGC	20
105	ACTTTTCTTTTATGCCAATTAGAATAAGTCGAACTCCTGACTTCAG GAAATCTGCCCGTC	5
106	TTTTTCATGGGTTTTTGTTTTGTTTATTTCGAACTTCTGACCTCATG ATCAACCCATCTT	1
107	TTCCCTGACTGGAACCTCTAGTACAATGTCGAACTCCTGATCTCA GGTGATTTACTTGCG	8
108	AACCCCTTTTATTTCCTATACATCTATTTCGAACTCCTGATCTCAG GTGATTTACTTGCG	8
109	GGCTTCTTCTCCAATGTGTCATCTGCTTTCGAACTCCTGACCTCAA TGTGACTCACCTGC	20
110	GGATATTTGGATGTAATGAGGAGAAGCATCGATCTCCTGACCTCA TGACGTGTCCGCCTT	11
111	TATCTCTGAGATGAGAATGGAAAATAAATCGAATTCCTGACCTCT TGATCTGTCTGCCTT	17
112	ATGGTCTTCCTCAACAGTTTTTCTTTCATCGAACTCGTGACCTCAA GTGGTCTCCCTGCC	19
113	AACTGTTGGGGCTCTAATTTATATCTGATCGAACTCCTGACCTCA CTCAGGTGATCCCCC	4
114	AAGACAGATCTGGTTTTTTTTTGAAATGTCGATTTCCTGACCTTGT GATCCAATGCCAGG	4
115	TAAAACTGTAAAACACTGATGCCAGAAATCGAACTCCTGACTTCG GTGATCTACCTGCCG	6
116	TAGGCAGACTTACCTACCACAGATACAGTCGAACTCCTGACCTCA	3

	TGTGATTTGGCCGCT	
117	TATTGTCTTTCTTCAGATGTGGGCTACATCGAACTCCTGACCTCAGGTGAATAACCTGCC	3
118	AATTTGAAAAGTTACACAACATTTATAGTCGAACTACTGACCTAAGTGATCCACCCACCT	2
119	TCAGCTGGGGTTTCCCAAGCCCTTGAGATCGAACTCCTGACCTCAGAAGATTTGCCTGCC	7
120	ATAGGTAAAAAAGGAACTGAAGGTAAAATCGAACTCCTGACCTCAAGAGATCTGTCCTCC	10

表1.a3

	探針位置			
編號	**開始1**	**結束1**	**開始2**	**結束2**
1	112153186	112153215	112272447	112272476
2	112153186	112153215	112262817	112262846
3	25299532	25299561	25482040	25482069
4	93197090	93197119	93228756	93228785
5	8956668	8956697	9052194	9052223
6	27705009	27705038	27778036	27778065
7	27705009	27705038	27865683	27865712
8	50840717	50840746	50961393	50961422
9	27836402	27836431	28029816	28029845
10	101411215	101411244	101490107	101490136
11	93057518	93057547	93228756	93228785
12	42444490	42444519	42488743	42488772
13	99639845	99639874	99714372	99714401
14	34393710	34393739	34499920	34499949
15	196356745	196356774	196597660	196597689
16	99670351	99670380	99714372	99714401
17	9685855	9685884	9716872	9716901
18	27705009	27705038	27879478	27879507
19	76572659	76572688	76680139	76680168
20	132711125	132711154	132761426	132761455
21	154222023	154222052	154421616	154421645
22	98883743	98883772	99043861	99043890
23	25482040	25482069	25619470	25619499
24	93183030	93183059	93228756	93228785
25	122685605	122685634	122705503	122705532
26	99538093	99538122	99618650	99618679
27	93198709	93198738	93228756	93228785
28	27602913	27602942	27705009	27705038

29	42413426	42413455	42488743	42488772
30	184240659	184240688	184480441	184480470
31	9685855	9685884	9839688	9839717
32	184390826	184390855	184480441	184480470
33	27609056	27609085	27705009	27705038
34	29911761	29911790	30016615	30016644
35	5125372	5125401	5302509	5302538
36	109341941	109341970	109359721	109359750
37	5120560	5120589	5302509	5302538
38	9663012	9663041	9685855	9685884
39	223395100	223395129	223450575	223450604
40	34722668	34722697	34750118	34750147
41	34696714	34696743	34750118	34750147
42	9577172	9577201	9685855	9685884
43	196470838	196470867	196597660	196597689
44	10166865	10166894	10293573	10293602
45	20286574	20286603	20445723	20445752
46	47130821	47130850	47283077	47283106
47	46139224	46139253	46175453	46175482
48	241874934	241874963	242040740	242040769
49	76400224	76400253	76572659	76572688
50	34889023	34889052	34980543	34980572
51	59849051	59849080	59881125	59881154
52	68144388	68144417	68359454	68359483
53	223307535	223307564	223450575	223450604
54	3002170	3002199	3126002	3126031
55	47246986	47247015	47283077	47283106
56	55428739	55428768	55609242	55609271
57	50907983	50908012	50961393	50961422
58	13822113	13822142	14075799	14075828
59	215174891	215174920	215344457	215344486
60	83699493	83699522	83789541	83789570
61	76572659	76572688	76725275	76725304
62	27971171	27971200	28029816	28029845
63	227820025	227820054	227868228	227868257
64	25206967	25206996	25256675	25256704
65	66305772	66305801	66398642	66398671
66	67960384	67960413	68133246	68133275
67	78974906	78974935	79152570	79152599
68	20348274	20348303	20445723	20445752

69	70255223	70255252	70476553	70476582
70	45019370	45019399	45087116	45087145
71	12334388	12334417	12375798	12375827
72	39781054	39781083	39819890	39819919
73	157568738	157568767	157614329	157614358
74	32238035	32238064	32290149	32290178
75	139331499	139331528	139356650	139356679
76	13822113	13822142	14016894	14016923
77	55883135	55883164	56069490	56069519
78	109359721	109359750	109614616	109614645
79	50732810	50732839	50961393	50961422
80	55805339	55805368	55947014	55947043
81	93124869	93124898	93228756	93228785
82	70955507	70955536	71218058	71218087
83	93069957	93069986	93228756	93228785
84	76572659	76572688	76639935	76639964
85	4769899	4769928	4890419	4890448
86	105278353	105278382	105431072	105431101
87	42642160	42642189	42697459	42697488
88	76402807	76402836	76572659	76572688
89	223212101	223212130	223450575	223450604
90	38902738	38902767	39089150	39089179
91	17050232	17050261	17198082	17198111
92	76423309	76423338	76572659	76572688
93	34795172	34795201	34933943	34933972
94	8124954	8124983	8343599	8343628
95	1289899	1289928	1411119	1411148
96	109359721	109359750	109391445	109391474
97	187506368	187506397	187612301	187612330
98	72474782	72474811	72730463	72730492
99	34816885	34816914	34980543	34980572
100	32741506	32741535	32993185	32993214
101	30150657	30150686	30174557	30174586
102	8705596	8705625	8956668	8956697
103	146421997	146422026	146576250	146576279
104	31418842	31418871	31617245	31617274
105	76384752	76384781	76572659	76572688
106	150622137	150622166	150760945	150760974
107	47283077	47283106	47496199	47496228
108	47257078	47257107	47283077	47283106

109	46123165	46123194	46316599	46316628
110	59842025	59842054	59881125	59881154
111	75816290	75816319	75953983	75954012
112	51712236	51712265	51831759	51831788
113	146576250	146576279	146653209	146653238
114	151824478	151824507	151951299	151951328
115	136360367	136360396	136479811	136479840
116	10094058	10094087	10166865	10166894
117	30532024	30532053	30652455	30652484
118	74568013	74568042	74592025	74592054
119	29859714	29859743	30016615	30016644
120	26740934	26740963	26959701	26959730

表1.a4

	4 kb序列位置				
編號	**Chr**	**開始1**	**結束1**	**開始2**	**結束2**
1	1	112149216	112153215	112268477	112272476
2	1	112149216	112153215	112262817	112266816
3	22	25295562	25299561	25482040	25486039
4	11	93193120	93197119	93228756	93232755
5	12	8956668	8960667	9048224	9052223
6	17	27705009	27709008	27774066	27778065
7	17	27705009	27709008	27861713	27865712
8	19	50836747	50840746	50961393	50965392
9	1	27832432	27836431	28029816	28033815
10	10	101411215	101415214	101486137	101490136
11	11	93057518	93061517	93228756	93232755
12	18	42444490	42448489	42488743	42492742
13	1	99635875	99639874	99710402	99714401
14	19	34389740	34393739	34499920	34503919
15	3	196352775	196356774	196593690	196597689
16	1	99666381	99670380	99710402	99714401
17	11	9685855	9689854	9712902	9716901
18	17	27705009	27709008	27875508	27879507
19	5	76572659	76576658	76676169	76680168
20	6	132707155	132711154	132757456	132761455
21	4	154218053	154222052	154421616	154425615
22	15	98879773	98883772	99039891	99043890
23	22	25482040	25486039	25615500	25619499
24	11	93179060	93183059	93228756	93232755

25	10	122681635	122685634	122701533	122705532
26	1	99534123	99538122	99618650	99622649
27	11	93198709	93202708	93228756	93232755
28	17	27598943	27602942	27705009	27709008
29	18	42413426	42417425	42488743	42492742
30	3	184236689	184240688	184480441	184484440
31	11	9685855	9689854	9835718	9839717
32	3	184386856	184390855	184480441	184484440
33	17	27609056	27613055	27705009	27709008
34	7	29907791	29911790	30016615	30020614
35	8	5121402	5125401	5298539	5302538
36	1	109341941	109345940	109359721	109363720
37	8	5116590	5120589	5298539	5302538
38	11	9659042	9663041	9685855	9689854
39	2	223391130	223395129	223446605	223450604
40	22	34722668	34726667	34750118	34754117
41	22	34696714	34700713	34750118	34754117
42	11	9573202	9577201	9685855	9689854
43	3	196466868	196470867	196593690	196597689
44	3	10166865	10170864	10289603	10293602
45	16	20282604	20286603	20445723	20449722
46	8	47126851	47130850	47283077	47287076
47	6	46135254	46139253	46171483	46175482
48	1	241870964	241874963	242036770	242040769
49	5	76400224	76404223	76572659	76576658
50	15	34885053	34889052	34976573	34980572
51	11	59845081	59849080	59877155	59881154
52	2	68140418	68144417	68359454	68363453
53	2	223303565	223307564	223446605	223450604
54	3	2998200	3002199	3122032	3126031
55	8	47243016	47247015	47283077	47287076
56	19	55428739	55432738	55609242	55613241
57	19	50907983	50911982	50961393	50965392
58	6	13822113	13826112	14071829	14075828
59	2	215170921	215174920	215340487	215344486
60	9	83695523	83699522	83785571	83789570
61	5	76572659	76576658	76721305	76725304
62	1	27967201	27971200	28029816	28033815
63	2	227820025	227824024	227868228	227872227
64	12	25202997	25206996	25256675	25260674

65	7	66301802	66305801	66394672	66398671
66	10	67956414	67960413	68133246	68137245
67	11	78974906	78978905	79148600	79152599
68	16	20348274	20352273	20445723	20449722
69	4	70251253	70255252	70472583	70476582
70	12	45015400	45019399	45083146	45087145
71	16	12330418	12334417	12371828	12375827
72	17	39781054	39785053	39819890	39823889
73	3	157564768	157568767	157610359	157614358
74	20	32234065	32238064	32286179	32290178
75	5	139327529	139331528	139352680	139356679
76	6	13822113	13826112	14012924	14016923
77	5	55879165	55883164	56069490	56073489
78	1	109359721	109363720	109610646	109614645
79	19	50732810	50736809	50961393	50965392
80	8	55801369	55805368	55943044	55947043
81	11	93120899	93124898	93228756	93232755
82	X	70951537	70955536	71214088	71218087
83	11	93065987	93069986	93228756	93232755
84	5	76572659	76576658	76635965	76639964
85	20	4765929	4769928	4886449	4890448
86	3	105278353	105282352	105427102	105431101
87	19	42642160	42646159	42697459	42701458
88	5	76398837	76402836	76572659	76576658
89	2	223208131	223212130	223446605	223450604
90	19	38898768	38902767	39089150	39093149
91	1	17046262	17050261	17194112	17198111
92	5	76419339	76423338	76572659	76576658
93	20	34791202	34795201	34929973	34933972
94	12	8120984	8124983	8339629	8343628
95	17	1285929	1289928	1411119	1415118
96	1	109359721	109363720	109387475	109391474
97	1	187502398	187506397	187608331	187612330
98	11	72470812	72474811	72726493	72730492
99	15	34812915	34816914	34976573	34980572
100	12	32741506	32745505	32989215	32993214
101	8	30146687	30150686	30174557	30178556
102	12	8705596	8709595	8956668	8960667
103	4	146421997	146425996	146576250	146580249
104	20	31418842	31422841	31617245	31621244

105	5	76380782	76384781	76572659	76576658
106	1	150618167	150622166	150756975	150760974
107	8	47283077	47287076	47492229	47496228
108	8	47253108	47257107	47283077	47287076
109	20	46119195	46123194	46312629	46316628
110	11	59838055	59842054	59877155	59881154
111	17	75812320	75816319	75950013	75954012
112	19	51712236	51716235	51827789	51831788
113	4	146576250	146580249	146649239	146653238
114	4	151824478	151828477	151947329	151951328
115	6	136360367	136364366	136475841	136479840
116	3	10094058	10098057	10166865	10170864
117	3	30528054	30532053	30652455	30656454
118	2	74564043	74568042	74592025	74596024
119	7	29859714	29863713	30016615	30020614
120	10	26740934	26744933	26959701	26963700

表1.a5

	巢式PCR引子集	
編號	探針	引子ID
1	Hg38_1_112145907_112153217_112262815_112272478_FF	OBD183-261
2	Hg38_1_112145907_112153217_112262815_112272478_FR	OBD183-189
3	Hg38_22_25290566_25299563_25482038_25486782_FR	OBD183-013
4	Hg38_11_93191458_93197121_93228754_93237221_FR	OBD183-321
5	Hg38_12_8956666_8971971_9041253_9052225_RF	OBD183-141
6	Hg38_17_27705007_27714184_27773460_27778067_RF	OBD183-093
7	Hg38_17_27705007_27714184_27860380_27865714_RF	OBD183-117
8	Hg38_19_50837203_50840748_50961391_50964466_FR	OBD183-269
9	Hg38_1_27834284_27836433_28029814_28033207_FR	OBD183-293
10	Hg38_10_101411213_101417434_101485766_101490138_RF	OBD183-025
11	Hg38_11_93057516_93069988_93228754_93237221_RR	OBD183-233
12	Hg38_18_42444488_42452373_42488741_42500135_RR	OBD183-301
13	Hg38_1_99631771_99639876_99708395_99714403_FF	OBD183-1201
14	Hg38_19_34387270_34393741_34499918_34506554_FR	OBD183-1205
15	Hg38_3_196353836_196356776_196593741_196597691_FF	OBD183-389
16	Hg38_1_99659612_99670382_99708395_99714403_FF	OBD183-1209
17	Hg38_11_9685853_9690988_9710140_9716903_RF	OBD183-381
18	Hg38_17_27705007_27714184_27875357_27879509_RF	OBD183-029
19	Hg38_5_76572657_76583168_76676513_76680170_RF	OBD183-069
20	Hg38_6_132703799_132711156_132757539_132761457_FF	OBD183-1213

21	Hg38_4_154217720_154222054_154421614_154428471_FR	OBD183-057
22	Hg38_15_98874707_98883774_99040149_99043892_FF	OBD183-205
23	Hg38_22_25482038_25486782_25613025_25619501_RF	OBD183-113
24	Hg38_11_93178112_93183061_93228754_93237221_FR	OBD183-245
25	Hg38_10_122677780_122685636_122702672_122705534_FF	OBD183-065
26	Hg38_1_99533569_99538124_99618648_99629858_FR	OBD183-273
27	Hg38_11_93198707_93202947_93228754_93237221_RR	OBD183-253
28	Hg38_17_27594551_27602944_27705007_27714184_FR	OBD183-041
29	Hg38_18_42413424_42422256_42488741_42500135_RR	OBD183-281
30	Hg38_3_184235022_184240690_184480439_184482239_FR	OBD183-053
31	Hg38_11_9685853_9690988_9833988_9839719_RF	OBD183-385
32	Hg38_3_184389484_184390857_184480439_184482239_FR	OBD183-185
33	Hg38_17_27609054_27616846_27705007_27714184_RR	OBD183-077
34	Hg38_7_29905017_29911792_30016613_30019069_FR	OBD183-1217
35	Hg38_8_5120591_5125403_5295149_5302540_FF	OBD183-1221
36	Hg38_1_109341939_109348573_109359719_109366704_RR	OBD183-1225
37	Hg38_8_5115633_5120591_5295149_5302540_FF	OBD183-1229
38	Hg38_11_9656772_9663043_9685853_9690988_FR	OBD183-397
39	Hg38_2_223382061_223395131_223446116_223450606_FF	OBD183-237
40	Hg38_22_34722666_34726389_34750116_34757594_RR	OBD183-1233
41	Hg38_22_34696712_34700627_34750116_34757594_RR	OBD183-137
42	Hg38_11_9575436_9577203_9685853_9690988_FR	OBD183-353
43	Hg38_3_196466940_196470869_196593741_196597691_FF	OBD183-349
44	Hg38_3_10166863_10171451_10289864_10293604_RF	OBD183-341
45	Hg38_16_20282299_20286605_20445721_20457266_FR	OBD183-1237
46	Hg38_8_47127019_47130852_47283075_47288879_FR	OBD183-1241
47	Hg38_6_46130577_46139255_46168740_46175484_FF	OBD183-1245
48	Hg38_1_241870739_241874965_242033568_242040771_FF	OBD183-1249
49	Hg38_5_76400222_76402838_76572657_76583168_RR	OBD183-129
50	Hg38_15_34886920_34889054_34974237_34980574_FF	OBD183-1253
51	Hg38_11_59844932_59849082_59873751_59881156_FF	OBD183-033
52	Hg38_2_68140822_68144419_68359452_68365969_FR	OBD183-145
53	Hg38_2_223296739_223307566_223446116_223450606_FF	OBD183-229
54	Hg38_3_2993519_3002201_3121830_3126033_FF	OBD183-125
55	Hg38_8_47239740_47247017_47283075_47288879_FR	OBD183-369
56	Hg38_19_55428737_55436084_55609240_55610480_RR	OBD183-221
57	Hg38_19_50907981_50915866_50961391_50964466_RR	OBD183-225
58	Hg38_6_13822111_13826619_14070076_14075830_RF	OBD183-1257
59	Hg38_2_215168332_215174922_215339857_215344488_FF	OBD183-153
60	Hg38_9_83691585_83699524_83785514_83789572_FF	OBD183-089

61	Hg38_5_76572657_76583168_76717099_76725306_RF	OBD183-201
62	Hg38_1_27966549_27971202_28029814_28033207_FR	OBD183-1261
63	Hg38_2_227820023_227824564_227868226_227874758_RR	OBD183-197
64	Hg38_12_25200007_25206998_25256673_25260057_FR	OBD183-061
65	Hg38_7_66298919_66305803_66392051_66398673_FF	OBD183-1265
66	Hg38_10_67952694_67960415_68133244_68143089_FR	OBD183-309
67	Hg38_11_78974904_78976508_79134716_79152601_RF	OBD183-345
68	Hg38_16_20348272_20352389_20445721_20457266_RR	OBD183-297
69	Hg38_4_70243444_70255254_70475197_70476584_FF	OBD183-045
70	Hg38_12_45013447_45019401_45077155_45087147_FF	OBD183-1269
71	Hg38_16_12325962_12334419_12372790_12375829_FF	OBD183-1273
72	Hg38_17_39781052_39789227_39819888_39822803_RR	OBD183-265
73	Hg38_3_157551093_157568769_157606016_157614360_FF	OBD183-1277
74	Hg38_20_32234511_32238066_32285519_32290180_FF	OBD183-177
75	Hg38_5_139327785_139331530_139355652_139356681_FF	OBD183-133
76	Hg38_6_13822111_13826619_14011144_14016925_RF	OBD183-1281
77	Hg38_5_55874716_55883166_56069488_56074299_FR	OBD183-1285
78	Hg38_1_109359719_109366704_109611657_109614647_RF	OBD183-1289
79	Hg38_19_50732808_50735232_50961391_50964466_RR	OBD183-1293
80	Hg38_8_55800026_55805370_55942582_55947045_FF	OBD183-1297
81	Hg38_11_93115381_93124900_93228754_93237221_FR	OBD183-249
82	Hg38_X_70952076_70955538_71213839_71218089_FF	OBD183-1301
83	Hg38_11_93057516_93069988_93228754_93237221_FR	OBD183-1305
84	Hg38_5_76572657_76583168_76637173_76639966_RF	OBD183-157
85	Hg38_20_4763308_4769930_4885862_4890450_FF	OBD183-1309
86	Hg38_3_105278351_105281788_105425156_105431103_RF	OBD183-305
87	Hg38_19_42642158_42648993_42697457_42701566_RR	OBD183-049
88	Hg38_5_76400222_76402838_76572657_76583168_FR	OBD183-209
89	Hg38_2_223203554_223212132_223446116_223450606_FF	OBD183-317
90	Hg38_19_38895868_38902769_39089148_39091382_FR	OBD183-1313
91	Hg38_1_17044824_17050263_17192218_17198113_FF	OBD183-1317
92	Hg38_5_76420596_76423340_76572657_76583168_FR	OBD183-1321
93	Hg38_20_34791262_34795203_34932162_34933974_FF	OBD183-1325
94	Hg38_12_8119443_8124985_8341969_8343630_FF	OBD183-1329
95	Hg38_17_1287026_1289930_1411117_1412617_FR	OBD183-241
96	Hg38_1_109359719_109366704_109385998_109391476_RF	OBD183-1333
97	Hg38_1_187499122_187506399_187600952_187612332_FF	OBD183-1337
98	Hg38_11_72469497_72474813_72726299_72730494_FF	OBD183-109
99	Hg38_15_34813171_34816916_34974237_34980574_FF	OBD183-103
100	Hg38_12_32741504_32743146_32986666_32993216_RF	OBD183-009

101	Hg38_8_30141432_30150688_30174555_30176773_FR	OBD183-121
102	Hg38_12_8705594_8710071_8956666_8971971_RR	OBD183-1341
103	Hg38_4_146421995_146434783_146576248_146581867_RR	OBD183-017
104	Hg38_20_31418840_31431664_31617243_31621976_RR	OBD183-213
105	Hg38_5_76380998_76384783_76572657_76583168_FR	OBD183-169
106	Hg38_1_150618429_150622168_150754333_150760976_FF	OBD183-1345
107	Hg38_8_47283075_47288879_47486518_47496230_RF	OBD183-361
108	Hg38_8_47250090_47257109_47283075_47288879_FR	OBD183-1349
109	Hg38_20_46117565_46123196_46312844_46316630_FF	OBD183-393
110	Hg38_11_59836753_59842056_59873751_59881156_FF	OBD183-173
111	Hg38_17_75812204_75816321_75950756_75954014_FF	OBD183-333
112	Hg38_19_51712234_51719472_51826457_51831790_RF	OBD183-365
113	Hg38_4_146576248_146581867_146648355_146653240_RF	OBD183-1353
114	Hg38_4_151824476_151828586_151939544_151951330_RF	OBD183-1357
115	Hg38_6_136360365_136366092_136470425_136479842_RF	OBD183-1361
116	Hg38_3_10094056_10097375_10166863_10171451_RR	OBD183-373
117	Hg38_3_30527627_30532055_30652453_30660274_FR	OBD183-005
118	Hg38_2_74566692_74568044_74592023_74597081_FR	OBD183-313
119	Hg38_7_29859712_29867302_30016613_30019069_RR	OBD183-1365
120	Hg38_10_26740932_26742560_26959699_26967983_RR	OBD183-1369

表1.a6

	巢式PCR引子集		
編號	引子序列	引子ID	引子序列
1	GCTGCCCTGAAAATGGGAGTCTG	OBD183-263	CTCTCTCCCTTCAGCACAGCCAC
2	TGCCCTGAAAATGGGAGTCTGAGTTA	OBD183-191	GGATGAATGTGACGCTTTCGTTCCCC
3	GAATGCTTCTGGAACACTTCTTCAAG	OBD183-015	CTGTCCCATCTGCCTAAAACCGTTGG
4	GCACACAGTAAGCACGCAATAAAATG	OBD183-323	GGATAAGCCACAAGGCAACTGGTCTG
5	GAAGGTGGCATTCTCTATTGTGTCCA	OBD183-143	ACTGCGGAACTTCAAAGGTCAGGTGC
6	GGGTGACCGAGTGAGATGATGTC	OBD183-097	ACCCTGTAGTCCTGGGCTCAAGAGAT
7	GAGGAACCACCAGGCTTTGGAGC	OBD183-1171	GGTTGGGTTTTCTCAATAATCCATAG
8	AGGGTGAGGGTATGTGGGTAGTG	OBD183-271	CAGCCAGCAGAGACAGGAAGTGC
9	GAGAGTTATTCCTCAAGTGCTCCCAC	OBD183-295	CAGAACACAGTGAACAACCAGGCATT

10	ATTCTAAGTTTTCTCTCCCACCCC	OBD183-027	GAACAGGGATGGGCAGAAGCAGAAAA
11	CAGGGCTACAGATGCTGGCAAAGTTG	OBD183-235	CACAAGGCAACTGGTCTGAATGTTTC
12	CTCTGGCATTGGTCAAGGTCAAAGTA	OBD183-303	ATAGGGCTGGAGAGGAGTAGGCAGAT
13	AGAGCGCACGGAGATCACCGAGCGA	OBD183-1203	GAGGTACTGGAGCCGAGAGGTAAC
14	TCTATCAGATCGGCGACCATTTGT	OBD183-1207	TACGATGCCGCTAAGAACCTCTC
15	GAAGGAAGGTGACTTGCTTGCCCAAC	OBD183-391	ATGAAATCACACCCAAGTCCCTCACT
16	GGTCGTCGCTGACGTTTACACTC	OBD183-1211	TAGTCTCATTATAATCGTTCGCTA
17	GGGAGGAAGACTGTAGTTGGAGACAT	OBD183-383	TGGAGGGCTTGCTATGGTCTGAATGT
18	AGGAGCCTCTGGAGCAAGGTCAG	OBD183-031	GCCATCCCCTACACAGGTTCTCA
19	GTAATCAAGACAGTGCTATGCTGGCA	OBD183-073	CCTGACCCACCAAGACTGAACCA
20	TTCAGGGATTGACCAACACCGGAA	OBD183-1215	AACATCTCACTTGAAGTAATGTAT
21	CTTTACTCTTATGCTCTGCTCTGTGC	OBD183-059	AAACACAGATGAGTTCGGGCGTGGTG
22	TAGGCTGTCCTCCTCCTGTGCCA	OBD183-207	TGGAGACCCCAGGCTAATACAGC
23	GATGGGCTGAGGTGGAGTCTACC	OBD183-1131	CCGCCCATCTGTAAGCCCATCTC
24	TTACCTCAGACATAGAAAGTGACTGC	OBD183-247	GCCACAAGGCAACTGGTCTGAATGTT
25	TCTGTCTTGCTCGTGATAGTAGTTGG	OBD183-067	GTAGGCGTTCATCTTCACGGTAAGGC
26	CCTCAAATCTTGTCGGGAGTTCCTCA	OBD183-275	ACTGTGACCAAAGGAAGGAAAGCCAT
27	GCAACCCCACTGAATGAAACGGACAC	OBD183-255	CACAAGGCAACTGGTCTGAATGTTTC
28	GGTCCCAGAGATGTTGACAGCCTG	OBD183-043	GCCATCCCCTACACAGGTTCTCA
29	GAGTTCTACCTAAGTCAGAGGAGGAA	OBD183-283	ATAGGGCTGGAGAGGAGTAGGCAGAT
30	GGCTCTTGCTCTGCTATGGGTTG	OBD183-055	GGCGATGCCCAGCAAGAGTGAAG
31	TGTTCCATTGTAGACTTCTCGGAGGC	OBD183-387	TGGAGGGCTTGCTATGGTCTGAATGT
32	CCCCTCCCTCATTCCTACC	OBD183-187	GGCGATGCCCAGCAAGAGTG

	ATCA		AAG
33	GTGCCACCCTGGGCTGGATGATT	OBD183-081	GCCTCTGGTGCCCTTTTGGGTTG
34	ACGACAGAGTCCGTGCACCTACCA	OBD183-1219	CTGACGCTGCAAAATTTGCAACCAG
35	AACCTCTTTAGTCTAAGTTCAGACT	OBD183-1223	GCAGTCTTCGCGGTAGGTCCTAGTG
36	AGTTGGAAGTTTGTCTAGATCTCAG	OBD183-1227	AGATATCTTTGATGTCGTGATTGG
37	ATTTTGTCACTAGAGGACGCACGCT	OBD183-1231	CTCGAGAGGAGGAGACGTCAGTCC
38	TCAAGTGACCATTGTGACCACCGC	OBD183-399	GGTGGAGGGCTTGCTATGGTCTG
39	CGCATTCTTTTGCCAACACCACATCA	OBD183-239	CTGACCCAGGAAAACCACCCTCATTC
40	AAGGACCCTTGGCCCTCCACCCTT	OBD183-1235	AGGCAGTGTATACTCTTCCATAAA
41	GCCCTCTACTTACCAACTTCTGCCTT	OBD183-139	GCATTCCTGATTGCCTGATTTCAAGT
42	TAGGCAGAACGCTTTGAGAGAAGTAT	OBD183-355	GTGGAGGGCTTGCTATGGTCTGAATG
43	TCAGTCACCCCATCCAGCCTCAT	OBD183-351	TAAGAGGACCTACGCACCCGCAG
44	TCTGTTGCGGGTCTCTTGAGGGC	OBD183-343	TAGTGAAGCCAGGTCCAGGAGCA
45	CGGGCTATTAGTTATGAGGTCCGAA	OBD183-1239	CCGTTACTGTTGGTCGTAGAGCCCA
46	GATTGAAAAAGGTGAGGGAACTCGG	OBD183-1243	GAACGGGTTGGCCAGATGTGCGACA
47	CCGAACGGGAAAGACGGACATCTAG	OBD183-1247	ATATCGCTTAGTCGCTCTTGGGCCG
48	GCAACCTGACCACGGTTGCGCGTCC	OBD183-1251	CGGTGCGCTACCTTGCAGGAATTGA
49	TTACTTTGCCATCTGATTGTGCTTGC	OBD183-131	GACCTCCAGCGAGACCACTCCTAAAT
50	GACCGTCCGTTAATTTCCCTTGCAT	OBD183-1255	AACCGCTCTCTTAGAAGAGAGACAG
51	AGGGAAAGAACTTGGTTTACTGCTGC	OBD183-035	GAGGTGGAGGTGGATTTGCTCGTATG
52	CAGAGGAAACCATCATTGTTAGTAGC	OBD183-147	CCCAGAACAGAGAAAGGGCATTAGGG
53	GGTGGTGTGGGTGTCATTAGTAAACT	OBD183-231	CTGACCCAGGAAAACCACCCTCATTC
54	ACTTCTTTCTCTCTCTGCTGACTGGG	OBD183-127	GGGCTGAAAAGTTTGGGAAGAACAGG

55	CTTGTCCTGTTCCCAGTTTCTGAGGG	OBD183-371	TTACAATCGCCTCAAAGTGCTCAAGC
56	GCCTCCCTCCTCATCACTTCCTC	OBD183-223	CCAGCCCAGCACTCTTGTAACTC
57	CCTCCACCCAACAGAAAATCCTCTTA	OBD183-227	AGACACAGCCAGCAGAGACAGGAAGT
58	ATAGCTTCTTACCGGTGCGCCACCG	OBD183-1259	TAGGCAGTACGATCGCACGCCCCAT
59	CCTAAGGTGAGTAATGTTGACTGGCT	OBD183-155	CACCTGTTGTAATCCTGGCACTCTGG
60	CCTGGGCTCAACCTTGCTGGACT	OBD183-093	GGGTGACCGAGTGAGATGATGTC
61	TCACCCCTCTGCTTCCAGGACAG	OBD183-203	CCTCCAGCGAGACCACTCCTAAA
62	GTGAACGATTGGTAAACCCAGTGTC	OBD183-1263	CTGTGAGCGACAAAAGCTTAAATGG
63	TTTACTGTCTTGAAGGAGGCAGGGTT	OBD183-199	GCACTGAAGAGAACACAGCAAAGCCG
64	GTCCTAAAAGAATCACAGTTATGCCA	OBD183-063	GCAGCGAAGAAGTTGAGAAGTGGACA
65	GAAATACGCGCCCATAACTTGGTGC	OBD183-1267	GAATACGGGTCGTAGCAATGTTCGT
66	CCCTGTGTGTTTCTTCCCTTGGCTGA	OBD183-311	CCCACAAAACTTGACTCTCTTCCATC
67	AGAGGTTCATCGTCTCCAGGTCATAG	OBD183-347	TTCACACAGAGAGGTTGCCTGGATGT
68	TGTCTGTCTGTCCCTGTGACCCT	OBD183-299	CAACTCACCCAGAGACCCCTTGC
69	CCAGGTAGAAGTGGTTTGTTACACAT	OBD183-047	CTCCCTCAAATCCAGACACCTAAAGA
70	CTGACTATGATCTACATATTACAGG	OBD183-1271	CGGTACGTCTGCTTTGGTCAGCCTC
71	TAATGGCTCGTAAGATAGTGCAGCC	OBD183-1275	GCTGGTGATCACTCGATGACCTCGG
72	GTCTTGTGGCTGAAGTGCCCGTT	OBD183-267	CTCTCCTTCCAGCCTTCTTGGGC
73	CTCCCCATTGCAACTACGGGGATTC	OBD183-1279	TTGGAGAGCCAGCTGCGTTCGCTAA
74	GTTTTCCCTGTTGGTATGTAGCCTGG	OBD183-179	ACTACGAATGATAGGCTGGGCACAGT
75	CTTCAGTGTTTCCTTTCAGTGATGGC	OBD183-135	ATGACATTTCGGGCTGGGCACGG
76	TGTGAGGACAGTGTAGTATTAGCAA	OBD183-1283	ACGATAAGTCCCGAACTGGTTGTGA
77	CCTAACGAAAAGTGAACT	OBD183-1287	TCGAATGCAGTGATCTCCCAG

	TCATAAT		GTGC
78	ACGTGCTGTCCCACGCAC ATGGTAG	OBD183-1291	GAATCAAAAATACTAGGTAA CTAGA
79	ATTTGGACAAAATTGAAT GGAGTCT	OBD183-1295	GGATTTGCGACGTTCTAAGCG TTGG
80	GATCAACCTTCACACCGA TCTAGAA	OBD183-1299	TCCATGTGAATCGCCATCCAG GATC
81	GCCAATGAGCACCACATC ACTATTTG	OBD183-251	GGATAAGCCACAAGGCAACT GGTCTG
82	GCAACTCTCCTCCTCAGC AGTCTGG	OBD183-1303	TCCTAGCAACCGGGGGCTGG GAATC
83	TCTATGGAAACTACAGGA CTAACCT	OBD183-1307	TGTGACATGAGTCAAGATATT TGCT
84	GACTCATTTCAGTTGTTC AGAGGTCG	OBD183-159	GACCTCCAGCGAGACCACTC CTAAAT
85	CGGTAATCTATGCTCTAG GCATCTA	OBD183-1311	AGGACTCGTGTCAACGCGCA GGCTT
86	GCACAATGCCAGAAACAT AGTAGACG	OBD183-307	GGGAAGAATGAATGACGCCG AAGGAC
87	GCCCAGGACATACCACAC ACCAA	OBD183-051	GCCCTCACTAAAGCCCACAG CGT
88	CCTCCAGCACACACACAC TCAGT	OBD183-211	GACCTCCAGCGAGACCACTC CTA
89	TTAGAATGATAGTTACCT GAGACCAG	OBD183-319	CCCAGGAAAACCACCCTCAT TCAAAC
90	TGCGAGACAATGCTACCT TACCGGT	OBD183-1315	CATTCCCTCATCACAATTGAA CTAA
91	CGGAACTCGATCGGTTGA ACTCTAT	OBD183-1319	AGGGCGCGAGACGTATTCCC CGGTT
92	CACGCCTGGTCTTCGAAG TTAGCAC	OBD183-1323	GCTGCTTGGGACCATAAAAC CTCAT
93	ATCGAGCGGGCAATATGT ACATATT	OBD183-1327	TCACCGCGGAACCCGACTAT GCGAC
94	TACCTCTACAATGGATGC GCAAAAA	OBD183-1331	TGGACGGCCTATTTACCGAG AGCTG
95	GGAAGGGCACCTCCACTC ATCCA	OBD183-243	CTGGCTGTCATCCAACCACCA CT
96	TTCGAAGGCTGGTTGAAT ACATGGC	OBD183-1335	AGAAGATTGAGGTGTCCTAA ACTTA
97	CGCGGCCATAACACCTTA GCCGTCT	OBD183-1339	CGGGGGAATAAGTGACCTAT GCACC
98	TATGTGGACCTGATGGGC ACCCC	OBD183-1091	TGCTATTATCTGGTGACTGGA CTGGG
99	TTTGAAAAGACCGTCGGG TGCGG	OBD183-1031	TGAAGTGGCATCTCTCTCCCG CC

100	CACAAGAAAATAAGTCTCCCAACCTG	OBD183-011	TGACTAAAATGTTATGTGGTGCGTGA
101	GGGTGTTGCGAGCAGCCTGAATG	OBD183-123	GGGCGATAATGCTGGAGACACAG
102	AGACGCCGCTTGCGATTTCGACCAA	OBD183-1343	CAGCGGGAACGGCTGTGCAGTCACA
103	GACTTTGTATGCTTGGCTCTTTTCAA	OBD183-019	CTGCGTGAAGATTGGGAAAATACTCT
104	TGGACAGAGCACCTCCTGATAGC	OBD183-215	CAGTGAGATGATGGGCACCAGGG
105	CTCAGTAGTGGCTCTCCTTCCCC	OBD183-171	CCTCCAGCGAGACCACTCCTAAA
106	CCGCTGTGTAGCGGACAGTCTGAGC	OBD183-1347	TACCCTCTCAAGCACGAGATCTACA
107	CTTCTTGCTTTTCAATCAGGATGCCT	OBD183-363	CCTCCATCTCTTGCCTTCTCCTTAGG
108	GGGCGGGGTAGAAGCCGTCGCTTCG	OBD183-1351	GGTCCATGCGGGGGGTAAAACCCTG
109	TTTCTGATACCATCTGCGAGCCCTGC	OBD183-395	AGTCAGGGAAATAACTCACTGGGAAG
110	CAAGGTGGTCCCCGAGTTGCCAT	OBD183-175	GAGGTGGAGGTGGATTTGCTCGT
111	CCAAGATACTGCCCTGGGTCTCC	OBD183-335	CCCCACCCTGACCAACTGAATCA
112	TCTGGCTTTTGCCTGTCCTTCTGATG	OBD183-367	CCACTCTTGACCTCAGTTTCCCTGTA
113	TTTAAGAGGTCCGGGCAGCATACGC	OBD183-1355	TGTGGTTTATGTGCTACTGTGGAGA
114	GCGGCACCCATCTCTCTTCATTCGC	OBD183-1359	GGGTTTGTGAATCTAGGAGCACAAA
115	TTATTGTGAACGTTCGAAAGCACAA	OBD183-1363	AAAGCGGCGCACTTCAGGCATAAAA
116	GGCAGAATAGTCTCATCCAGCCC	OBD183-375	TGAAGCCAGGTCCAGGAGCAGTG
117	GGTTTCACAGTATGGATTTGGTGTTC	OBD183-007	GCCTGGGTATTCTACTGTCAGAGATT
118	CATTTACGGGAGTGGTGGACAACACA	OBD183-315	TTAGGTCTGGGCTCAGTGACTTATGC
119	GGATGGATTTTTGACAATCCCCGAT	OBD183-1367	AATGCTAGGGAGCAATAAACATAAC
120	GTCCAAGCTATGGTCCCTTAACAGC	OBD183-1371	CATCCACAGTGAATTGATCCGAAGG

表1.a7

編號	探針	基因	RP
121	Hg38_14_94590755_94595046_94660913_94670434_FF	SERPINA3	51602.36278
122	Hg38_2_68146585_68154467_68359452_68365969_RR	PLEK	60673.0528
123	Hg38_19_29696989_29701188_29727590_29730932_FF	PLEKHF1	52817.5742
124	Hg38_10_67996987_68002098_68133244_68143089_FR	SIRT1	65629.85778
125	Hg38_3_172498977_172504898_172612668_172616740_RR	TNFSF10	58221.03427
126	Hg38_11_66660876_66666332_66795521_66799004_FR	SPTBN2	57312.99458
127	Hg38_1_11722709_11729599_11945928_11948525_FF	NPPA	56411.9319
128	Hg38_12_69485433_69494790_69582845_69586465_FF	CCT2	57383.41886
129	Hg38_6_92733887_92741450_92775882_92789490_FF	BACH2	59527.59812
130	Hg38_1_64986326_64990105_65229466_65234378_RF	JAK1	63746.32604
131	Hg38_9_83554932_83574455_83691585_83699524_RF	UBQLN1	61891.82036
132	Hg38_19_50878674_50885130_50961391_50964466_FR	KLK5	62845.36841
133	Hg38_12_8849992_8853563_8956666_8971971_RR	KLRG1	62618.39393
134	Hg38_13_27943964_27948276_28172854_28181281_RR	FLT3	59041.48761
135	Hg38_5_31659980_31666153_31910749_31916612_RR	DROSHA	59449.15028
136	Hg38_3_2897600_2903984_3121830_3126033_FF	IL5RA	57800.99656
137	Hg38_3_170416234_170418115_170607532_170615844_RR	SKIL	63920.31015
138	Hg38_18_55916670_55920381_56075450_56084543_FR	TCF4	64853.46274
139	Hg38_5_76572657_76583168_76698020_76702533_RF	IQGAP2	57619.86752
140	Hg38_12_8913809_8922295_8956666_8971971_RR	KLRG1	61465.60317
141	Hg38_5_74537627_74543794_74656276_74660840_RF	HEXB	62777.03507
142	Hg38_7_37143709_37150477_37190622_37192292_FF	ELMO1	58975.8291
143	Hg38_9_131690419_131696896_131751071_131753768_FR	RAPGEF1	56194.47425
144	Hg38_6_26425345_26428181_26579344_26586907_RR	BTN1A1	61428.23451
145	Hg38_22_28560976_28565084_28753634_28758538_FF	TTC28	62272.87774
146	Hg38_3_187141583_187148120_187202075_187212711_RF	MASP1	68339.73699
147	Hg38_1_193519461_193528788_193673926_193687017_FR	CDC73	59191.22135
148	Hg38_4_154421614_154428471_154600623_154609665_RF	FGA	60226.98349
149	Hg38_16_75703703_75711017_75770470_75776868_RF	KARS	64545.47619
150	Hg38_10_101411213_101417434_101602840_101605496_RF	POLL	57537.34386
151	Hg38_19_7668688_7670794_7738421_7741267_FR	CD209	68536.88075
152	Hg38_2_223262711_223267419_223446116_223450606_FF	AP1S3	64453.33777
153	Hg38_22_25253412_25258650_25482038_25486782_FR	LRP5L	62341.8788
154	Hg38_2_68188547_68193452_68359452_68365969_FR	PLEK	61203.76528
155	Hg38_2_68188547_68193452_68359452_68365969_RR	PLEK	71929.28683
156	Hg38_1_229073105_229082983_229284318_229294264_FR	RAB4A	64881.66358
157	Hg38_9_83554932_83574455_83691585_83699524_FF	UBQLN1	63600.61525
158	Hg38_22_25264413_25271942_25482038_25486782_RR	LRP5L	59608.34156
159	Hg38_1_99618648_99629858_99759006_99763111_RF	AGL	62129.00664

160	Hg38_18_55921930_55924182_56075450_56084543_FR	TCF4	64843.45614
161	Hg38_17_74584319_74586652_74671518_74675232_FF	CD300E	62299.89556
162	Hg38_1_109359719_109366704_109566782_109570200_RF	PSMA5	61137.98638
163	Hg38_1_27834284_27836433_28029814_28033207_RR	SMPDL3B	56542.18928
164	Hg38_5_76572657_76583168_76654480_76657126_RF	IQGAP2	54976.37824
165	Hg38_4_109733192_109734599_109791099_109801176_RF	CFI	62515.30852
166	Hg38_1_70054091_70068840_70318902_70321099_RR	LRRC7	66114.54819
167	Hg38_1_229261740_229263861_229284318_229294264_RR	RAB4A	66865.24279
168	Hg38_14_60530277_60542106_60741580_60746311_FF	SIX1	66165.21408
169	Hg38_11_93198707_93202947_93228754_93237221_FR	MTNR1B	37933.34162
170	Hg38_12_34029969_34035740_34074510_34080992_RF	PKP2	55267.19406
171	Hg38_3_192827117_192831683_192941417_192949607_FR	FGF12	62148.98347
172	Hg38_1_112145907_112153217_112230261_112242505_FR	WNT2B	7382.521556
173	Hg38_5_30065209_30068365_30144494_30156052_FR	DROSHA	29882.79129
174	Hg38_4_177311798_177314753_177426344_177434196_FF	AGA	22347.51822
175	Hg38_8_8573974_8579178_8694304_8696852_RR	MFHAS1	35948.26439
176	Hg38_19_15474784_15476319_15596057_15603844_RR	PGLYRP2	31090.69115
177	Hg38_3_57432399_57444809_57467336_57470926_FR	PDE12	26664.51749
178	Hg38_11_9685853_9690988_9860564_9866955_RF	SWAP70	36242.64198
179	Hg38_12_8803939_8810628_8956666_8971971_FR	KLRG1	36737.01892
180	Hg38_12_8725011_8729420_8956666_8971971_RR	KLRG1	33145.41837
181	Hg38_12_8729585_8733910_8956666_8971971_FR	KLRG1	35411.42703
182	Hg38_1_150313909_150318375_150517096_150519652_FF	ECM1	40526.16555
183	Hg38_8_129814184_129820472_129899083_129904705_RR	FAM49B	40190.71701
184	Hg38_4_70364253_70375913_70475197_70476584_FF	MUC7	39883.20945
185	Hg38_1_219996896_220002127_220133227_220135485_RR	EPRS	38850.69788
186	Hg38_2_85732323_85740233_85782915_85784976_RR	GNLY	41138.40803
187	Hg38_22_25482038_25486782_25521454_25528069_RF	LRP5L	40073.65698
188	Hg38_12_8895119_8900342_8956666_8971971_RR	KLRG1	39969.28595
189	Hg38_5_30065209_30068365_30144494_30156052_RR	DROSHA	41444.33551
190	Hg38_12_8956666_8971971_9003019_9010419_RF	KLRG1	36856.30955
191	Hg38_5_30097465_30100060_30144494_30156052_FR	DROSHA	40796.38683
192	Hg38_11_9564044_9569915_9685853_9690988_FR	SWAP70	39581.10269
193	Hg38_19_42510307_42515066_42619854_42637441_RF	CEACAM1	41746.83799
194	Hg38_3_158515927_158528644_158576893_158580745_FR	MLF1	40688.15116
195	Hg38_12_8895119_8900342_8956666_8971971_FR	KLRG1	41167.33264
196	Hg38_3_138618464_138621485_138761567_138764562_FF	PIK3CB	38579.83331
197	Hg38_7_29905017_29911792_30016613_30019069_RR	WIPF3	43551.56674
198	Hg38_3_48672113_48676996_48843153_48846436_FR	IP6K2	41154.59394
199	Hg38_1_193547269_193555526_193673926_193687017_FR	CDC73	42763.73552

200	Hg38_5_30144494_30156052_30253195_30260049_RF	DROSHA	44527.21156
201	Hg38_22_25264413_25271942_25482038_25486782_FR	LRP5L	42055.91212
202	Hg38_1_27797543_27806064_28029814_28033207_FR	SMPDL3B	42053.26541
203	Hg38_5_30055950_30065209_30144494_30156052_RR	DROSHA	39242.5488
204	Hg38_4_177265268_177272349_177426344_177434196_RF	AGA	44566.05845
205	Hg38_17_27573633_27580584_27705007_27714184_RR	LGALS9	44463.66765
206	Hg38_X_139896828_139900158_140013151_140020699_RF	ATP11C	42988.24933
207	Hg38_1_99460537_99469579_99708395_99714403_FF	AGL	42204.62547
208	Hg38_1_193673926_193687017_193723402_193725340_RF	CDC73	43424.86092
209	Hg38_12_56314794_56317802_56415250_56418662_FR	IL23A	45342.46649
210	Hg38_17_27705007_27714184_27819635_27822792_RF	LGALS9	43050.25058
211	Hg38_1_99641071_99649469_99708395_99714403_FF	AGL	45766.87757
212	Hg38_1_35174790_35177903_35287825_35293685_FR	SFPQ	45003.4861
213	Hg38_5_30008006_30016904_30144494_30156052_RR	DROSHA	44834.65227
214	Hg38_5_67178844_67182260_67213797_67219491_FR	CD180	47184.00069
215	Hg38_1_109359719_109366704_109565116_109566579_RF	PSMA5	49493.46698
216	Hg38_1_219983690_219989585_220133227_220135485_FR	EPRS	42918.44189
217	Hg38_11_78965087_78972317_79119884_79126654_RF	GAB2	49202.3045
218	Hg38_18_539296_550050_584723_586397_RF	COLEC12	50109.23772
219	Hg38_8_8694304_8696852_8726052_8731395_RF	MFHAS1	50973.66001
220	Hg38_1_193528788_193530846_193673926_193687017_RR	CDC73	48989.93916
221	Hg38_3_70749410_70755452_70897303_70900588_FR	FOXP1	42784.88768
222	Hg38_8_24010357_24021429_24161634_24170554_FR	ADAMDEC1	40591.79728
223	Hg38_3_158576893_158580745_158781885_158789582_RF	MLF1	52695.67794
224	Hg38_17_69164151_69180522_69430124_69435332_FR	MAP2K6	47636.4474
225	Hg38_11_65101566_65105117_65228515_65232564_FR	CAPN1	49851.89096
226	Hg38_8_24161634_24170554_24298873_24305051_RF	ADAMDEC1	39385.93102
227	Hg38_13_50104086_50113860_50155566_50162889_RF	TRIM13	49629.8881
228	Hg38_8_8634577_8639077_8694304_8696852_FR	MFHAS1	46854.06025
229	Hg38_8_24119510_24130040_24161634_24170554_FR	ADAMDEC1	41567.6576
230	Hg38_6_31710695_31717311_31846792_31848234_FR	C6orf48	52074.92239
231	Hg38_22_38808896_38820306_38970835_38973283_RF	APOBEC3A	50041.44307
232	Hg38_21_46072387_46079344_46279083_46281797_FF	MCM3AP	49734.38802
233	Hg38_3_105082976_105093952_105278351_105281788_FR	ALCAM	54246.45493
234	Hg38_22_38707803_38709080_38808896_38820306_RR	GTPBP1	48887.48828
235	Hg38_4_154421614_154428471_154574662_154583311_RF	FGA	48300.52211
236	Hg38_20_4736115_4737739_4885862_4890450_FF	RASSF2	52691.03985
237	Hg38_19_55395028_55396801_55609240_55610480_RR	SSC5D	55587.02385
238	Hg38_5_76475531_76481400_76572657_76583168_FR	IQGAP2	55578.78572
239	Hg38_4_163153577_163160533_163215420_163222992_FF	NPY5R	37333.89774

240	Hg38_X_2456239_2461258_2530520_2531841_FR	CD99	51560.88544

表1.b1

編號	FC:(1類/2類)	pfp	P值	CCS
121	1.186276015	0.000899575	0.000844013	免疫
122	1.186160032	0.000270451	0.000179402	免疫
123	1.186098691	0.00093254	0.000880427	免疫
124	1.185853274	0.000190318	0.0000399446884096558	免疫
125	1.18551634	0.000349576	0.000274843	免疫
126	1.184920048	0.000436269	0.000370491	免疫
127	1.184745946	0.000561947	0.0005041	免疫
128	1.184546219	0.000320976	0.000244508	免疫
129	1.1845323	0.000327812	0.000252608	免疫
130	1.184035394	0.000190318	0.0000540649644882250	免疫
131	1.183997916	0.000291919	0.000207777	免疫
132	1.183983245	0.000190318	0.0000526588772675101	免疫
133	1.183850689	0.000197577	0.0000904587822249505	免疫
134	1.183834593	0.000269965	0.000177859	免疫
135	1.183509166	0.000374731	0.000303169	免疫
136	1.183397205	0.000349576	0.000273026	免疫
137	1.183347956	0.000190318	0.00000984044353433239	免疫
138	1.183297504	0.000191193	0.0000822707196309685	免疫
139	1.182991993	0.000423881	0.000355312	免疫
140	1.182982506	0.000294063	0.000210766	免疫
141	1.182858758	0.000191193	0.0000817229491915916	免疫
142	1.18268215	0.003600958	0.003569185	免疫
143	1.182551034	0.00098659	0.000937261	免疫
144	1.182494488	0.000269965	0.000177167	免疫
145	1.182491457	0.000294063	0.000211778	免疫
146	1.182489201	0.000190318	0.00000942584369787580	免疫
147	1.182342728	0.000456106	0.000393056	免疫
148	1.182263907	0.000459663	0.000397474	免疫
149	1.182179987	0.000190318	0.0000646827516769009	免疫
150	1.181917431	0.001090883	0.001042756	免疫
151	1.181787026	0.000190318	0.0000271915536302691	免疫
152	1.181714874	0.000225914	0.000121603	免疫
153	1.181692991	0.000241232	0.000147415	免疫

154	1.181539128	0.000251226	0.000156647	免疫
155	1.181443607	0.000190318	0.0000187625649334078	免疫
156	1.181393821	0.000190318	0.0000380424235684853	免疫
157	1.181132678	0.000267133	0.000171279	免疫
158	1.181117543	0.000445143	0.000382299	免疫
159	1.181064073	0.000374731	0.000304194	免疫
160	1.180874194	0.000267643	0.000172394	免疫
161	1.180816886	0.000294308	0.00021294	免疫
162	1.180545458	0.000310163	0.000235359	免疫
163	1.180462828	0.00053371	0.000475629	免疫
164	1.180229999	0.001162913	0.001115028	免疫
165	1.180118172	0.000295776	0.000218437	免疫
166	1.180035485	0.000190318	0.00000529624472957508	免疫
167	1.180012151	0.000190318	0.0000369224734285105	免疫
168	1.179979201	0.000190318	0.0000513943071949674	免疫
169	1.231473592	0.000190318	0.0000442795046870757	心臟
170	1.185406719	0.000498619	0.000439958	心臟
171	1.182511977	0.000222743	0.000118578	心臟
172	1.407050346	0.004706404	0.004692561	免疫
173	1.316408041	0.000873288	0.000814213	免疫
174	1.288792142	0.000190585	0.0000774165718372774	免疫
175	1.257269632	0.002829576	0.002779642	免疫
176	1.254791316	0.000190318	0.00000226274582317379	免疫
177	1.254616035	0.000415275	0.000345656	免疫
178	1.238026952	0.000190318	0.0000154626195550073	免疫
179	1.237777926	0.000190318	0.0000194526020666391	免疫
180	1.234793924	0.000566158	0.000509542	免疫
181	1.233163004	0.000270694	0.000186341	免疫
182	1.226641769	0.000190318	0.0000333056536465978	免疫
183	1.225950683	0.000191193	0.0000817422692296585	免疫
184	1.224948599	0.000190318	0.00000645290408133584	免疫
185	1.224615055	0.000197577	0.0000889173516011892	免疫
186	1.224596817	0.000190585	0.0000764443109650074	免疫
187	1.223630226	0.000228221	0.000125122	免疫
188	1.223520931	0.000274554	0.000192995	免疫
189	1.222306449	0.000190585	0.0000705946681282379	免疫
190	1.222262167	0.000537737	0.0004808	免疫

191	1.222169265	0.000190585	0.0000757638297022172	免疫
192	1.221529554	0.000205013	0.000102709	免疫
193	1.221272906	0.000190318	0.0000599671783803023	免疫
194	1.221188551	0.000190585	0.0000744069649443759	免疫
195	1.220281543	0.000225914	0.00012208	免疫
196	1.220202701	0.000477041	0.000416709	免疫
197	1.218733777	0.000191193	0.0000832253187595784	免疫
198	1.218608399	0.000190318	0.0000331236481858035	免疫
199	1.218463012	0.000190318	0.0000572618739883633	免疫
200	1.218446463	0.000190318	0.0000388974841025229	免疫
201	1.217980671	0.000270451	0.000180173	免疫
202	1.21732084	0.000190318	0.0000671169691534999	免疫
203	1.217307806	0.000349576	0.000275548	免疫
204	1.217145751	0.000266211	0.00016834	免疫
205	1.216632744	0.000190318	0.0000393869256653534	免疫
206	1.215123981	0.000236458	0.000138114	免疫
207	1.215110028	0.000295776	0.00021803	免疫
208	1.214128695	0.000190585	0.0000722446171868016	免疫
209	1.213994593	0.000190318	0.0000632827948599299	免疫
210	1.211680597	0.000239248	0.000142845	免疫
211	1.210787095	0.000241232	0.000146519	免疫
212	1.209605762	0.000266673	0.000169416	免疫
213	1.209227903	0.000241232	0.000147551	免疫
214	1.20869455	0.000190318	0.0000208852477395714	免疫
215	1.20814936	0.000190318	0.0000193974481193875	免疫
216	1.20795849	0.000416908	0.000348241	免疫
217	1.207439156	0.000190318	0.0000357234853459895	免疫
218	1.206960097	0.000190318	0.00000304807131114087	免疫
219	1.206874718	0.000190318	0.0000450805994957693	免疫
220	1.206787146	0.000190318	0.0000340624218010891	免疫
221	1.206542696	0.000646854	0.000591681	免疫
222	1.205959387	0.000841008	0.000781643	免疫
223	1.205560226	0.000190318	0.0000278556464488307	免疫
224	1.205304475	0.000205013	0.000102815	免疫
225	1.204318622	0.000197577	0.0000932258801300120	免疫
226	1.204255307	0.001260137	0.001215661	免疫
227	1.204213124	0.000190318	0.0000514895589988928	免疫

228	1.203802599	0.000370996	0.000298979	免疫
229	1.203738557	0.000667821	0.000614788	免疫
230	1.203390916	0.000190318	0.0000557816740020828	免疫
231	1.202416682	0.000190585	0.0000703711063906581	免疫
232	1.202330306	0.000322087	0.000246301	免疫
233	1.201814636	0.000190318	0.0000340316927535055	免疫
234	1.200186232	0.000294063	0.000211898	免疫
235	1.199963105	0.000445143	0.000380385	免疫
236	1.199818633	0.000190318	0.0000621785570704888	免疫
237	1.199815298	0.000190318	0.0000667804940774737	免疫
238	1.199650396	0.000190318	0.0000580280410854067	免疫
239	1.199628952	0.004213528	0.004188743	免疫
240	1.199599769	0.000235024	0.000134691	免疫

表1.b2

	探針序列	探針位置
編號	**60 mer**	**Chr**
121	TGATTCAAGCTTGATTCTGGAGCTTGAATCGAACTCCTGATCTTAGGTGATCCATCCACC	14
122	TTAGTTCTTAGATGCTTTGTCATATGCTTCGAACTCCCGACCTCCAGTGGAAGTTCACAC	2
123	TGGCTTTTTAGAAAAACATTTATTGTAATCGAACTCCTGACCACAAATTATCCACCAGAC	19
124	AATGCAAATAATCTCAAGGTCTACAGTTTCGAACTCCTGACCTTATGCAATCCACTTGCC	10
125	ATTCATGTTAGAACTACATGTAGACATTTCGATCTCGTGACCTCTTGATCCTCCCACCTC	3
126	GCCAAATCTTGGTCTTGATCTGTGCCAATCGAACTCCTGACCTCAGGTAATTAGCCCACC	11
127	AGGCACTGTGCCACTCATTTAGGACCCATCGAACTCCTGACCTCAGTGGATCATCAGACT	1
128	GCTTCTAGATTTTTGTTTTGTTTTGTTTTCGAACTCCTGACCTCAGTTCATCCGCCTACC	12
129	TTTTATTTCAATGATTGTATATTATTAGTCGAACTCCTGACTTTAAGTAATCTGCCCACC	6
130	GCCTTAACAACAACAAAATGGAGAGTTATCGAACTCCTGACTTCAGGTGACTCACCCACC	1
131	TTTTTATTTTTTTGTAGACAGGCTGGTCTCGAGGTATCACAAGTGAATGCTGCAAAATGA	9
132	GTTAGCCAGACATCCTTGATAGATATTATCGAACTCCTGACCCTAGGTGATCCTCCTGCT	19
133	AAGAGGAACTAACTAGTCACAAAGGCCATCGAACTCCTGACC	12

	TCACGTAATTCTCCCACC	
134	TTCTGCAGAAAAAGTGTCAACAATGTAGTCGAGACCAGCCTGAGGATCATAACAAAATCG	13
135	ATCCTCTGAGCTTTTGGTTCTTCTCAATTCGAACTCCTGACCTCAAGCTATCCATCTGCC	5
136	TGGATTAATAGATTAGGTCAGTAAAGAATCGAACTCCTGACCTCGTGTTCCCCAGGCCTC	3
137	CTCTTATGCCTCCATTAGAATTTGACATTCGATCTCCTGACTTCGTGATCTGTCCACCTT	3
138	AAATGTAAACTGAGTGTCTATTGTACACTCGAGACCAGCCTGAACAATATAGTGAGACCC	18
139	ATCATAGCTACTGAAGATGTAGGCATTTTCGAACTCCTGACTTCAGGAAATCTGCCCGTC	5
140	TTTGTCATTTCAGGGATTTGTGTGTGCTTCGAACTCCTGACCTCACGTAATTCTCCCACC	12
141	TGATCCCTGGGGATACACAAATTGCCATTCGAACTCCTGACCTCAGTCAATCTGCCCACC	5
142	AAAAAATTGTTAACTACATGATGGAAAATCGATCTCTTGACTTCATGATCCACCTGCCTT	7
143	CTATAATAACATTAACAGCTGAAATTTATCGAACTCCTGACCTCAGGTTACCCCCTGCCT	9
144	GCAATTTTCTTATAGTGCTTTGAGAACATCGAACTCCTAACCTCAAGTAATCCACACACT	6
145	CTGCCAAAAGTGAAGATCCCTACTATATTCGAACTCCTGACCTCAGGTAATCTATCCGCC	22
146	TGTCCCTTGCATGGGACACATTGTTTCATCGAACTCCTGACCTTTGGTCATCCACCTGCC	3
147	TTAGGCTTCTCTTCAGAGTTATCTCTGTTCGATCTCTTGACCTCGTACTCTGCCTGCCTT	1
148	AAACACAGTCCATCCATTTCCAGACCCATCGAACTCCTGACCTCAAAAAATCCACCACCT	4
149	CTTAACAAACCAATGATAAGTAATGAGATCGAACTCCTGGCCTCAGATGATACATCTGCT	16
150	TCAAGTTCATCTAGTGCAGCTCTTTTATTCGAACTCCTGACCTCAAGAAATCTACCTGCC	10
151	TTCCCCCAGTCCTCATAATGAGGCTTCATCGAGACCAGCCTAGCGAATGTGGTGAAACCT	19
152	ATTTGTTATTACCTCAATGAGAGCCTAGTCGAACTCCTGACCTACCTCAAGTGATCCATC	2
153	TTAAATTGACATTTGCCAAAGGCTCCACTCGATCTCCTGACCTCCATCATGTCCTCTCTT	22
154	GACTAAATACTCAGTATTTACAATCTAGTCGAACTCCCGACCTCCAGTGGAAGTTCACAC	2
155	CCTTTAGTACAGCGAGTAATAGATATATTCGAACTCCCGACCTCCAGTGGAAGTTCACAC	2
156	GTATTTTTTATAGATGTTCTCCATGAAGTCGAACTCCTGACTG	1

	AGGTGATCCATCCGCCT	
157	TATTTCATGGGTCACTGATAAGTTCCATTCGAGACCAGCCTGTCTACAAAAAAATAAAAA	9
158	GTCAATTGCAAGTTGTGACAAACCCACTTCGATCTCCTGACCTCCATCATGTCCTCTCTT	22
159	GAATTATTAGATTAAGAAGCAAAGGCACTCGATCTCTTGACCTCATGGTCTCCCACCTCA	1
160	CGGTTTATTCATTATTTAATACATCTCATCGAGACCAGCCTGAACAATATAGTGAGACCC	18
161	TCCCCAGGAACACCTGGAAGCTCAGGATTCGATCTCCTGACCTCATGATTCATCCTCCTT	17
162	ATTAACTATTTAGTACTACCCCTGATTATCGAACTCCTGACCTCAGGTAATCTTCCCACA	1
163	TTGTGGCAACTCAGCACACTTAACAACATCGAACTCCTGACCTCAGGAGTTCCACCCACC	1
164	CCTAGTATTGATAGAGGAAATATTAAATTCGAACTCCTGACTTCAGGAAATCTGCCCGTC	5
165	AACTTCAATAAAATATGTCATTTCAGTTTCGAACTCCTGACCTCAAGTCATTCCCCTGCC	4
166	ATACCTTAAGAGGAGAATTGATGGAATGTCGATCTCTTGACATCATGATCCACCTGCCTC	1
167	ACAGCATTGATACCCAGGGATTATTCATTCGAACTCCTGACTGAGGTGATCCATCCGCCT	1
168	TTAACAAGTGAAATAAAATAGTACCAATTCGAACTCCTGACCTCGTAATCTACCCGCCTC	14
169	TTATTAAGACAAATATCCAACAAAGTCATCGAACTCCTGACCTTGTAATCTGTCCACCTT	11
170	AACTATTGCTATAGCAATCAAATTGCTTTCGAACTCCTGACCTCAGGTAGTACACCCGTC	12
171	ATAGTGAAAAATATTCAAATTCAGACAATCGAACTCCTGACCTCAAGTTATCCAGCCGTC	3
172	AGGGGTCACTGTTGATTCTGGAGTGTTCTCGAGAAAAATACTTTTCTACAGATGTGTCCT	1
173	GACTTTTAACATTTGACTTAGAGAAGATTCGAACTCCTGACCTGATGATCCCCCTACTTG	5
174	CACTTTAAAATTATATTCTTTGATGACTTCGAACTCCTGACCGTTTCTACTAAAAATACA	4
175	AAGTATATTTTGTAGTCTTTGGTATGAATCGAGACCATCCTGGTCAACACTGTGAAAACC	8
176	GGAGTTTCATCATTTTATCAGGGTGGTCTCGAGGAATTTATCCATTTCTTCTAGATTTTC	19
177	ACTTTGGTTCATTTACATCTTTAATTGATCGAACTCCTGACCTCAGATCAGGTGATCTGC	3
178	CATTTCTTAAAAGAAGACATAAAAATGGTCGATCTCCTGATCTCGTGATCTACCTTCCTT	11
179	CACATCTAAACTCCTGAAATTCTTCTGTTCGAACTCCTGACCT	12

	CACGTAATTCTCCCACC	
180	CAAAAATACATTTATCAGAGCTAAAAAATCGAACTCCTGACC TCACGTAATTCTCCCACC	12
181	GATAGATGATAGGTGATTGTTAGATTGATCGAACTCCTGACC TCACGTAATTCTCCCACC	12
182	AGGGAGATTCCGTCTAAAAAAAAAAATGTCGAACTCCTGACC TTATGATCCATCCACCTC	1
183	CAAGACTCTGTCTCAAGCAAAAAAAAAATCGAACTCCTGACA CCTCAGGTGATCTACCTG	8
184	GAAAATCTAGAAGAAATGGACAAATTCCTCGAACTCCTGACC TCACATTCCTGTATTTTC	4
185	TAGAGTAGTCTCATCTTCTTATAAAACATCGAACTCCTGACCT CAGGATTTGCCAGCCTC	1
186	GGGAAAAGTTGCAAAAAAAAAAAAGCAATCGAACTCCTGAC CTCAACAGATCCTCCTGCT	2
187	AATGCCAACTTCAGATTTTAGTCTCCTTTCGATCTCCTGACCT CCATCATGTCCTCTCTT	22
188	TGTCATCTGTTCATACAATGCTAAAAATTCGAACTCCTGACCT CACGTAATTCTCCCACC	12
189	AATTAAAACATTTTGAAAAATGTAAGCATCGAACTCCTGACC TGATGATCCCCCTACTTG	5
190	GCATATTAATTTCAAGATAGCAGTCAATTCGAACTCCTGACCT CACGTAATTCTCCCACC	12
191	GGCTTTTGATTATTCACACAAGATATGATCGAACTCCTGACCT GATGATCCCCCTACTTG	5
192	TCTACACATTTATTGTGAACTTACCTCTTCGATCTCCTGATCTC GTGATCTACCTTCCTT	11
193	AATTTATGTTATAGCGATTACATCTAGATCGATCTCCTGACCT TGTGTTTCACCTGCCTT	19
194	TCTTCCATCTACAGAATTTTAATTAGAGTCGAACTCCTGATCT CGTGATATGCTGGCCTC	3
195	TAACTCATTTCAGCATTTCTTTTTTTTTTCGAACTCCTGACCTC ACGTAATTCTCCCACC	12
196	GTTGCTTTAAGTGACGGAGTCCACAAGATCGAACTCCTGACC TCAAGTAGTTCTTCCACC	3
197	TAGTATTCAGAAATGGGGAGATTATTGTTCGAACTCCTGACC TCAGAAGATTTGCCTGCC	7
198	AGTAGAGACCACTTTGACCAGGCTGGTCTCGAGGAATTTATC CATTTCTTCTAGATTTTC	3
199	CAGATAGGTAAGTTACTAAAGAGGAAAATCGATCTCTTGACC TCGTACTCTGCCTGCCTT	1
200	CATTCCATATCTATACCAATGTTTCACTTCGAACTCCTGACCT GATGATCCCCCTACTTG	5
201	AACACCAACTTCAGATTTTAGTCTGCTTTCGATCTCCTGACCT CCATCATGTCCTCTCTT	22
202	TCCCTGAGTTATGCAGCTCTTCCAAATGTCGAACTCCTGACCT	1

	CAGGAGTTCCACCCACC	
203	TTTATTCTTTCTTTGTGTTATAAGCAATTCGAACTCCTGACCTG ATGATCCCCCTACTTG	5
204	TGTATTTTTAGTAGAAACGGTCAGGAGTTCGATGGCATATAG TTGTACACTACAGTGATT	4
205	AGCTACCTTTCAGGGGAAATTATTTTTTTCGATCTCCTGACCT AGTGATTGGCCCTCCTC	17
206	TCATTAGTTGCCTGGAGACAAATTTGAGTCGAACTCCTGACCT CAAGGCCCAGTCAGCCT	X
207	TATTTATATTCCTTAATGATGTAACTTCTCGAGACCAGCCTGA CTGATATTGTGAAACCC	1
208	CAAAGGCTCTAGGTGGCTGATTAAAGCATCGATCTCTTGACC TCGTACTCTGCCTGCCTT	1
209	AAGAGGAAGTTATAGTTAATGGAGAGTTTCGATCTCCTGACC TTGTCATTCTCCCATCTC	12
210	AGGTGTAAAAAATTATAAAAGTATTAATTCGATCTCCTGACC TAGTGATTGGCCCTCCTC	17
211	ACTGAGGATACCAATGACTCCAGCATTCTCGAGACCAGCCTG ACTGATATTGTGAAACCC	1
212	ATCTTAGAAACGGTAAACATCTCAAATATCGAACTCCTGACC TCGCGGTCTACCAGCCTT	1
213	AAAATAAATTAATCCCAAACTTGGTTAGTCGAACTCCTGACC TGATGATCCCCCTACTTG	5
214	GACCTAAGGATTAAGAAGATTAATGGAGTCGATCTCCTGACA TCGTGATCTATCCGCCTC	5
215	GAATGAAATGTCATTCTTTTTTGTTTGTTCGAACTCCTGACCT CAGGTAATCTTCCCACA	1
216	TCACCCTATCCAATTTTTACTGCTACATTCGAACTCCTGACCT CAGGATTTGCCAGCCTC	1
217	TAATTTATACAAGTAGAAAAATTCTAGGTCGAACTCCTGACC TCAAAAGATCTGCTCGCT	11
218	GTCTTTTGCCATATTAGTCTGTCTGGTCTCGATGCAAAAATCC TCAATAAAATACTGGCA	18
219	CTAGCACCAAACTTCTCATTTCAGACTTTCGAGACCATCCTGG TCAACACTGTGAAAACC	8
220	TTCACAACTATTCACTGCAGAAAACAAGTCGATCTCTTGACCT CGTACTCTGCCTGCCTT	1
221	ACATCTTTTTGCTTTTTTGCATTTAGTGTCGAGGAGTATCTTTG TGATGTTCTCTGTATT	3
222	AGTAATAGACTTAAAGATGAAAAGTCATTCGATTTTAGATCT TTCCTGCTTTCTCTGGTA	8
223	TCCTGTTAAGCATATTATTGATGGGCTTTCGAACTCCTGATCT CGTGATATGCTGGCCTC	3
224	ATTGATTAAAAAAAAAGGGAAGACAACATCGAGACCAGCCT GTCCACCATGGTGGAACCC	17
225	CTCATAATTGGTTAACAATGAGGTTTTTTCGAACTCCTGACCT	11

	GAAGGGATCTGTCTGCC	
226	ATAAACCTTTATTTTAAAATTCTTCTTTTCGATTTTAGATCTTTCCTGCTTTCTCTGGTA	8
227	AAATTAATGGATATTTTCCTTTGAAGGGTCGAACTCCTGAGCTCAAGACCTCCCAAAGTG	13
228	CCATCCATAAGGTTTTTAGGAAAAAAACTCGAGACCATCCTGGTCAACACTGTGAAAACC	8
229	GTTTTGTCACAGTAATAAATCAATCAGTTCGATTTTAGATCTTTCCTGCTTTCTCTGGTA	8
230	TACTAAAAATTATTTTATAGAATGTCCCTCGAGACCAGCCTGGGTAATATTGCAAGACAC	6
231	TGAGATTTTGTCTCAAAAAAAAAAAAAGTCGAACTCCTGACCTCAGATGATTCATCTGCC	22
232	TTCAGGCCACGTGGTCCCAGATGTGAAGTCGAACTCCTGACCTCAGTGTTCCACGCACCT	21
233	CTTTAGAAGCTACTCTTTATATACTCGCTCGAGACCAGACTGGATAACAAGGCAAAACCC	3
234	ACACCATCACTTTTTCTTTTTGATATCATCGAACTCCTGACCTCAGATGATTCATCTGCC	22
235	AGCATAGATCATACTTAGTGAGAGGCTTTCGAACTCCTGACCTCAAAAAATCCACCACCT	4
236	AGCAGAAGAAAATAAGTGAAGTCTAACATCGAACTCATGACCTCAGGTTATCCTCCTGCC	20
237	TTTGCATATTGTGACTATCCAGAGGCATTCGAACTCCTGACTATAGTTGATCCACCCACC	19
238	CAATGTACAAAAAAAGTTTTTTTTTTTTTCGAACTCCTGACTTCAGGAAATCTGCCCGTC	5
239	TGCATTGTACATAGTTAGATCGCAGAGATCGAACTCCTGACCTCATCATTCACCCACCTC	4
240	ACACAAATAAAATAGGAGTCCGGTGACCTCGAGACCATCCTGGCTAATTTGGTGAAACCC	X

表1.b3

	探針位置			
編號	**開始1**	**結束1**	**開始2**	**結束2**
121	94595015	94595044	94670403	94670432
122	68146587	68146616	68359454	68359483
123	29701157	29701186	29730901	29730930
124	68002067	68002096	68133246	68133275
125	172498979	172499008	172612670	172612699
126	66666301	66666330	66795523	66795552
127	11729568	11729597	11948494	11948523
128	69494759	69494788	69586434	69586463
129	92741419	92741448	92789459	92789488
130	64986328	64986357	65234347	65234376

131	83554934	83554963	83699493	83699522
132	50885099	50885128	50961393	50961422
133	8849994	8850023	8956668	8956697
134	27943966	27943995	28172856	28172885
135	31659982	31660011	31910751	31910780
136	2903953	2903982	3126002	3126031
137	170416236	170416265	170607534	170607563
138	55920350	55920379	56075452	56075481
139	76572659	76572688	76702502	76702531
140	8913811	8913840	8956668	8956697
141	74537629	74537658	74660809	74660838
142	37150446	37150475	37192261	37192290
143	131696865	131696894	131751073	131751102
144	26425347	26425376	26579346	26579375
145	28565053	28565082	28758507	28758536
146	187141585	187141614	187212680	187212709
147	193528757	193528786	193673928	193673957
148	154421616	154421645	154609634	154609663
149	75703705	75703734	75776837	75776866
150	101411215	101411244	101605465	101605494
151	7670763	7670792	7738423	7738452
152	223267388	223267417	223450575	223450604
153	25258619	25258648	25482040	25482069
154	68193421	68193450	68359454	68359483
155	68188549	68188578	68359454	68359483
156	229082952	229082981	229284320	229284349
157	83574424	83574453	83699493	83699522
158	25264415	25264444	25482040	25482069
159	99618650	99618679	99763080	99763109
160	55924151	55924180	56075452	56075481
161	74586621	74586650	74675201	74675230
162	109359721	109359750	109570169	109570198
163	27834286	27834315	28029816	28029845
164	76572659	76572688	76657095	76657124
165	109733194	109733223	109801145	109801174
166	70054093	70054122	70318904	70318933
167	229261742	229261771	229284320	229284349
168	60542075	60542104	60746280	60746309
169	93202916	93202945	93228756	93228785
170	34029971	34030000	34080961	34080990
171	192831652	192831681	192941419	192941448
172	112153186	112153215	112230263	112230292
173	30068334	30068363	30144496	30144525

174	177314722	177314751	177434165	177434194
175	8573976	8574005	8694306	8694335
176	15474786	15474815	15596059	15596088
177	57444778	57444807	57467338	57467367
178	9685855	9685884	9866924	9866953
179	8810597	8810626	8956668	8956697
180	8725013	8725042	8956668	8956697
181	8733879	8733908	8956668	8956697
182	150318344	150318373	150519621	150519650
183	129814186	129814215	129899085	129899114
184	70375882	70375911	70476553	70476582
185	219996898	219996927	220133229	220133258
186	85732325	85732354	85782917	85782946
187	25482040	25482069	25528038	25528067
188	8895121	8895150	8956668	8956697
189	30065211	30065240	30144496	30144525
190	8956668	8956697	9010388	9010417
191	30100029	30100058	30144496	30144525
192	9569884	9569913	9685855	9685884
193	42510309	42510338	42637410	42637439
194	158528613	158528642	158576895	158576924
195	8900311	8900340	8956668	8956697
196	138621454	138621483	138764531	138764560
197	29905019	29905048	30016615	30016644
198	48676965	48676994	48843155	48843184
199	193555495	193555524	193673928	193673957
200	30144496	30144525	30260018	30260047
201	25271911	25271940	25482040	25482069
202	27806033	27806062	28029816	28029845
203	30055952	30055981	30144496	30144525
204	177265270	177265299	177434165	177434194
205	27573635	27573664	27705009	27705038
206	139896830	139896859	140020668	140020697
207	99469548	99469577	99714372	99714401
208	193673928	193673957	193725309	193725338
209	56317771	56317800	56415252	56415281
210	27705009	27705038	27822761	27822790
211	99649438	99649467	99714372	99714401
212	35177872	35177901	35287827	35287856
213	30008008	30008037	30144496	30144525
214	67182229	67182258	67213799	67213828
215	109359721	109359750	109566548	109566577
216	219989554	219989583	220133229	220133258

217	78965089	78965118	79126623	79126652
218	539298	539327	586366	586395
219	8694306	8694335	8731364	8731393
220	193528790	193528819	193673928	193673957
221	70755421	70755450	70897305	70897334
222	24021398	24021427	24161636	24161665
223	158576895	158576924	158789551	158789580
224	69180491	69180520	69430126	69430155
225	65105086	65105115	65228517	65228546
226	24161636	24161665	24305020	24305049
227	50104088	50104117	50162858	50162887
228	8639046	8639075	8694306	8694335
229	24130009	24130038	24161636	24161665
230	31717280	31717309	31846794	31846823
231	38808898	38808927	38973252	38973281
232	46079313	46079342	46281766	46281795
233	105093921	105093950	105278353	105278382
234	38707805	38707834	38808898	38808927
235	154421616	154421645	154583280	154583309
236	4737708	4737737	4890419	4890448
237	55395030	55395059	55609242	55609271
238	76481369	76481398	76572659	76572688
239	163160502	163160531	163222961	163222990
240	2461227	2461256	2530522	2530551

表1.b4

	4 kb序列位置				
編號	**Chr**	**開始1**	**結束1**	**開始2**	**結束2**
121	14	94591045	94595044	94666433	94670432
122	2	68146587	68150586	68359454	68363453
123	19	29697187	29701186	29726931	29730930
124	10	67998097	68002096	68133246	68137245
125	3	172498979	172502978	172612670	172616669
126	11	66662331	66666330	66795523	66799522
127	1	11725598	11729597	11944524	11948523
128	12	69490789	69494788	69582464	69586463
129	6	92737449	92741448	92785489	92789488
130	1	64986328	64990327	65230377	65234376
131	9	83554934	83558933	83695523	83699522
132	19	50881129	50885128	50961393	50965392
133	12	8849994	8853993	8956668	8960667
134	13	27943966	27947965	28172856	28176855
135	5	31659982	31663981	31910751	31914750

136	3	2899983	2903982	3122032	3126031
137	3	170416236	170420235	170607534	170611533
138	18	55916380	55920379	56075452	56079451
139	5	76572659	76576658	76698532	76702531
140	12	8913811	8917810	8956668	8960667
141	5	74537629	74541628	74656839	74660838
142	7	37146476	37150475	37188291	37192290
143	9	131692895	131696894	131751073	131755072
144	6	26425347	26429346	26579346	26583345
145	22	28561083	28565082	28754537	28758536
146	3	187141585	187145584	187208710	187212709
147	1	193524787	193528786	193673928	193677927
148	4	154421616	154425615	154605664	154609663
149	16	75703705	75707704	75772867	75776866
150	10	101411215	101415214	101601495	101605494
151	19	7666793	7670792	7738423	7742422
152	2	223263418	223267417	223446605	223450604
153	22	25254649	25258648	25482040	25486039
154	2	68189451	68193450	68359454	68363453
155	2	68188549	68192548	68359454	68363453
156	1	229078982	229082981	229284320	229288319
157	9	83570454	83574453	83695523	83699522
158	22	25264415	25268414	25482040	25486039
159	1	99618650	99622649	99759110	99763109
160	18	55920181	55924180	56075452	56079451
161	17	74582651	74586650	74671231	74675230
162	1	109359721	109363720	109566199	109570198
163	1	27834286	27838285	28029816	28033815
164	5	76572659	76576658	76653125	76657124
165	4	109733194	109737193	109797175	109801174
166	1	70054093	70058092	70318904	70322903
167	1	229261742	229265741	229284320	229288319
168	14	60538105	60542104	60742310	60746309
169	11	93198946	93202945	93228756	93232755
170	12	34029971	34033970	34076991	34080990
171	3	192827682	192831681	192941419	192945418
172	1	112149216	112153215	112230263	112234262
173	5	30064364	30068363	30144496	30148495
174	4	177310752	177314751	177430195	177434194
175	8	8573976	8577975	8694306	8698305
176	19	15474786	15478785	15596059	15600058
177	3	57440808	57444807	57467338	57471337
178	11	9685855	9689854	9862954	9866953

179	12	8806627	8810626	8956668	8960667
180	12	8725013	8729012	8956668	8960667
181	12	8729909	8733908	8956668	8960667
182	1	150314374	150318373	150515651	150519650
183	8	129814186	129818185	129899085	129903084
184	4	70371912	70375911	70472583	70476582
185	1	219996898	220000897	220133229	220137228
186	2	85732325	85736324	85782917	85786916
187	22	25482040	25486039	25524068	25528067
188	12	8895121	8899120	8956668	8960667
189	5	30065211	30069210	30144496	30148495
190	12	8956668	8960667	9006418	9010417
191	5	30096059	30100058	30144496	30148495
192	11	9565914	9569913	9685855	9689854
193	19	42510309	42514308	42633440	42637439
194	3	158524643	158528642	158576895	158580894
195	12	8896341	8900340	8956668	8960667
196	3	138617484	138621483	138760561	138764560
197	7	29905019	29909018	30016615	30020614
198	3	48672995	48676994	48843155	48847154
199	1	193551525	193555524	193673928	193677927
200	5	30144496	30148495	30256048	30260047
201	22	25267941	25271940	25482040	25486039
202	1	27802063	27806062	28029816	28033815
203	5	30055952	30059951	30144496	30148495
204	4	177265270	177269269	177430195	177434194
205	17	27573635	27577634	27705009	27709008
206	X	139896830	139900829	140016698	140020697
207	1	99465578	99469577	99710402	99714401
208	1	193673928	193677927	193721339	193725338
209	12	56313801	56317800	56415252	56419251
210	17	27705009	27709008	27818791	27822790
211	1	99645468	99649467	99710402	99714401
212	1	35173902	35177901	35287827	35291826
213	5	30008008	30012007	30144496	30148495
214	5	67178259	67182258	67213799	67217798
215	1	109359721	109363720	109562578	109566577
216	1	219985584	219989583	220133229	220137228
217	11	78965089	78969088	79122653	79126652
218	18	539298	543297	582396	586395
219	8	8694306	8698305	8727394	8731393
220	1	193528790	193532789	193673928	193677927
221	3	70751451	70755450	70897305	70901304

222	8	24017428	24021427	24161636	24165635
223	3	158576895	158580894	158785581	158789580
224	17	69176521	69180520	69430126	69434125
225	11	65101116	65105115	65228517	65232516
226	8	24161636	24165635	24301050	24305049
227	13	50104088	50108087	50158888	50162887
228	8	8635076	8639075	8694306	8698305
229	8	24126039	24130038	24161636	24165635
230	6	31713310	31717309	31846794	31850793
231	22	38808898	38812897	38969282	38973281
232	21	46075343	46079342	46277796	46281795
233	3	105089951	105093950	105278353	105282352
234	22	38707805	38711804	38808898	38812897
235	4	154421616	154425615	154579310	154583309
236	20	4733738	4737737	4886449	4890448
237	19	55395030	55399029	55609242	55613241
238	5	76477399	76481398	76572659	76576658
239	4	163156532	163160531	163218991	163222990
240	X	2457257	2461256	2530522	2534521

表1.b5

	巢式PCR引子集	
編號	探針	引子ID
121	Hg38_14_94590755_94595046_94660913_94670434_FF	OBD183-181
122	Hg38_2_68146585_68154467_68359452_68365969_RR	OBD183-021
123	Hg38_19_29696989_29701188_29727590_29730932_FF	OBD183-1373
124	Hg38_10_67996987_68002098_68133244_68143089_FR	OBD183-285
125	Hg38_3_172498977_172504898_172612668_172616740_RR	OBD183-1377
126	Hg38_11_66660876_66666332_66795521_66799004_FR	OBD183-149
127	Hg38_1_11722709_11729599_11945928_11948525_FF	OBD183-325
128	Hg38_12_69485433_69494790_69582845_69586465_FF	OBD183-161
129	Hg38_6_92733887_92741450_92775882_92789490_FF	OBD183-037
130	Hg38_1_64986326_64990105_65229466_65234378_RF	OBD183-377
131	Hg38_9_83554932_83574455_83691585_83699524_RF	OBD183-1381
132	Hg38_19_50878674_50885130_50961391_50964466_FR	OBD183-289
133	Hg38_12_8849992_8853563_8956666_8971971_RR	OBD183-337
134	Hg38_13_27943964_27948276_28172854_28181281_RR	OBD183-193
135	Hg38_5_31659980_31666153_31910749_31916612_RR	OBD183-001
136	Hg38_3_2897600_2903984_3121830_3126033_FF	OBD183-1385
137	Hg38_3_170416234_170418115_170607532_170615844_RR	OBD183-1389
138	Hg38_18_55916670_55920381_56075450_56084543_FR	OBD183-1393
139	Hg38_5_76572657_76583168_76698020_76702533_RF	OBD183-329
140	Hg38_12_8913809_8922295_8956666_8971971_RR	OBD183-357

141	Hg38_5_74537627_74543794_74656276_74660840_RF	OBD183-277
142	Hg38_7_37143709_37150477_37190622_37192292_FF	OBD183-257
143	Hg38_9_131690419_131696896_131751071_131753768_FR	OBD183-1397
144	Hg38_6_26425345_26428181_26579344_26586907_RR	OBD183-097
145	Hg38_22_28560976_28565084_28753634_28758538_FF	OBD183-165
146	Hg38_3_187141583_187148120_187202075_187212711_RF	OBD183-085
147	Hg38_1_193519461_193528788_193673926_193687017_FR	OBD183-217
148	Hg38_4_154421614_154428471_154600623_154609665_RF	OBD183-105
149	Hg38_16_75703703_75711017_75770470_75776868_RF	OBD183-073
150	Hg38_10_101411213_101417434_101602840_101605496_RF	OBD183-081
151	Hg38_19_7668688_7670794_7738421_7741267_FR	OBD183-1401
152	Hg38_2_223262711_223267419_223446116_223450606_FF	OBD183-1405
153	Hg38_22_25253412_25258650_25482038_25486782_FR	OBD183-1409
154	Hg38_2_68188547_68193452_68359452_68365969_FR	OBD183-1413
155	Hg38_2_68188547_68193452_68359452_68365969_RR	OBD183-1417
156	Hg38_1_229073105_229082983_229284318_229294264_FR	OBD183-1421
157	Hg38_9_83554932_83574455_83691585_83699524_FF	OBD183-1425
158	Hg38_22_25264413_25271942_25482038_25486782_RR	OBD183-1429
159	Hg38_1_99618648_99629858_99759006_99763111_RF	OBD183-1433
160	Hg38_18_55921930_55924182_56075450_56084543_FR	OBD183-1437
161	Hg38_17_74584319_74586652_74671518_74675232_FF	OBD183-1441
162	Hg38_1_109359719_109366704_109566782_109570200_RF	OBD183-1445
163	Hg38_1_27834284_27836433_28029814_28033207_RR	OBD183-1449
164	Hg38_5_76572657_76583168_76654480_76657126_RF	OBD183-1453
165	Hg38_4_109733192_109734599_109791099_109801176_RF	OBD183-1457
166	Hg38_1_70054091_70068840_70318902_70321099_RR	OBD183-1461
167	Hg38_1_229261740_229263861_229284318_229294264_RR	OBD183-1465
168	Hg38_14_60530277_60542106_60741580_60746311_FF	OBD183-1469
169	Hg38_11_93198707_93202947_93228754_93237221_FR	OBD183-1473
170	Hg38_12_34029969_34035740_34074510_34080992_RF	OBD183-1477
171	Hg38_3_192827117_192831683_192941417_192949607_FR	OBD183-1481
172	Hg38_1_112145907_112153217_112230261_112242505_FR	OBD183-1485
173	Hg38_5_30065209_30068365_30144494_30156052_FR	OBD183-1489
174	Hg38_4_177311798_177314753_177426344_177434196_FF	OBD183-1493
175	Hg38_8_8573974_8579178_8694304_8696852_RR	OBD183-1497
176	Hg38_19_15474784_15476319_15596057_15603844_RR	OBD183-1501
177	Hg38_3_57432399_57444809_57467336_57470926_FR	OBD183-1505
178	Hg38_11_9685853_9690988_9860564_9866955_RF	OBD183-1509
179	Hg38_12_8803939_8810628_8956666_8971971_FR	OBD183-1513
180	Hg38_12_8725011_8729420_8956666_8971971_RR	OBD183-1517
181	Hg38_12_8729585_8733910_8956666_8971971_FR	OBD183-1521
182	Hg38_1_150313909_150318375_150517096_150519652_FF	OBD183-1525
183	Hg38_8_129814184_129820472_129899083_129904705_RR	OBD183-1529

184	Hg38_4_70364253_70375913_70475197_70476584_FF	OBD183-1533
185	Hg38_1_219996896_220002127_220133227_220135485_RR	OBD183-1537
186	Hg38_2_85732323_85740233_85782915_85784976_RR	OBD183-1541
187	Hg38_22_25482038_25486782_25521454_25528069_RF	OBD183-1545
188	Hg38_12_8895119_8900342_8956666_8971971_RR	OBD183-1549
189	Hg38_5_30065209_30068365_30144494_30156052_RR	OBD183-1553
190	Hg38_12_8956666_8971971_9003019_9010419_RF	OBD183-1557
191	Hg38_5_30097465_30100060_30144494_30156052_FR	OBD183-1561
192	Hg38_11_9564044_9569915_9685853_9690988_FR	OBD183-1565
193	Hg38_19_42510307_42515066_42619854_42637441_RF	OBD183-1569
194	Hg38_3_158515927_158528644_158576893_158580745_FR	OBD183-1573
195	Hg38_12_8895119_8900342_8956666_8971971_FR	OBD183-1577
196	Hg38_3_138618464_138621485_138761567_138764562_FF	OBD183-1581
197	Hg38_7_29905017_29911792_30016613_30019069_RR	OBD183-1585
198	Hg38_3_48672113_48676996_48843153_48846436_FR	OBD183-1589
199	Hg38_1_193547269_193555526_193673926_193687017_FR	OBD183-1593
200	Hg38_5_30144494_30156052_30253195_30260049_RF	OBD183-1597
201	Hg38_22_25264413_25271942_25482038_25486782_FR	OBD183-1601
202	Hg38_1_27797543_27806064_28029814_28033207_FR	OBD183-1605
203	Hg38_5_30055950_30065209_30144494_30156052_RR	OBD183-1609
204	Hg38_4_177265268_177272349_177426344_177434196_RF	OBD183-1613
205	Hg38_17_27573633_27580584_27705007_27714184_RR	OBD183-1617
206	Hg38_X_139896828_139900158_140013151_140020699_RF	OBD183-1621
207	Hg38_1_99460537_99469579_99708395_99714403_FF	OBD183-1625
208	Hg38_1_193673926_193687017_193723402_193725340_RF	OBD183-1629
209	Hg38_12_56314794_56317802_56415250_56418662_FR	OBD183-1633
210	Hg38_17_27705007_27714184_27819635_27822792_RF	OBD183-1637
211	Hg38_1_99641071_99649469_99708395_99714403_FF	OBD183-1641
212	Hg38_1_35174790_35177903_35287825_35293685_FR	OBD183-1645
213	Hg38_5_30008006_30016904_30144494_30156052_RR	OBD183-1649
214	Hg38_5_67178844_67182260_67213797_67219491_FR	OBD183-1653
215	Hg38_1_109359719_109366704_109565116_109566579_RF	OBD183-1657
216	Hg38_1_219983690_219989585_220133227_220135485_FR	OBD183-1661
217	Hg38_11_78965087_78972317_79119884_79126654_RF	OBD183-1665
218	Hg38_18_539296_550050_584723_586397_RF	OBD183-1669
219	Hg38_8_8694304_8696852_8726052_8731395_RF	OBD183-1673
220	Hg38_1_193528788_193530846_193673926_193687017_RR	OBD183-1677
221	Hg38_3_70749410_70755452_70897303_70900588_FR	OBD183-1681
222	Hg38_8_24010357_24021429_24161634_24170554_FR	OBD183-1685
223	Hg38_3_158576893_158580745_158781885_158789582_RF	OBD183-1689
224	Hg38_17_69164151_69180522_69430124_69435332_FR	OBD183-1693
225	Hg38_11_65101566_65105117_65228515_65232564_FR	OBD183-1697
226	Hg38_8_24161634_24170554_24298873_24305051_RF	OBD183-1701

227	Hg38_13_50104086_50113860_50155566_50162889_RF	OBD183-1705
228	Hg38_8_8634577_8639077_8694304_8696852_FR	OBD183-1709
229	Hg38_8_24119510_24130040_24161634_24170554_FR	OBD183-1713
230	Hg38_6_31710695_31717311_31846792_31848234_FR	OBD183-1717
231	Hg38_22_38808896_38820306_38970835_38973283_RF	OBD183-1721
232	Hg38_21_46072387_46079344_46279083_46281797_FF	OBD183-1725
233	Hg38_3_105082976_105093952_105278351_105281788_FR	OBD183-1729
234	Hg38_22_38707803_38709080_38808896_38820306_RR	OBD183-1733
235	Hg38_4_154421614_154428471_154574662_154583311_RF	OBD183-1737
236	Hg38_20_4736115_4737739_4885862_4890450_FF	OBD183-1741
237	Hg38_19_55395028_55396801_55609240_55610480_RR	OBD183-1745
238	Hg38_5_76475531_76481400_76572657_76583168_FR	OBD183-1749
239	Hg38_4_163153577_163160533_163215420_163222992_FF	OBD183-1753
240	Hg38_X_2456239_2461258_2530520_2531841_FR	OBD183-1757

表1.b6

	巢式PCR引子集		
編號	引子序列	引子ID	引子序列
121	GCCAAAACAAAGTGTCCTCATCTGGG	OBD183-183	AAGGGTATGGGAAAACAGGCATCTGC
122	GAGTCTCACTTAGAACCTGCTACTGT	OBD183-023	CCCAGAACAGAGAAAGGGCATTAGGG
123	GGGTCGGCATCGGAAGCTTGAAATT	OBD183-1375	GAGAAGCGGGGAGTTACCGGTCAAT
124	AACACCAACTCCTTCCCCATTCTAAT	OBD183-287	GGACCCACAAAACTTGACTCTCTTCC
125	ACGAGCATACAGACAATCGTCGTCG	OBD183-1379	ATACTCTCCAGCCGACTGAAAACGG
126	ATGGGAACTCCAGACACCAATGGCTG	OBD183-151	AAACCTACCGCTTTGACCTCACAGAA
127	TCTCACCCCTACTCCCACCTCAC	OBD183-327	GAAGACACAGCAGAGGACACAGC
128	CCAGAGTGAGTCAAGGAGGCACG	OBD183-163	TTTCAGGCGTCCCTTTCCCTTGC
129	CTGACCCATTTTCCCTCTCCTGTGAT	OBD183-039	GCAGGAACAACAGAAAGTAGAAACAG
130	AGGGATGGTGGCTCAATGCTGCC	OBD183-379	CCTGGAGAAAACTTGCTGCCGAG
131	GAGAAAAAACCACTGGAAATGGCAG	OBD183-1383	TACCAGCTCGACATTCGCGTGCCCC
132	TCCTGGACAGTCAGCAAACCTGC	OBD183-291	CAGCCAGCAGAGACAGGAAGTGC
133	GTCAGAGGCAAGGAGGAAGGACC	OBD183-339	GCGGAACTTCAAAGGTCAGGTGC
134	TCAGACAGCCTTCCCAAGCC	OBD183-195	ACACACTTTCACTCCCT

	CTG		GTCCCC
135	TCTGTAACACCAAGTGGAAAGCAGTG	OBD183-003	TAAAAGCAGGAACTGGCTGGGCGTG
136	CGGCCAACCGTTCATTGGAGCAATA	OBD183-1387	GCTAGGCAACAGCTGGATCTACAGA
137	AGTGGATGGATGAGCGCCACATGTA	OBD183-1391	AGCGCGATTGTCGGGCACATTAGAT
138	TTGCCTAATGGGCCTCTTTGGTCAT	OBD183-1395	TAAGTCACAGTGACAGCTTCTACTT
139	CCTTAGGATTTTCTCAACAAGCCATT	OBD183-331	CCTCCAGCGAGACCACTCCTAAATAA
140	CACCTCAACTCCAAGAAGGCGGG	OBD183-359	GCGGAACTTCAAAGGTCAGGTGC
141	CCAGATGCTCCCAATCCCAGTCA	OBD183-279	TAGTGGATTCCTGGCTGGGCACG
142	AACCCAACCGTCCAGAGTCCACG	OBD183-259	CCTGTGGAAGGTGGGACTATGAG
143	GGCTAGGTCGTCGTGCGCTCCGTCT	OBD183-1399	GTACGCAGGGGACCAGTCGATAGCT
144	ACCCTGTAGTCCTGGGCTCAAGAGAT	OBD183-099	TGCCCAATAAAAGAAACCATCAAGGG
145	GGGAGGCACAGGAAGGGAAGTTG	OBD183-167	GCTGCCTAAGGGTCTCTTTTGGTC
146	GAGCAGAGTGAGGACTGGAATCC	OBD183-089	CCTGGGCTCAACCTTGCTGGACT
147	GTATCAGAGGTAATCAAGTAACCAAG	OBD183-219	ATTACCTCATTTATGCCTCACACCAT
148	GCTACGGTTCACAAGGTGCTTAGAAA	OBD183-1051	GGGAAGGAAAAGAGGGCAAGTCC
149	CCTGACCCACCAAGACTGAACCA	OBD183-077	GTGCCACCCTGGGCTGGATGATT
150	GCCTCTGGTGCCCTTTTGGGTTG	OBD183-085	GAGCAGAGTGAGGACTGGAATCC
151	AGGCTACCTTGACGCTCACCCTG	OBD183-1403	GGAGTAGGTGGAGCCCAAAGGAT
152	CACCAGGGTATTTCCCAGCAGCC	OBD183-1407	CTGACCCAGGAAAACCACCCTCA
153	GACCTTCAATACCCAAAGTAAGCCTT	OBD183-1411	CTGTCCCATCTGCCTAAAACCGTTGG
154	CATCTCCCTCCCCTCCTTTCAGC	OBD183-1415	GCTGTCACTCCCAAGAGAAGCCT
155	AATCTTGCTACTGCCCATTAGAAAGG	OBD183-1419	CCCAGAACAGAGAAAGGGCATTAGGG
156	GGGATGTCCTTGCTTGTTCCTGAT	OBD183-1423	GATTCCAAAGGTCCGAAAGCAACGGG
157	CCATCTGCTCCAGGTATGAC	OBD183-1427	CCTGGGCTCAACCTTGC

	CCT		TGGACT
158	GGACCTGAATCTTCCACTCT GTCTTT	OBD183-1431	CTGTCCCATCTGCCTAA AACCGTTGG
159	TACCTCTCCTCTCCCCGCAA AACACT	OBD183-1435	ACTGTGACCAAAGGAAG GAAAGCCAT
160	GGCAGTGAATAACCTGTGG AAAGATT	OBD183-1439	CACCCAGTCACCCAGGC TTGTGTA
161	ACAGCCCCATCTCAGGGAT AGGTTC	OBD183-1443	ATAAAAGTGGTTGTATT GGCTGGGCG
162	GCATCCTAAGAAAGTCACT ATGTGCT	OBD183-1447	GTCACCTTTCGTCTTTTC CATTTCCC
163	CACATCTCAGGTCTACGCCT CTCAAG	OBD183-1451	CAGAACACAGTGAACA ACCAGGCATT
164	GATGTGGTCAGTTGTAGGA GCAGACT	OBD183-1455	CCTCCAGCGAGACCACT CCTAAATAA
165	GACAAGATAGTTTTGGATTG CCACCA	OBD183-1459	GGGAAGAAAAGATGGA AGTGGGTCAT
166	GGTGGTAAACATTTGGCTTT TCCCAG	OBD183-1463	AATACAGCGGAGTCAGG GAGGCAAGA
167	GTTACCAGCAAATCTTCCAT CAGTTC	OBD183-1467	GATTCCAAAGGTCCGAA AGCAACGGG
168	CTCAAGTCAAGAGAGGAGA CAGCCAT	OBD183-1471	CCAGAGACAGGTTGAGG AGTAGAAAG
169	TGTCAAGCGGGGGCCTCAA GTTAT	OBD183-1475	GAAGGACGGAAACCAG AATTACT
170	CGCGGCATCTAATTTTAGTG TATT	OBD183-1479	TTGACTGCGAGTTCGCT ACTAGT
171	CCGACTGCCCTTGTCCAATG GTGG	OBD183-1483	ACCCGATGAGTTGCCGA CTTTTAGG
172	GCTGCCCTGAAAATGGGAG TCTG	OBD183-1487	GGCAGATGGGAAGCAG CGTCCTA
173	GCGTGATAGACTATGCACTA GGGTC	OBD183-1491	ACGGCCTATTTACCGAG AGCTGTT
174	TTCAGAGCCGGTAGATGTAT GGC	OBD183-1495	GAAGGCTGGTTGAATAC ATGGCAG
175	TACGTGTACGAGCTCCTGCA GGA	OBD183-1499	AGATTGAGGTGTCCTAA ACTTAC
176	TCAAATCGCATCCGCCGTGC ACA	OBD183-1503	CGGCCATAACACCTTAG CCGTCTC
177	GAGATCGGGCACAGATGTG ACTTCT	OBD183-1507	GGGGAATAAGTGACCTA TGCACCAG
178	GCGCACGACGTCCTGATCCA CCC	OBD183-1511	CGCCGCTTGCGATTTCG ACCAAC
179	ATTCCGCCTATACGGATGCG TTC	OBD183-1515	GCGGGAACGGCTGTGCA GTCACA
180	CATACCTATCCCGAATGCTT	OBD183-1519	CGCTGTGTAGCGGACAG

	AAGT		TCTGAG
181	AGGGAGTTACAGGCTTTCAGTAA	OBD183-1523	TACCCTCTCAAGCACGAGATCTAC
182	CTTAAAGTGATGCAGGTACATCCAT	OBD183-1527	GGGCGGGGTAGAAGCCGTCGCTT
183	GTGGAGTGTTTAACACTACCTTCC	OBD183-1531	GGGTCCATGCGGGGGGTAAAACC
184	GGTGTCTCGTGCACACCCTGGTAGC	OBD183-1535	TGTTTAAGAGGTCCGGGCAGCATA
185	ACCTGGAAACCCTCCTGCTGAAATAG	OBD183-1539	AAATCTGGACTCTGCCTTCTTGGAGC
186	CCGCTCTCTCTTCTGTGTCTTGG	OBD183-1543	GGTCAGTGTGGCAAAGTGGGAGC
187	CCCTGCTACAGATGATGCTGCCTG	OBD183-1547	CAGGGTCTGTCCCATCTGCCTAA
188	CCCAGCAGCAACTGTTTATCAGCAAT	OBD183-1551	ACTGCGGAACTTCAAAGGTCAGGTGC
189	GCGCGGCACCCATCTCTCTTCATT	OBD183-1555	AAAAAAGCGGCGCACTTCAGGCAT
190	GCTTATTGTGAACGTTCGAAAGC	OBD183-1559	AAAGGATGGATTTTTGACAATCC
191	CAATGTGGTTTATGTGCTACTGT	OBD183-1563	CGATGTCCAAGCTATGGTCCCTT
192	GAGAGGGTTTGTGAATCTAGGAGCA	OBD183-1567	ACAGCAATGCTAGGGAGCAATAA
193	CCGTGCTTTGAAAATCCCCAGATGTC	OBD183-1571	ATTCTCACTCCCCTACCTTCAGTCTG
194	CGTCGATACTCTCCAGCCGACTGAA	OBD183-1575	ACAGAAGCGCGATTGTCGGGCACAT
195	ACGGGAGAAAAAACCACTGGAAA	OBD183-1579	AGATTATAGTGTTGAAAAAGTCCTT
196	GGCAGTACCAGCTCGACATTCGCGT	OBD183-1583	TTCGACGGCGTGGGGAGTCTCTCCA
197	CCCCCGGCCAACCGTTCATTGGAG	OBD183-1587	CGTGATTTACGGACGCGAATTTA
198	AATAAGTGGATGGATGAGCGCCAC	OBD183-1591	ACATAAGTCACAGTGACAGCTTC
199	TGTATTGCCTAATGGGCCTCTTT	OBD183-1595	ACTTGGCTAGGTCGTCGTGCGCTCC
200	GTCATGCTAGGCAACAGCTGGATC	OBD183-1599	TCTGTACGCAGGGGACCAGTCGATA
201	CCCTGCTACAGATGATGCTGCCTG	OBD183-1603	CAGGGTCTGTCCCATCTGCCTAA
202	CTGCTCCTATAGGGCGTAATGACA	OBD183-1607	CTTCTTGTTGGGACGGCTTTCGTT
203	CCACATATCACGTGGTACAA	OBD183-1611	AGACGTTCTCTTTCCATT

	GGT		TGGATCA
204	ATTCGTGTCCGCGGGCACCTTGAA	OBD183-1615	TTCGGACCGCTTCCGTGGCCGTGAG
205	CCTGGCAAAGCCTTGGGATACAGC	OBD183-1619	GCCATCCCCTACACAGGTTCTCA
206	CATCACCGGCCGGTGCTAAAACCA	OBD183-1623	CGCAGCTTCAGTTACGGGGGCGAAT
207	AAGTTGTGGCCCATACTCGTTTAC	OBD183-1627	GTAACTCCACCACAGAGTACGAC
208	GGGTGACCTGGGCGGAGGCTGCCCT	OBD183-1631	ATTTGCGATGGAACTTGGAGTCTA
209	CGTTGACGCAATATAGGAGAGGAAA	OBD183-1635	GAGGGTTTCCTAACGTGCCTTGC
210	CTGGTATAGAGATTTTGCAGGTA	OBD183-1639	TGTAGCTACCTGACAGGAACTGA
211	GATGCTGCTGGGCAGTCACCCTCC	OBD183-1643	TCCTCGGTCGTAGCCCTTATATT
212	ACACCCCACGATACAAAAACAAGT	OBD183-1647	GCTCAGTACGATTGACGTTTGCTC
213	ACCGCACAATCTTAGGGGATACTTC	OBD183-1651	CGGTTTGTAACGGTGCGGATACC
214	GTTGCTCTAGGACACCGAGCAAA	OBD183-1655	GACAACTCCATCTGCTTCTTCCGT
215	TTGACAACGGGCCGTTGGGAGCAAA	OBD183-1659	CGTGGCAAACATGAAACAAGCTCCA
216	CCCCACCGAGACACTTGTGACTC	OBD183-1663	TCTGGACTCTGCCTTCTTGGAGC
217	AGATTTCAAGTCCGTAGGCTCAG	OBD183-1667	CGTATTCCGGGTCCTGTCGGTAGG
218	CTTTAAAGACTGCACTACTAGTCA	OBD183-1671	TTCTAGCCTACCCTTAAGCTTGT
219	TGTATCCATGGTATCTGTACGTTTG	OBD183-1675	GTGTGCGTACTCGTTGAAGGTGGG
220	TATCAGAAGCCCCCGAAACTAGGT	OBD183-1679	TGAGGATCAACAGACCTCTGTAT
221	CCGCTTGCGACCGTTTAGATGTTTC	OBD183-1683	ACCGAGGGCAGCACCGTGTAACTTC
222	GAACAGGGCTGTTCGCGTGATAC	OBD183-1687	AGGACATCTATGGGGATACATAGG
223	TCGTAAACCTAGATAGTCAACCATG	OBD183-1691	TATGGAGGTCAAGTGCTGTAATTT
224	CTAGTATTTGTCACGTCCTGTATGA	OBD183-1695	ATTCACTTGGCGTCCCCGTTGCG
225	CAGTTTTGATTTCCTTTTCTGACCTC	OBD183-1699	GTTCTGTTTCTTGACCAGTGTGTTGA
226	AAAGATGTCGTGCTACTCCA	OBD183-1703	AGGCCTCCACCTACCGA

	TAC		TACATGAG
227	CGGGAGATCTAGTAAAGGATGAAAT	OBD183-1707	TGTCCCCTCCCGCATGCAAGCGAT
228	AAATGGGGCGAAATTACGCTGCC	OBD183-1711	ATAGGAATTCAGAGGCTTTAAGGTG
229	TGCTCGTCCTACGAGTGGTAGAGTT	OBD183-1715	GTGGCGCGTTTTTAAACACCGTCC
230	CGTGTAACCCCGACCCAGCAACGT	OBD183-1719	CAGTCGGCCTACCGTCCGCTCCCAA
231	TATTTAGCAGGAGTCGCACTCAG	OBD183-1723	TATGTTACTGTCAGAGGGGCACA
232	GGTTAATGATGGGTTCAGCTCTAA	OBD183-1727	TAATAATATACGGGGCATAGTATA
233	CTTGACAGCCCTCTTTGTGGTTACTC	OBD183-1731	GAATGACGCCGAAGGACTTTGTATCC
234	TAGTCTGTTACGCTGGCCTCTATAT	OBD183-1735	TGACTTCTAGCGCACGACGTCCTGA
235	GAAGTATTCGCATGCGCAACCCCAC	OBD183-1739	CCACCCCATTCCGCCTATACGGATG
236	AGCCAAGCGTGGTTGTACTTCGCCA	OBD183-1743	GTTCCCATACCTATCCCGAATGC
237	ACCTGTCCTTGTGGTTTGCCTAAC	OBD183-1747	TAAGTAAGGGAGTTACAGGCTTTCA
238	AGTACCTGCAGTTTAGTATTAACT	OBD183-1751	TAATCTTAAAGTGATGCAGGTACAT
239	CGAATGCTACGCCGTTACCTCAGC	OBD183-1755	CATCGTGGAGTGTTTAACACTACC
240	TTGGTACATGCAGCAAACACTCAGT	OBD183-1759	TCCTGGTGTCTCGTGCACACCCTGG

表1.b7

編號	探針	基因	RP
241	Hg38_1_238263911_238275028_238361690_238365165_FF	ZP4	48737.12973
242	Hg38_18_60381033_60390027_60592857_60596411_FF	PMAIP1	51696.53899
243	Hg38_22_38732684_38735694_38808896_38820306_RR	GTPBP1	51041.21585
244	Hg38_8_8653178_8657570_8694304_8696852_FR	MFHAS1	53321.30992
245	Hg38_11_102793985_102796912_102892680_102896888_FF	MMP1	51501.90071
246	Hg38_1_193673926_193687017_193848403_193851226_FR	CDC73	55872.3905
247	Hg38_19_42434303_42437498_42510307_42515066_FR	CEACAM1	53501.44381
248	Hg38_8_129814184_129820472_129899083_129904705_FR	FAM49B	55342.69733
249	Hg38_19_41359498_41360630_41453565_41456813_RF	ATP5SL	56454.72932
250	Hg38_1_193673926_193687017_193926526_193929941_RF	CDC73	52504.51484
251	Hg38_12_46821759_46827269_46865284_46879162_FF	PCED1B	52444.49409
252	Hg38_22_28598306_28600429_28753634_28758538_FF	TTC28	53389.05472

253	Hg38_11_9477640_9482033_9685853_9690988_RR	SWAP70	50697.26673
254	Hg38_22_28554668_28559386_28753634_28758538_FF	TTC28	53965.86326
255	Hg38_17_1411117_1412617_1634184_1635993_RF	CRK	53185.52889
256	Hg38_5_74325511_74329920_74537627_74543794_FR	HEXB	58046.45799
257	Hg38_12_14611683_14620949_14668390_14673240_FR	HIST4H4	59701.44705
258	Hg38_X_2345279_2349126_2530520_2531841_FR	CD99	54408.43105
259	Hg38_18_56075450_56084543_56148926_56154674_RF	TCF4	50818.57391
260	Hg38_19_17318586_17321060_17372677_17376287_RR	PLVAP	50867.38498
261	Hg38_12_122518390_122523625_122683979_122688903_FF	HCAR2	67212.53389
262	Hg38_4_4146074_4152493_4280585_4285296_FF	LYAR	54078.12648
263	Hg38_11_118323848_118335396_118462783_118464333_RR	CD3D	57954.67302
264	Hg38_15_72172047_72177812_72350397_72358464_RF	PKM	53340.62932
265	Hg38_12_8956666_8971971_9052225_9059010_RF	A2M	58456.59878
266	Hg38_1_160202241_160208034_160387699_160390980_FR	NCSTN	54296.30822
267	Hg38_22_34722666_34726389_34750116_34757594_FR	TOM1	44837.84123
268	Hg38_18_8623206_8633807_8834563_8839858_RR	RAB12	57961.35429
269	Hg38_3_10166863_10171451_10267732_10269649_RF	IRAK2	58264.83493
270	Hg38_22_37732067_37737457_37944696_37945909_FF	ANKRD54	54981.71707
271	Hg38_11_47310703_47316087_47405431_47407603_RF	SPI1	59891.07706
272	Hg38_10_73661598_73666900_73900120_73903402_RF	CAMK2G	59699.3964
273	Hg38_11_78798294_78806874_78965087_78972317_RR	GAB2	55159.38443
274	Hg38_15_65465777_65469194_65573794_65596385_RF	DPP8	58682.0863
275	Hg38_1_193655980_193663241_193673926_193687017_FR	CDC73	57777.81756
276	Hg38_5_30107211_30110692_30144494_30156052_RR	DROSHA	58365.69232
277	Hg38_18_427721_433761_539296_550050_FR	COLEC12	58064.51858
278	Hg38_12_15684229_15699647_15801742_15806686_FF	EPS8	56946.45375
279	Hg38_19_33180896_33182661_33328178_33332893_FF	CEBPA	61202.44274
280	Hg38_11_78848038_78857286_78965087_78972317_FR	GAB2	58769.84406
281	Hg38_Y_20386719_20398884_20504300_20520750_FR	KDM5D	48417.46255
282	Hg38_20_31369843_31372347_31617243_31621976_RR	DEFB118	59843.41938
283	Hg38_1_147709076_147716288_147799500_147802923_RF	ACP6	53821.33874
284	Hg38_17_30923923_30926868_31150085_31156746_RF	NF1	57251.74647
285	Hg38_9_94033256_94043963_94058786_94067185_FF	BARX1	59735.75802
286	Hg38_5_31866962_31870685_31910749_31916612_RR	GOLPH3	60050.7893
287	Hg38_10_114529344_114531737_114712352_114726311_RF	ABLIM1	55746.96154
288	Hg38_12_64438849_64448996_64463496_64470612_RF	TBK1	61881.88104
289	Hg38_17_35998435_36002770_36030367_36035489_FR	CCL15	65006.71327
290	Hg38_3_154848097_154855651_154966860_154974838_FR	MME	56265.31231
291	Hg38_1_193673926_193687017_193882412_193889924_RF	CDC73	60988.03841
292	Hg38_3_158501077_158507758_158576893_158580745_FR	MLF1	57524.99311

293	Hg38_17_63801674_63804028_64026936_64033184_FF	CD79B	64531.91532
294	Hg38_17_31302844_31307239_31324781_31330350_RR	EVI2B	64284.82246
295	Hg38_17_31224131_31234469_31324781_31330350_RR	EVI2B	60367.16409
296	Hg38_19_42697457_42701566_42762015_42770764_RF	CEACAM8	58661.04435
297	Hg38_8_8422737_8427114_8694304_8696852_RR	MFHAS1	59120.0054
298	Hg38_2_9540565_9545891_9601867_9603721_FR	ADAM17	61151.65322
299	Hg38_6_136360365_136366092_136518089_136523843_RF	MAP3K5	62837.60702
300	Hg38_X_70970170_70972174_71213839_71218089_FF	IL2RG	55780.88443
301	Hg38_5_111518564_111524189_111570082_111578257_FR	CAMK4	53895.56742
302	Hg38_3_87150717_87152334_87167991_87177284_FF	POU1F1	64124.1068
303	Hg38_5_74394031_74404922_74537627_74543794_RR	HEXB	65086.74306
304	Hg38_16_57311821_57315910_57359852_57364698_FR	CCL22	65988.63889
305	Hg38_X_2530520_2531841_2565626_2568771_RF	CD99	59592.42497
306	Hg38_4_104772558_104786165_104802495_104808042_FR	TET2	62339.16643
307	Hg38_16_57156886_57158385_57359852_57364698_RR	CCL22	62836.77792
308	Hg38_14_30757124_30766270_31037033_31039641_RR	COCH	59487.29689
309	Hg38_2_68135773_68139581_68359452_68365969_RR	PLEK	64241.20036
310	Hg38_16_2330922_2335048_2522663_2525074_RF	ATP6V0C	57154.64158
311	Hg38_15_63964667_63969673_64105032_64108785_FF	DAPK2	61998.74552
312	Hg38_22_38681470_38688482_38808896_38820306_RR	GTPBP1	65196.99376
313	Hg38_7_100032804_100034042_100078292_100082051_FR	ZNF3	59483.99451
314	Hg38_3_70698156_70700092_70796347_70803301_FR	FOXP1	50093.92319
315	Hg38_2_120597115_120611528_120697175_120701136_RR	GLI2	64773.43449
316	Hg38_19_48331809_48333020_48561743_48564039_FF	KDELR1	63102.10432
317	Hg38_3_70698156_70700092_70796347_70803301_RR	FOXP1	50518.81561
318	Hg38_5_58504296_58515741_58568633_58574449_FF	GAPT	64526.10527
319	Hg38_1_7824282_7826917_7994232_7998947_FF	PARK7	66312.10271
320	Hg38_X_77765454_77772092_77954363_77959007_RR	ATP7A	65901.89086
321	Hg38_3_158501077_158507758_158576893_158580745_RR	MLF1	64995.94624
322	Hg38_1_193673926_193687017_193851226_193858598_RF	CDC73	67151.59303
323	Hg38_12_116931027_116934300_116959223_116967078_RF	TESC	67895.68024
324	Hg38_17_7665587_7668453_7811362_7813705_FF	EFNB3	68021.43322
325	Hg38_12_87675372_87683936_87811804_87814408_FF	C12orf29	59072.48374
326	Hg38_12_46746378_46756718_46865284_46879162_FF	PCED1B	56348.34876
327	Hg38_12_56269538_56273851_56415250_56418662_FR	IL23A	58735.67365
328	Hg38_7_26158147_26166959_26344790_26347647_FF	SNX10	67515.79006
329	Hg38_4_40800075_40804237_41041101_41047221_RR	RBM47	63952.65387
330	Hg38_5_101857205_101863977_102113262_102119968_RR	SLCO4C1	54021.35936
331	Hg38_22_38970835_38973283_39095838_39099483_FR	APOBEC3A	65531.89713
332	Hg38_5_55874716_55883166_56069488_56074299_RR	IL31RA	62997.34802

333	Hg38_5_30097465_30100060_30144494_30156052_RR	DROSHA	62532.2281
334	Hg38_3_30481415_30486448_30652453_30660274_RR	TGFBR2	62959.29829
335	Hg38_19_49754688_49759950_49902219_49904931_RR	AKT1S1	64821.01619
336	Hg38_10_26780453_26788708_26959699_26967983_RR	ABI1	54431.98717
337	Hg38_8_129796093_129803717_129899083_129904705_RR	FAM49B	57906.95109
338	Hg38_5_30008006_30016904_30144494_30156052_FR	DROSHA	65273.34565
339	Hg38_11_65076105_65079526_65228515_65232564_RR	CAPN1	64028.9213
340	Hg38_19_51523072_51524696_51712234_51719472_FR	SIGLEC14	64127.44789

表1.c1

編號	FC:(1類/2類)	pfp	P值	CCS
241	1.199199629	0.000272499	0.00019075	免疫
242	1.198713718	0.000190318	0.0000653656727182565	免疫
243	1.19837051	0.000270662	0.000183447	免疫
244	1.197935801	0.000190318	0.0000608052374842399	免疫
245	1.197701976	0.000190318	0.0000671711653133743	免疫
246	1.197665727	0.000190318	0.0000442671934832564	免疫
247	1.197042331	0.000236458	0.000140484	免疫
248	1.196532286	0.000211794	0.000110258	免疫
249	1.195802366	0.000190318	0.0000317827878994666	免疫
250	1.195754196	0.000241232	0.000148167	免疫
251	1.195236301	0.000190318	0.0000582936227176780	免疫
252	1.195155906	0.000211794	0.000109982	免疫
253	1.195084632	0.000412196	0.00034188	免疫
254	1.19473551	0.000262232	0.000165052	免疫
255	1.194662754	0.000270694	0.000188378	免疫
256	1.194570441	0.000190318	0.0000212317180631082	免疫
257	1.194388741	0.000190318	0.00000306671752919555	免疫
258	1.194096109	0.000339175	0.000263359	免疫
259	1.194065862	0.000190585	0.0000747757753947329	免疫
260	1.19390711	0.000236458	0.000140202	免疫
261	1.193203867	0.000595529	0.000538726	免疫
262	1.193183504	0.000203616	0.0000994698869072441	免疫
263	1.193086823	0.000190318	0.0000103911256241961	免疫
264	1.193068914	0.00053272	0.000473181	免疫
265	1.192890687	0.000194259	0.0000868450140076460	免疫
266	1.192862248	0.000190585	0.0000707744116667950	免疫
267	1.191959549	0.001980022	0.001933434	免疫

268	1.191727576	0.000190318	0.0000359457512660268	免疫
269	1.19169403	0.000190318	0.0000335943375029530	免疫
270	1.191457327	0.000190318	0.0000158474036584351	免疫
271	1.190917338	0.000190318	0.0000326879590582544	免疫
272	1.19084303	0.000197577	0.0000935587232378213	免疫
273	1.190744302	0.000275396	0.000194397	免疫
274	1.190504767	0.000190318	0.0000437088524676218	免疫
275	1.190493985	0.000190318	0.0000563295687585460	免疫
276	1.19047063	0.000197577	0.0000926461908220582	免疫
277	1.190369905	0.00103073	0.000982226	免疫
278	1.190186142	0.000190318	0.0000510419758068525	免疫
279	1.189884825	0.000190318	0.0000293967331790486	免疫
280	1.189598135	0.000190318	0.0000456676257843592	免疫
281	1.189191627	0.000915634	0.000861773	免疫
282	1.188928982	0.000190318	0.0000312730642451933	免疫
283	1.188579442	0.000236458	0.000136615	免疫
284	1.188149935	0.00035878	0.000285442	免疫
285	1.188067975	0.000190585	0.0000748475195308771	免疫
286	1.187779274	0.000235024	0.000132037	免疫
287	1.187507007	0.000249741	0.000154252	免疫
288	1.187477184	0.000190318	0.00000880730560530041	免疫
289	1.18733157	0.000190318	0.00000871589813800604	免疫
290	1.187294832	0.000190318	0.0000314803990143427	免疫
291	1.187269786	0.000190585	0.0000742593635192758	免疫
292	1.18676595	0.000508992	0.000450607	免疫
293	1.186090957	0.000190318	0.0000259097607038396	免疫
294	1.185876603	0.000190318	0.0000149849967692310	免疫
295	1.185799969	0.000235024	0.000131543	免疫
296	1.185573628	0.000270662	0.000182572	免疫
297	1.185403394	0.000295776	0.000218048	免疫
298	1.185337077	0.000190318	0.0000275866796060454	免疫
299	1.185296999	0.000190318	0.0000649958849316886	免疫
300	1.185190065	0.000595824	0.000541499	免疫
301	1.184813122	0.000595529	0.00053948	免疫
302	1.184689343	0.000190318	0.0000454574347085092	免疫
303	1.184668406	0.000190318	0.0000306627837990256	免疫
304	1.18465428	0.000190318	0.0000114317814228455	免疫

305	1.184410724	0.000435221	0.000367378	免疫
306	1.184302874	0.000836477	0.000774971	免疫
307	1.18428889	0.000190318	0.0000423498295566599	免疫
308	1.184242905	0.000190318	0.0000618657822531731	免疫
309	1.18418235	0.000190585	0.0000759141215873654	免疫
310	1.184026398	0.00061716	0.000562705	免疫
311	1.183975176	0.000190318	0.0000249364153221289	免疫
312	1.183284508	0.000197577	0.0000911214806116341	免疫
313	1.183113527	0.000193014	0.0000845857046560968	免疫
314	1.183036403	0.000781416	0.00072166	免疫
315	1.183020166	0.000191193	0.0000816939975838714	免疫
316	1.18279674	0.000190318	0.0000491079068843566	免疫
317	1.182516616	0.000877054	0.000820303	免疫
318	1.182098422	0.000190318	0.0000267430121371497	免疫
319	1.181843928	0.000190318	0.00000545416265005265	免疫
320	1.181837185	0.000190318	0.0000147870595709615	免疫
321	1.18179292	0.000191193	0.0000826680452022867	免疫
322	1.181711187	0.000190318	0.0000311694933960318	免疫
323	1.181481439	0.000190318	0.0000455553597333304	免疫
324	1.181451408	0.000190318	0.0000156118300475227	免疫
325	1.181422328	0.000349894	0.000276828	免疫
326	1.181382308	0.000492539	0.000433145	免疫
327	1.181296054	0.001179304	0.001134213	免疫
328	1.181133151	0.000190318	0.0000200707508534575	免疫
329	1.181131206	0.000480329	0.000420995	免疫
330	1.181018432	0.001509728	0.001465324	免疫
331	1.181002423	0.000190318	0.0000311940307351719	免疫
332	1.18088206	0.000235024	0.000134191	免疫
333	1.180627075	0.0002944	0.000213873	免疫
334	1.180573942	0.000190318	0.0000657555359683606	免疫
335	1.180542127	0.000190318	0.0000555388677613243	免疫
336	1.180416072	0.000656661	0.000602583	免疫
337	1.180322929	0.000298508	0.000223881	免疫
338	1.180072895	0.000228221	0.000125521	免疫
339	1.180011257	0.000190585	0.0000763617548573175	免疫
340	1.179876337	0.000203616	0.0000981567903264230	免疫

表1.c2

	探針序列	探針位置
編號	**60 mer**	**Chr**
241	TTTAATGGGCAACTCTGAAGGATTATGTTCGAACTCCTGACC TTGTGTTCAACCCACCTC	1
242	ATAAAAATTAAATTTAGTCACAGTACATTCGAACTCCTGACC TCAGGTGCTTCACCTGCT	18
243	AAAAAGAAAAAGAAAAACAGAACAAACATCGAACTCCTGAC CTCAGATGATTCATCTGCC	22
244	ATGATGGGGGAAATAATTCAAAACTGACTCGAGACCATCCT GGTCAACACTGTGAAAACC	8
245	TCCATCAACTGTGATGCAGTTTCCCTCTTCGATCTCCTGACCT CAAGATCCACCAACCTC	11
246	GGAACACTTCTCTAAGAACCTGAATTATTCGATCTCTTGGCC TCATGATCCATCAGCCTT	1
247	GTCAGCTACTGGCTCTGTCACTTAACTGTCGATCTCCTGACCT TGTGTTTCACCTGCCTT	19
248	GCCTCTGCTGTGTAACTTCAGAGGAAATTCGAACTCCTGACA CCTCAGGTGATCTACCTG	8
249	ATTAGGCACTGTAGAATCTAGCAGCATCTCGAGACCATCCTG GCCAACATTCTGAAACCC	19
250	CCTTAATAAAATAAACTTTCTAAATTGATCGATCTCTTGACCT CGTACTCTGCCTGCCTT	1
251	TTTAGTTATGATAGAGGAAATCACGCTATCGACTTCTTCCTG GTTTAGTCTTAGGAGGGT	12
252	GCTTCAAAAAATAAAACTAAAAATATGTTCGAACTCCTGACC TCAGGTAATCTATCCGCC	22
253	GGTATTGATATAAAATAGTGATTTTATATCGATCTCCTGATCT CGTGATCTACCTTCCTT	11
254	CAGTAACTTCAGTTTTTTATTTACTCATTCGAACTCCTGACCT CAGGTAATCTATCCGCC	22
255	GTCACACTCTTACCAAGCTAAAACTCTTTCGATCTCCTGACCT CGTGATTACAGGTGTGA	17
256	TTCCAAAATTCTGAGATTCTTAATTATGTCGAACTCCTGACCT CAGTCAATCTGCCCACC	5
257	AAGAATTAAGAGTAAAAATTATGTGAGGTCGAACTGCTGAC CTCGTTATCCACCCACTTC	12
258	TCCTCAAAAAAATTAAAAATAGAACTACTCGAGACCATCCTG GCTAATTTGGTGAAACCC	X
259	AATTTTAGACCAACATCCCTGATGAACATCGAGACCAGCCTG AACAATATAGTGAGACCC	18
260	GGTGGGTGGATCACTTCAAGTCAGGAGTTCGATCTCCTGACC TAGTGATCCACCCACCTC	19
261	ACGGAATCTGGATTGAATAAATAGGGAATCGATCTCTTGACC	12

	TCGTGATCCAATCACCTT	
262	AATAGAGACCATATTGGCCAGGATGGTCTCGAGGGTAGTCATGTTTTCCTTCCTGAGGAT	4
263	TACCAGGGATGTCTGAAGGAACTAAGAGTCGATCTCCTGACTTTGTGATCCTCCCACGTC	11
264	CTTGGAAGACAGAAAAATACCTAATCTTTCGAACTCCTGACCTTATAATCCCCCTGCCTT	15
265	AGCTGGGGTTAAATTCATTTAAATGAGTTCGAACTCCTGACCTCACGTAATTCTCCCACC	12
266	AGCAACTCTTAATCTTCAGGCTTCCTTCTCGATTTTAGATCTTTCCTGCTTTCTCTTGTG	1
267	CCTTACAAAAAGTTCTAAAGGGAGTTGTTCGAGGAGTATCTTTGTGGCTTTCTCTGTATT	22
268	TCTCTAAACATAAATTGTGAAGATTCCATCGAACTCCCGACCTCAGAGGATCTGTCTGCC	18
269	GAGCCCAGTAGTTCAAGGTTTCAGTGAGTCGAACTCCTGACCTCATGTGATTTGGCCGCT	3
270	GAGGCAGGCAAATCACGAGCTCAGGAGATCGAACTCCTGACCTCATGATTTGCCTGCCTC	22
271	TGGCTGATTTCCAGAGAAGAATACAAACTCGAGACCAGCCTTGACCAATATGGTGAAATC	11
272	TGAGAACAGATTCTCTAGAAAAGTCGCCTCGAGACCAGCCTAGATAACTTGGTGAAACTC	10
273	AAAGCCCTGTTATCAAATTAGGTCACAATCGAACTCCTGACCTCAAAAGATCTGCTCGCT	11
274	ATGTTGTAACCAAAAGAACTTAAACATTTCGATCTCCTGACCTTGTCATCCACCTACCTC	15
275	TTTTCCCTTCTCACAGGTATTGTGTTGTTCGATCTCTTGACCTCGTACTCTGCCTGCCTT	1
276	CTCCTTACTTCATTATGACTGGATTTGATCGAACTCCTGACCTGATGATCCCCCTACTTG	5
277	GAAAGCCAAGCTGGGTGGACTCAGGAGTTCGATGCAAAAATCCTCAATAAAATACTGGCA	18
278	AGTCACACATACAACTTTAGTGTACCATTCGATCTCCAGACCTTGTGATTTGCCTGCCTT	12
279	TTAATACAAAAAACTAATTAAAATTTAATCGAACTCCTGACCCCAGGTGTTCTACCCGCC	19
280	AGCGGTTTTTTTGTGATGTTAGAGATGTTCGAACTCCTGACCTCAAAAGATCTGCTCGCT	11
281	GTGGAGACCCTAACTGCTTTTAGGGAGATCGAGGAATTTATCCATTTCTTCTAGATTTTC	Y
282	TGTACAAGCATATTCATTGATGTCTTGTTCGAACTCCTTGACCTCAGGTGATCTACCTGC	20
283	TGGATCATGGGAGGCCTAGGTCGGGAGTTCGATGGTCTTTACAATTTGGCTTGTTTTTGC	1

284	ATTTCTTTCTTCTTCCCATTTTCTAAAATCGAACTCCTGACCTTGGGTAATCCACCCTCC	17
285	TTGTCTTTGCACCTTTTTCAAAAATTAGTCGAACTCCTGATCTTATGATCCACCCACCTC	9
286	CCTGAACCTTTTGGGCTGAACTTCACCTTCGAACTCCTGACCTCAAGCTATCCATCTGCC	5
287	CTATTCTTGCATTGCTACAAAGAAACATTCGATCTCTTGAACTCATGATCGCCTGCCTCA	10
288	AAATACTTTGTTATATATAAAATGGAGTTCGAACTCTTGACCTCAAGTGATCACCCATCT	12
289	GGTGTTCACCATATTAGTCAGGTTGGTCTCGAGGCTTCTCTGGGTTCATTTCCTTTAAAT	17
290	AATTTTAGACCAATATGCCTGATGAACATCGAACTCCTGACCTGGGCCTTCCAAAGTGCT	3
291	GAGAGTATAAGTGTTATGATTGGCCACTTCGATCTCTTGACCTCGTACTCTGCCTGCCTT	1
292	ATTTTCACCAAAACCTTTTAATAAGAATTCGAACTCCTGATCTCGTGATATGCTGGCCTC	3
293	AATTTGAATATAGTAGGAGCTATTTAAGTCGAACCCCTGACCTCATGATCTTCCCACCTT	17
294	ATGTATTCTTCAAAGTTAGTACTTTTGTTCGAACTCCTGGCCTTATGTAACCCACCTGCC	17
295	TCAAGAGGTGAAACCCTTATTGGAGGAATCGAACTCCTGGCCTTATGTAACCCACCTGCC	17
296	CCATTTGTTTGTATCCTCTTTTATTTCATCGATCTCCTGACCTCGTGCGCAAGAGCAATG	19
297	AACTGAAGGAGCTCTTAATGGCCAAAACTCGAGACCATCCTGGTCAACACTGTGAAAACC	8
298	GGTGAGAGAATTGCTTGACCCAAGGAGTTCGATCTCCTGACCTCAGATGATTTGCCTGCC	2
299	CAAAAATTGCCAAAAATAAGTAGGTTTTTCGAACTCCTGACTTCGGTGATCTACCTGCCG	6
300	CTCAAAGAACTTAAAACAAAATTACCATTCGAAGTCCTGACCTCAGGTAATCCTGCTGCC	X
301	CTAAACCAGTAAATGTTTAATAAAAAGATCGAGGGGTATCTTTGTGGCATTCTCTGTATT	5
302	TGTTTTCATTTTAAGATGAAGACAGCCTTCGAGACCATCCTGGCTAACATGATGAAATCC	3
303	ATGTGTTGTTCTCAATTTTGCACTTGCTTCGAACTCCTGACCTCAGTCAATCTGCCCACC	5
304	GATGGGCAGATTACTTGAAGTCAAGAGTTCGAACTCCTGACCTCAAGTGAAACTCCCATC	16
305	ATACAAGAGTCATGTACAAGACCTTGCTTCGAGACCATCCTGGCTAATTTGGTGAAACCC	X
306	CCAAGTAAAATGTTGTTCACTTTTGTGCTCGATGCAAAAATC	4

	CTCAATAAAATACTGGCA	
307	AATGTTCTCTTATGAACATCATTTAAGTTCGAACTCCTGACCT CAAGTGAAACTCCCATC	16
308	ACCTGAAGAAACATTGTTTTCTTAAAAATCGATCTCTTGACC TTCTGATCTGCCTGCCTC	14
309	AGAAGTTTAAGCTACAAAATAAAATGTTTCGAACTCCCGACC TCCAGTGGAAGTTCACAC	2
310	TCTCTCTGGCCACTTATTTATTTATTTTTCGATCTCCTGACCTG GAACATCACCCTTTTG	16
311	GGCAAGTGGATAGATTGAGCCCAGGAAGTCGAACTCCTGAC CTAAGGTGATCTGTCCACC	15
312	TACAACAGGCTCCAAGACAACACTTTATTCGAACTCCTGACC TCAGATGATTCATCTGCC	22
313	ACCTGATTTTGCATCGGAGAATTCACACTCGAGACCAGCCTG GCCAGGATGATGAAACCC	7
314	AGAATAAGAAGGGAAGATAAGGACAGAATCGAACTTCCTCC TTTAGCTCGGAGAAGTTTG	3
315	CCTTACGATGGGGTCCCAGCTGGACACCTCGAGACCAGCCTG AGAAATACGGTGAAACCC	2
316	GAGCTAAATCGCTTTGATTGGCTGTTCATCGATCTCCTGACTT CGTGATCAACCCACCTC	19
317	AATGTAAAGCATTACATGGAAACAGTACTCGAACTTCCTCCT TTAGCTCGGAGAAGTTTG	3
318	TTGCTGACTCTGGAGAGTCCAGGTGGTCTCGAGGACTATCTT TGTGGCGTTCTCTGTATT	5
319	TCTGAGAAACTTTTTTGTGAGAAACTGATCGAACTCCTGATC TCAGGAGATCCACCCACC	1
320	TTTCTCTAAGGTATGTTAAAACTCTTGTTCGAACTCCTGACCT CATTATCTGCCCACCTT	X
321	GAAATCAAGATAGGAATTTAAAAATTCTTCGAACTCCTGATC TCGTGATATGCTGGCCTC	3
322	CCAAAACAAAAATAGCACTGACAAAAGATCGATCTCTTGAC CTCGTACTCTGCCTGCCTT	1
323	TGACAAAGAAAAAGTATGCAAAAAGAAGTCGAACTCCTGGC TTCAAGTAAGAGTTCACTT	12
324	CAGCAAAGTTTTATTGTAAAATAAGAGATCGAACTCCTGACC TCCAGTCATCCACCCGCG	17
325	TCCAACATTCAGAGTTTATTTATTTGAATCGATCTCTTGACTT CATGATCCACCTGACTT	12
326	CAAAAAAATGAACAGTACTTTTTTCTTATCGACTTCTTCCTGG TTTAGTCTTAGGAGGGT	12
327	GTATTCTCAGTAGAAATTCTTTTATTTTTCGATCTCCTGACCT TGTCATTCTCCCATCTC	12
328	GAATAAATGAAAGGCCTAGCTAAAGCAGTCGAACTCCTGAC CTCAAGTAATCCAACCACC	7

329	TGAATGTCTTGGTAGTAATTTGACAATATCGATCTCCTGATCTTGTGATTCCCCCACCTT	4
330	TCATCTATATTTTCTTCTCTTAGGTATTTCGATGTTCATCAGGGATGTTGGTTTAAAATT	5
331	TGAGATTTTGTCTCAAAAAAAAAAAAAGTCGAACTCCTGACCTCAGGTCATCAGCCTGCC	22
332	AAGTTCAACAAGGTTGCCAATTACCAAATCGAACTCCTGACCTCAGGCAGTCACCTTCTT	5
333	TCTGTCTTTGCTTTTGCAGTTTTCCTCATCGAACTCCTGACCTGATGATCCCCCTACTTG	5
334	CACAGGGTGACAGGAGACAGAATGAGAGTCGAACTCCTGACCTCAGGTGAATAACCTGCC	3
335	TTATTTAGGAATGGTTTCCTTTAGCACTTCGAACTCCTGACTTCGGGTGATCCCTCCCAT	19
336	AAGATCGTTATTGCTTGAGCCCAGGAGTTCGAACTCCTGACCTCAAGAGATCTGTCCTCC	10
337	GTACCTGGGGGACAGAAATTGCAGTGAGTCGAACTCCTGACACCTCAGGTGATCTACCTG	8
338	CTGTTTTCTATCCTTCCTGATATTTCACTCGAACTCCTGACCTGATGATCCCCCTACTTG	5
339	TTCAAAAGACAAAAAAGACAACCAAAAGTCGAACTCCTGACCTGAAGGGATCTGTCTGCC	11
340	AGTTACTGAGATAAGAGTTTTTAAAAAATCGAACTCGTGACCTCAAGTGGTCTCCCTGCC	19

表1.c3

	探針位置			
編號	**開始1**	**結束1**	**開始2**	**結束2**
241	238274997	238275026	238365134	238365163
242	60389996	60390025	60596380	60596409
243	38732686	38732715	38808898	38808927
244	8657539	8657568	8694306	8694335
245	102796881	102796910	102896857	102896886
246	193686986	193687015	193848405	193848434
247	42437467	42437496	42510309	42510338
248	129820441	129820470	129899085	129899114
249	41359500	41359529	41456782	41456811
250	193673928	193673957	193929910	193929939
251	46827238	46827267	46879131	46879160
252	28600398	28600427	28758507	28758536
253	9477642	9477671	9685855	9685884
254	28559355	28559384	28758507	28758536
255	1411119	1411148	1635962	1635991

256	74329889	74329918	74537629	74537658
257	14620918	14620947	14668392	14668421
258	2349095	2349124	2530522	2530551
259	56075452	56075481	56154643	56154672
260	17318588	17318617	17372679	17372708
261	122523594	122523623	122688872	122688901
262	4152462	4152491	4285265	4285294
263	118323850	118323879	118462785	118462814
264	72172049	72172078	72358433	72358462
265	8956668	8956697	9058979	9059008
266	160208003	160208032	160387701	160387730
267	34726358	34726387	34750118	34750147
268	8623208	8623237	8834565	8834594
269	10166865	10166894	10269618	10269647
270	37737426	37737455	37945878	37945907
271	47310705	47310734	47407572	47407601
272	73661600	73661629	73903371	73903400
273	78798296	78798325	78965089	78965118
274	65465779	65465808	65596354	65596383
275	193663210	193663239	193673928	193673957
276	30107213	30107242	30144496	30144525
277	433730	433759	539298	539327
278	15699616	15699645	15806655	15806684
279	33182630	33182659	33332862	33332891
280	78857255	78857284	78965089	78965118
281	20398853	20398882	20504302	20504331
282	31369845	31369874	31617245	31617274
283	147709078	147709107	147802892	147802921
284	30923925	30923954	31156715	31156744
285	94043932	94043961	94067154	94067183
286	31866964	31866993	31910751	31910780
287	114529346	114529375	114726280	114726309
288	64438851	64438880	64470581	64470610
289	36002739	36002768	36030369	36030398
290	154855620	154855649	154966862	154966891
291	193673928	193673957	193889893	193889922
292	158507727	158507756	158576895	158576924
293	63803997	63804026	64033153	64033182
294	31302846	31302875	31324783	31324812
295	31224133	31224162	31324783	31324812

296	42697459	42697488	42770733	42770762
297	8422739	8422768	8694306	8694335
298	9545860	9545889	9601869	9601898
299	136360367	136360396	136523812	136523841
300	70972143	70972172	71218058	71218087
301	111524158	111524187	111570084	111570113
302	87152303	87152332	87177253	87177282
303	74394033	74394062	74537629	74537658
304	57315879	57315908	57359854	57359883
305	2530522	2530551	2568740	2568769
306	104786134	104786163	104802497	104802526
307	57156888	57156917	57359854	57359883
308	30757126	30757155	31037035	31037064
309	68135775	68135804	68359454	68359483
310	2330924	2330953	2525043	2525072
311	63969642	63969671	64108754	64108783
312	38681472	38681501	38808898	38808927
313	100034011	100034040	100078294	100078323
314	70700061	70700090	70796349	70796378
315	120597117	120597146	120697177	120697206
316	48332989	48333018	48564008	48564037
317	70698158	70698187	70796349	70796378
318	58515710	58515739	58574418	58574447
319	7826886	7826915	7998916	7998945
320	77765456	77765485	77954365	77954394
321	158501079	158501108	158576895	158576924
322	193673928	193673957	193858567	193858596
323	116931029	116931058	116967047	116967076
324	7668422	7668451	7813674	7813703
325	87683905	87683934	87814377	87814406
326	46756687	46756716	46879131	46879160
327	56273820	56273849	56415252	56415281
328	26166928	26166957	26347616	26347645
329	40800077	40800106	41041103	41041132
330	101857207	101857236	102113264	102113293
331	38973252	38973281	39095840	39095869
332	55874718	55874747	56069490	56069519
333	30097467	30097496	30144496	30144525
334	30481417	30481446	30652455	30652484
335	49754690	49754719	49902221	49902250

336	26780455	26780484	26959701	26959730
337	129796095	129796124	129899085	129899114
338	30016873	30016902	30144496	30144525
339	65076107	65076136	65228517	65228546
340	51524665	51524694	51712236	51712265

表1.c4

	4 kb序列位置				
編號	**Chr**	**開始1**	**結束1**	**開始2**	**結束2**
241	1	238271027	238275026	238361164	238365163
242	18	60386026	60390025	60592410	60596409
243	22	38732686	38736685	38808898	38812897
244	8	8653569	8657568	8694306	8698305
245	11	102792911	102796910	102892887	102896886
246	1	193683016	193687015	193848405	193852404
247	19	42433497	42437496	42510309	42514308
248	8	129816471	129820470	129899085	129903084
249	19	41359500	41363499	41452812	41456811
250	1	193673928	193677927	193925940	193929939
251	12	46823268	46827267	46875161	46879160
252	22	28596428	28600427	28754537	28758536
253	11	9477642	9481641	9685855	9689854
254	22	28555385	28559384	28754537	28758536
255	17	1411119	1415118	1631992	1635991
256	5	74325919	74329918	74537629	74541628
257	12	14616948	14620947	14668392	14672391
258	X	2345125	2349124	2530522	2534521
259	18	56075452	56079451	56150673	56154672
260	19	17318588	17322587	17372679	17376678
261	12	122519624	122523623	122684902	122688901
262	4	4148492	4152491	4281295	4285294
263	11	118323850	118327849	118462785	118466784
264	15	72172049	72176048	72354463	72358462
265	12	8956668	8960667	9055009	9059008
266	1	160204033	160208032	160387701	160391700
267	22	34722388	34726387	34750118	34754117
268	18	8623208	8627207	8834565	8838564
269	3	10166865	10170864	10265648	10269647
270	22	37733456	37737455	37941908	37945907
271	11	47310705	47314704	47403602	47407601

272	10	73661600	73665599	73899401	73903400
273	11	78798296	78802295	78965089	78969088
274	15	65465779	65469778	65592384	65596383
275	1	193659240	193663239	193673928	193677927
276	5	30107213	30111212	30144496	30148495
277	18	429760	433759	539298	543297
278	12	15695646	15699645	15802685	15806684
279	19	33178660	33182659	33328892	33332891
280	11	78853285	78857284	78965089	78969088
281	Y	20394883	20398882	20504302	20508301
282	20	31369845	31373844	31617245	31621244
283	1	147709078	147713077	147798922	147802921
284	17	30923925	30927924	31152745	31156744
285	9	94039962	94043961	94063184	94067183
286	5	31866964	31870963	31910751	31914750
287	10	114529346	114533345	114722310	114726309
288	12	64438851	64442850	64466611	64470610
289	17	35998769	36002768	36030369	36034368
290	3	154851650	154855649	154966862	154970861
291	1	193673928	193677927	193885923	193889922
292	3	158503757	158507756	158576895	158580894
293	17	63800027	63804026	64029183	64033182
294	17	31302846	31306845	31324783	31328782
295	17	31224133	31228132	31324783	31328782
296	19	42697459	42701458	42766763	42770762
297	8	8422739	8426738	8694306	8698305
298	2	9541890	9545889	9601869	9605868
299	6	136360367	136364366	136519842	136523841
300	X	70968173	70972172	71214088	71218087
301	5	111520188	111524187	111570084	111574083
302	3	87148333	87152332	87173283	87177282
303	5	74394033	74398032	74537629	74541628
304	16	57311909	57315908	57359854	57363853
305	X	2530522	2534521	2564770	2568769
306	4	104782164	104786163	104802497	104806496
307	16	57156888	57160887	57359854	57363853
308	14	30757126	30761125	31037035	31041034
309	2	68135775	68139774	68359454	68363453
310	16	2330924	2334923	2521073	2525072
311	15	63965672	63969671	64104784	64108783

312	22	38681472	38685471	38808898	38812897
313	7	100030041	100034040	100078294	100082293
314	3	70696091	70700090	70796349	70800348
315	2	120597117	120601116	120697177	120701176
316	19	48329019	48333018	48560038	48564037
317	3	70698158	70702157	70796349	70800348
318	5	58511740	58515739	58570448	58574447
319	1	7822916	7826915	7994946	7998945
320	X	77765456	77769455	77954365	77958364
321	3	158501079	158505078	158576895	158580894
322	1	193673928	193677927	193854597	193858596
323	12	116931029	116935028	116963077	116967076
324	17	7664452	7668451	7809704	7813703
325	12	87679935	87683934	87810407	87814406
326	12	46752717	46756716	46875161	46879160
327	12	56269850	56273849	56415252	56419251
328	7	26162958	26166957	26343646	26347645
329	4	40800077	40804076	41041103	41045102
330	5	101857207	101861206	102113264	102117263
331	22	38969282	38973281	39095840	39099839
332	5	55874718	55878717	56069490	56073489
333	5	30097467	30101466	30144496	30148495
334	3	30481417	30485416	30652455	30656454
335	19	49754690	49758689	49902221	49906220
336	10	26780455	26784454	26959701	26963700
337	8	129796095	129800094	129899085	129903084
338	5	30012903	30016902	30144496	30148495
339	11	65076107	65080106	65228517	65232516
340	19	51520695	51524694	51712236	51716235

表1.c5

	巢式PCR引子集	
編號	探針	引子ID
241	Hg38_1_238263911_238275028_238361690_238365165_FF	OBD183-1761
242	Hg38_18_60381033_60390027_60592857_60596411_FF	OBD183-1765
243	Hg38_22_38732684_38735694_38808896_38820306_RR	OBD183-1769
244	Hg38_8_8653178_8657570_8694304_8696852_FR	OBD183-1773
245	Hg38_11_102793985_102796912_102892680_102896888_FF	OBD183-1777
246	Hg38_1_193673926_193687017_193848403_193851226_FR	OBD183-1781
247	Hg38_19_42434303_42437498_42510307_42515066_FR	OBD183-1785

248	Hg38_8_129814184_129820472_129899083_129904705_FR	OBD183-1789
249	Hg38_19_41359498_41360630_41453565_41456813_RF	OBD183-1793
250	Hg38_1_193673926_193687017_193926526_193929941_RF	OBD183-1797
251	Hg38_12_46821759_46827269_46865284_46879162_FF	OBD183-1801
252	Hg38_22_28598306_28600429_28753634_28758538_FF	OBD183-1805
253	Hg38_11_9477640_9482033_9685853_9690988_RR	OBD183-1809
254	Hg38_22_28554668_28559386_28753634_28758538_FF	OBD183-1813
255	Hg38_17_1411117_1412617_1634184_1635993_RF	OBD183-1817
256	Hg38_5_74325511_74329920_74537627_74543794_FR	OBD183-1821
257	Hg38_12_14611683_14620949_14668390_14673240_FR	OBD183-1825
258	Hg38_X_2345279_2349126_2530520_2531841_FR	OBD183-1829
259	Hg38_18_56075450_56084543_56148926_56154674_RF	OBD183-1833
260	Hg38_19_17318586_17321060_17372677_17376287_RR	OBD183-1837
261	Hg38_12_122518390_122523625_122683979_122688903_FF	OBD183-1841
262	Hg38_4_4146074_4152493_4280585_4285296_FF	OBD183-1845
263	Hg38_11_118323848_118335396_118462783_118464333_RR	OBD183-1849
264	Hg38_15_72172047_72177812_72350397_72358464_RF	OBD183-1853
265	Hg38_12_8956666_8971971_9052225_9059010_RF	OBD183-1857
266	Hg38_1_160202241_160208034_160387699_160390980_FR	OBD183-1861
267	Hg38_22_34722666_34726389_34750116_34757594_FR	OBD183-1865
268	Hg38_18_8623206_8633807_8834563_8839858_RR	OBD183-1869
269	Hg38_3_10166863_10171451_10267732_10269649_RF	OBD183-1873
270	Hg38_22_37732067_37737457_37944696_37945909_FF	OBD183-1877
271	Hg38_11_47310703_47316087_47405431_47407603_RF	OBD183-1881
272	Hg38_10_73661598_73666900_73900120_73903402_RF	OBD183-1885
273	Hg38_11_78798294_78806874_78965087_78972317_RR	OBD183-1889
274	Hg38_15_65465777_65469194_65573794_65596385_RF	OBD183-1893
275	Hg38_1_193655980_193663241_193673926_193687017_FR	OBD183-1897
276	Hg38_5_30107211_30110692_30144494_30156052_RR	OBD183-1901
277	Hg38_18_427721_433761_539296_550050_FR	OBD183-1905
278	Hg38_12_15684229_15699647_15801742_15806686_FF	OBD183-1909
279	Hg38_19_33180896_33182661_33328178_33332893_FF	OBD183-1913
280	Hg38_11_78848038_78857286_78965087_78972317_FR	OBD183-1917
281	Hg38_Y_20386719_20398884_20504300_20520750_FR	OBD183-1921
282	Hg38_20_31369843_31372347_31617243_31621976_RR	OBD183-1925
283	Hg38_1_147709076_147716288_147799500_147802923_RF	OBD183-1929
284	Hg38_17_30923923_30926868_31150085_31156746_RF	OBD183-1933
285	Hg38_9_94033256_94043963_94058786_94067185_FF	OBD183-1937
286	Hg38_5_31866962_31870685_31910749_31916612_RR	OBD183-1941
287	Hg38_10_114529344_114531737_114712352_114726311_RF	OBD183-1945

288	Hg38_12_64438849_64448996_64463496_64470612_RF	OBD183-1949
289	Hg38_17_35998435_36002770_36030367_36035489_FR	OBD183-1953
290	Hg38_3_154848097_154855651_154966860_154974838_FR	OBD183-1957
291	Hg38_1_193673926_193687017_193882412_193889924_RF	OBD183-1961
292	Hg38_3_158501077_158507758_158576893_158580745_FR	OBD183-1965
293	Hg38_17_63801674_63804028_64026936_64033184_FF	OBD183-1969
294	Hg38_17_31302844_31307239_31324781_31330350_RR	OBD183-1973
295	Hg38_17_31224131_31234469_31324781_31330350_RR	OBD183-1977
296	Hg38_19_42697457_42701566_42762015_42770764_RF	OBD183-1981
297	Hg38_8_8422737_8427114_8694304_8696852_RR	OBD183-1985
298	Hg38_2_9540565_9545891_9601867_9603721_FR	OBD183-1989
299	Hg38_6_136360365_136366092_136518089_136523843_RF	OBD183-1993
300	Hg38_X_70970170_70972174_71213839_71218089_FF	OBD183-1997
301	Hg38_5_111518564_111524189_111570082_111578257_FR	OBD183-2001
302	Hg38_3_87150717_87152334_87167991_87177284_FF	OBD183-2005
303	Hg38_5_74394031_74404922_74537627_74543794_RR	OBD183-2009
304	Hg38_16_57311821_57315910_57359852_57364698_FR	OBD183-2013
305	Hg38_X_2530520_2531841_2565626_2568771_RF	OBD183-2017
306	Hg38_4_104772558_104786165_104802495_104808042_FR	OBD183-2021
307	Hg38_16_57156886_57158385_57359852_57364698_RR	OBD183-2025
308	Hg38_14_30757124_30766270_31037033_31039641_RR	OBD183-2029
309	Hg38_2_68135773_68139581_68359452_68365969_RR	OBD183-2033
310	Hg38_16_2330922_2335048_2522663_2525074_RF	OBD183-2037
311	Hg38_15_63964667_63969673_64105032_64108785_FF	OBD183-2041
312	Hg38_22_38681470_38688482_38808896_38820306_RR	OBD183-2045
313	Hg38_7_100032804_100034042_100078292_100082051_FR	OBD183-2049
314	Hg38_3_70698156_70700092_70796347_70803301_FR	OBD183-2053
315	Hg38_2_120597115_120611528_120697175_120701136_RR	OBD183-2057
316	Hg38_19_48331809_48333020_48561743_48564039_FF	OBD183-2061
317	Hg38_3_70698156_70700092_70796347_70803301_RR	OBD183-2065
318	Hg38_5_58504296_58515741_58568633_58574449_FF	OBD183-2069
319	Hg38_1_7824282_7826917_7994232_7998947_FF	OBD183-2073
320	Hg38_X_77765454_77772092_77954363_77959007_RR	OBD183-2077
321	Hg38_3_158501077_158507758_158576893_158580745_RR	OBD183-2081
322	Hg38_1_193673926_193687017_193851226_193858598_RF	OBD183-2085
323	Hg38_12_116931027_116934300_116959223_116967078_RF	OBD183-2089
324	Hg38_17_7665587_7668453_7811362_7813705_FF	OBD183-2093
325	Hg38_12_87675372_87683936_87811804_87814408_FF	OBD183-2097
326	Hg38_12_46746378_46756718_46865284_46879162_FF	OBD183-2101
327	Hg38_12_56269538_56273851_56415250_56418662_FR	OBD183-2105

328	Hg38_7_26158147_26166959_26344790_26347647_FF	OBD183-2109
329	Hg38_4_40800075_40804237_41041101_41047221_RR	OBD183-2113
330	Hg38_5_101857205_101863977_102113262_102119968_RR	OBD183-2117
331	Hg38_22_38970835_38973283_39095838_39099483_FR	OBD183-2121
332	Hg38_5_55874716_55883166_56069488_56074299_RR	OBD183-2125
333	Hg38_5_30097465_30100060_30144494_30156052_RR	OBD183-2129
334	Hg38_3_30481415_30486448_30652453_30660274_RR	OBD183-2133
335	Hg38_19_49754688_49759950_49902219_49904931_RR	OBD183-2137
336	Hg38_10_26780453_26788708_26959699_26967983_RR	OBD183-2141
337	Hg38_8_129796093_129803717_129899083_129904705_RR	OBD183-2145
338	Hg38_5_30008006_30016904_30144494_30156052_FR	OBD183-2149
339	Hg38_11_65076105_65079526_65228515_65232564_RR	OBD183-2153
340	Hg38_19_51523072_51524696_51712234_51719472_FR	OBD183-2157

表1.c6

	巢式PCR引子集		
編號	引子序列	引子ID	引子序列
241	AAAGCGGGGTGTCAAGCGGGGGCC	OBD183-1763	AGCCGTAGTACCTGCGGCAGGCACA
242	CAAGTTATGCGCGGCATCTAATTTT	OBD183-1767	TCACTATCCATATACGAGGTGGC
243	GTGTATTGCCGACTGCCCTTGTC	OBD183-1771	GATGTTCCGTTTGGTCTATAGCA
244	AATGGTGGAGAAGGACGGAAACCA	OBD183-1775	GTGTGTTGTCTCTCATTTCTGCTTA
245	AATTACTATTGACTGCGAGTTCGCT	OBD183-1779	ACCTTGGTGGCGCCCCGTACGCCGT
246	CTAGTGACCCGATGAGTTGCCGA	OBD183-1783	CAGGTAGCTGCCCTCACGGGACT
247	TTTTAGGTGCGTGATAGACTATG	OBD183-1787	GCACTTTACACTGGTATAGGGAC
248	ACTAGGGTCCTTCAGAGCCGGTAG	OBD183-1791	GTGTGTAGCCGAGCTAATAAAACG
249	TGTATGGCATACGTGTACGAGCT	OBD183-1795	TGCGTGCTAACGGAACGCTTCAGGC
250	CTGCAGGAATCAAATCGCATCCGC	OBD183-1799	ATCGAAATTATGGTACCGAGAGGC
251	GTGCACATGAGATCGGGCACAGAT	OBD183-1803	AGCACCAGGCATTCGTTTCATAAC
252	CCCCGCTACCTAAGAGGCTAAGG	OBD183-1807	GCTGCCTAAGGGTCTCTTTGGTC
253	GGTGATGCCCCAAACAGTTTGTTAT	OBD183-1811	GAACAGTCGGGCTTTCTAGGGCG

254	CTCAGTCTCCAAAGAATCCGAAAGTA	OBD183-1815	GGCTGCCTAAGGGTCTCTTTGGTCTA
255	GAGGAGAGTGGCAGAAGGACCAA	OBD183-1819	CCTGGCTGTCATCCAACCACCAC
256	GCCTCACAGAGCCTCATTTCCAC	OBD183-1823	TAGTGGATTCCTGGCTGGGCACG
257	AATCCTTTAACGGTCCTCGTGCGAT	OBD183-1827	ACTTATACCCACGTACCCAACATGT
258	CTCCAGAAGCCGTCTTATGTGGGC	OBD183-1831	GATGTCGATGAGCAAAAGTGGGTGG
259	ACGCGACGTTACTCTGATGGCAA	OBD183-1835	GCTCGGGAACTGCCTGGACGCCCTC
260	GTATTCATCATGATAATGCGTAGG	OBD183-1839	CGTGTATACATAAAGACTGTACGGT
261	GCACTACCAGTTGCCGTTACACTA	OBD183-1843	CATTTACACTGGGGTGAGATACG
262	GCCTTGCGAGGGCCATCCTATTT	OBD183-1847	TGAGAGGAAAAATATATCGTTAGT
263	CTCGGTGGGTTAAATATGATTTGG	OBD183-1851	AAGAACTTAGTTTTGAGATTATCCC
264	GGACGAGACGCGCATGGGGTGAC	OBD183-1855	GCGTAAGTTCAACTATGATTCTATT
265	GCCCCACCTGGTCCACAGAAATC	OBD183-1859	GCGGAACTTCAAAGGTCAGGTGC
266	CAGCCTGTCCTGCAATGAGGAATAT	OBD183-1863	ATCTACGAGCTGCCCTCCCTATAC
267	ACAGAATTCGAAACATCTGGGGATT	OBD183-1867	CGCAGGGCCGTAAGTTACGCTCAGA
268	TTTATGACTTACATCTCTATAGG	OBD183-1871	TCAACTGCCCTTGGGAGACCAATGC
269	ATACAACTAGGACTAGGGCGCACG	OBD183-1875	AACCTCCATGTGTTCGGCTAAAAG
270	TTAGGCCCGTATGTACAGTCACCG	OBD183-1879	CCATGCATTTCTTAATCCTTTGTC
271	CTTGAGCTCGGAGAAATTACAGTC	OBD183-1883	CCGAAATTGTTTATGACTTAGTA
272	CAGTGACAAATTCTTGCCACGCGGT	OBD183-1887	CACCCTCCAAAAGAGCAGCAGAT
273	CGAGAGTCCAATTCACTTGTTAG	OBD183-1891	TTTGGGCGTAGCTGTGTCGAGTGC
274	CCGCAGCAACTACACTCAGCCTT	OBD183-1895	ATAATGGACTGGGCTGGGCGTGG
275	ATAGGGCCGTGTAGAGGATCTCAAA	OBD183-1899	CCGTCTCGCTGTACTAACTCGCA
276	AAAAAGGAAACAGCCGT	OBD183-1903	TCAAGCGAGCACGTTTT

	CGCCTTGA		TTGCAGT
277	GCCGAGAACATTCACCG CTTTCC	OBD183-1907	TACCAGCTCGAGGTGTT AATACC
278	AAGTCAATGCGTCGATG ACGTGGGT	OBD183-1911	ATTGCAGAAACGTCACG TCCTGGCC
279	CGCACCACATTTTATTTC CTACAGTC	OBD183-1915	TGTGACTGTGCTACCAC CAACTACGG
280	CCCGGGCCCACTTGTTTT TACCCAT	OBD183-1919	TCGAATATCGAGCTCCA TCAGGCT
281	AAGCACATTAGGCTCAAT GTGTACA	OBD183-1923	CGCAGTATGCAACGCTT GCGGACCG
282	CAATGAGGGCAGAGGAA TAGAGGAAT	OBD183-1927	TGAGATGATGGGCACCA GGGTAATGG
283	CATTCCTGGGATTATTAG GCGTGGC	OBD183-1931	CGTCCGCAGACATGTCT CTTCGGTA
284	GTTGTCCCAGCCCTAAGT AGATGATA	OBD183-1935	AGTGCTGTGACATTGGT GGTAGTGGC
285	TAAGCTTTCTAGGAGTCA TCAAG	OBD183-1939	CGGCCCTATCCTGAGAT TGGTATT
286	CCACGGCATTTACTGTGC TCCAG	OBD183-1943	AAAGCAGGAACTGGCTG GGCGTG
287	GATAGTTCTTTAGTAGCG CACTC	OBD183-1947	ACACACGTCGTTGTATC ATCAATGT
288	TTATTCGCTCAGCGTCAT CGAAA	OBD183-1951	GTCTTCATAGCGAGGAC TACGCTGA
289	CCGTTCAGACGGCTAGAC TCAGCAG	OBD183-1955	TGTTTAAAAAGGTGCCC GAGTGCG
290	AAAACTGACGGGTCGAA CTCTGCT	OBD183-1959	ATGCTACCAAGAGCCTA ATGGGAT
291	TCCTGCTCTCGTCCATGG TATTCGC	OBD183-1963	GCAGGAATACTTGTGGG TGCGCAC
292	AGGTCACCTAAGAAGGG TTGCAT	OBD183-1967	CCTGCACCGGTTATATG AACTACA
293	TGAAAAGAGTGCTCCTGC GATAAAT	OBD183-1971	AGAGAGCCTTTAGAAAC ACACCG
294	GTTCTCTATGCGCAGGTC CCCTTCG	OBD183-1975	CTGTAAGGAAGTTAGTC AAGACGTA
295	CTTCTCTATCTTCCACAA CCTCACCA	OBD183-1979	TAAATGGGAGCAGCCAC AGTGAGGAC
296	TTGAATCGTAGAATACCA GTAGTTT	OBD183-1983	GGGTCCATGCGAAGGGT GGCAGACC
297	GTGTTTACCAATGTTCCA CCCCC	OBD183-1987	GTTTTATAAAGTGAGGA CGGACCG
298	CGCGCCTTTTGGGAAGCT CACGT	OBD183-1991	GTAGTGGCCACCCTCTT CAAGCT

299	AATACCTACCCTTGCCCTTCCCACCA	OBD183-1995	AATCTCTCTCGGTGTTTTAGCCGTCA
300	AGTGCCTTCAAGACCCCCAAGATC	OBD183-1999	GGAAAGTGAGTATATTGCTAGGG
301	CCACCAACACCACTTTCAAACCCGCA	OBD183-2003	CAAACTACATCCTGTGAGCCAAACTA
302	AATTCTCACGGGCAAAGCAGATG	OBD183-2007	ATGGCGAGTCGCGCTTTCCGTAAT
303	CCCTGAGGTAGCACAACAGAACC	OBD183-2011	TAGTGGATTCCTGGCTGGGCACG
304	CCCCTAACTTCCTCTTCTCACCC	OBD183-2015	GATAGTGAGCCCAGAGCAGTGGC
305	CTTGCCCGCTCCTGGACAGGTGGTC	OBD183-2019	TACGATGTGACAGAGCCGGTCCCG
306	TTAAAAAGACGAACACTCTGGGTT	OBD183-2023	TTTATTTTAGCGTCTAGGGCCTGAG
307	TAAAAATCTGTCAAGCCAGTTAG	OBD183-2027	TTCATCCAAGCTCCAAGCTACGA
308	AGCGTACACGAGCGACAACGACGC	OBD183-2031	TAAAGACTTAGAGTTCCGGCCCAC
309	CCTCTGACGCAATGAGCCGCAAG	OBD183-2035	CTGTATACTGCCACACATTAGAG
310	CTCCGTGAGTCCTCTTAGCCCCT	OBD183-2039	CAAGCCAAGGTTCAAGCCCTGAC
311	AAATCGGGCCCTACTGCTACTGGCA	OBD183-2043	GCGTCACCCGGCTCCGAAAATATG
312	TCTCCTATACACTTGTGTACCCTAG	OBD183-2047	CGATGCTCTCTATGGTTCAATCC
313	GTATAAGAAGATGCGTCGGTGCT	OBD183-2051	TCGACAACCAGTATGGTGATTCCT
314	TTCGGCCTTGCAGGCTGGCACAC	OBD183-2055	ATCCCCTAGTCGAGATGCATGTGA
315	AAGGAGTTCCACCCTCCGAAGGATC	OBD183-2059	CGATTTTCGGGCGAAGGGGTTTGTA
316	GAACACGGAGAGGTATCCCGCCCG	OBD183-2063	AGGACACTGTGTAACGTAACTGTA
317	TTCATCGTACCGTATCTGCCGTTA	OBD183-2067	GAGTACAGATAATTGTGGAGAACGT
318	TGAGTCCAACGCGTAGGCTAGAA	OBD183-2071	GGTGGCTAGGCTGTCTTGACCCAAT
319	TGTAGACAGTGTGCACTAGACACT	OBD183-2075	GCTTTGGCGCGTAAAGGTAACCCA
320	TGTGAAAAAACTCCCCTCAGCCATC	OBD183-2079	CGGACTTCGGTTATGAAGGGTGAAA
321	TCGGATGGTGACTGGAG	OBD183-2083	GGCACTCTCGTACAAAA

	CGTTAT		GCGTTT
322	ACAGGATCCCAGCCTTAGCGGCCT	OBD183-2087	TGCGGTGCGTGTATTCGCAGTCGAA
323	AACTGGAATCCCGCATTGCGGTAGC	OBD183-2091	ACACATGCACCTCGAGTGGTTCT
324	GAAAACTCGTGGAGTTGGTCCGCG	OBD183-2095	AACCAACTGGCTTTCTCGGTCGG
325	TAGCGAATACGAGTGTACCGAAC	OBD183-2099	CCAACCGTAGTTATCTTCGTAACA
326	ACAGGAACCATGATCAATTGACC	OBD183-2103	TCTAGTTACCCCACCAGAAGGAC
327	GCCGAACGGATTCTGATCATAGT	OBD183-2107	AACCTGTCAAACGACGCCACTTCG
328	TCTCCATCCCTCCTCCTCCAGAT	OBD183-2111	TTACGCCACCACACTTCAGCCCC
329	TGAAGCAAAGTTCTGACGGCTAT	OBD183-2115	CCAGTTGAGACTCTCGGACTACAAC
330	CGCAGTTTCCACGGAACTAGATTGC	OBD183-2119	GTCCTAAGTAGAGGATTCCAAGGCG
331	TTCGTGTGCAGAATAGCGGCATCG	OBD183-2123	TACGGGCTCGTCTTAACGGGAAT
332	CTTTGGCTGTTTTCTCACATCGTGG	OBD183-2127	GTTAGTGGGGACACGGCGAACCACT
333	CTAACTCGAACATTAGACGTGCT	OBD183-2131	TGCAGCGTCGATGCATGGGTGGTC
334	GTCCGACATGGTTGAAGTTTTCCTA	OBD183-2135	CTGTCGATCGTCGCCGCAATGGC
335	TCCGGTGAGATGGAGGCATTGGTCT	OBD183-2139	GACACTGCCAAGATCAGTCTGGC
336	CCTCATGTATCGAGGCAGATGGGG	OBD183-2143	CCACAGATTCTTTAAACATACCCT
337	ACTCTAGTACAAGTCATCTCGAGCC	OBD183-2147	ACTATTCTATGGCAAGTGCTGAG
338	TCGCGTGATGAACCGCTTCGAGCGC	OBD183-2151	GTCTGAATCTTATGTGGAAACCC
339	AAATAAATGGGCGTGGTGGCACATA	OBD183-2155	GTTCTGTTTCTTGACCAGTGTGTTGA
340	CTACATCCAGTATCTTCAGAAAACAC	OBD183-2159	CCACTCTTGACCTCAGTTTCCCTGTA

表1.c7

	qPCR引子集	
編號	探針	qPCR引子ID
13	Hg38_1_99631771_99639876_99708395_99714403_FF	OBD183-q765

14	Hg38_19_34387270_34393741_34499918_34506554_FR	OBD183-q425
16	Hg38_1_99659612_99670382_99708395_99714403_FF	OBD183-q709
20	Hg38_6_132703799_132711156_132757539_132761457_FF	OBD183-q537
34	Hg38_7_29905017_29911792_30016613_30019069_FR	OBD183-q733
35	Hg38_8_5120591_5125403_5295149_5302540_FF	OBD183-q753
36	Hg38_1_109341939_109348573_109359719_109366704_RR	OBD183-q481
37	Hg38_8_5115633_5120591_5295149_5302540_FF	OBD183-q785
40	Hg38_22_34722666_34726389_34750116_34757594_RR	OBD183-q521
45	Hg38_16_20282299_20286605_20445721_20457266_FR	OBD183-q457
46	Hg38_8_47127019_47130852_47283075_47288879_FR	OBD183-q677
47	Hg38_6_46130577_46139255_46168740_46175484_FF	OBD183-q685
48	Hg38_1_241870739_241874965_242033568_242040771_FF	OBD183-q569
50	Hg38_15_34886920_34889054_34974237_34980574_FF	OBD183-q693
58	Hg38_6_13822111_13826619_14070076_14075830_RF	OBD183-q609
62	Hg38_1_27966549_27971202_28029814_28033207_FR	OBD183-q713
65	Hg38_7_66298919_66305803_66392051_66398673_FF	OBD183-q797
70	Hg38_12_45013447_45019401_45077155_45087147_FF	OBD183-q517
71	Hg38_16_12325962_12334419_12372790_12375829_FF	OBD183-q637
73	Hg38_3_157551093_157568769_157606016_157614360_FF	OBD183-q621
76	Hg38_6_13822111_13826619_14011144_14016925_RF	OBD183-q721
77	Hg38_5_55874716_55883166_56069488_56074299_FR	OBD183-q441
78	Hg38_1_109359719_109366704_109611657_109614647_RF	OBD183-q541
79	Hg38_19_50732808_50735232_50961391_50964466_RR	OBD183-q573
80	Hg38_8_55800026_55805370_55942582_55947045_FF	OBD183-q741
82	Hg38_X_70952076_70955538_71213839_71218089_FF	OBD183-q773
83	Hg38_11_93057516_93069988_93228754_93237221_FR	OBD183-q597
85	Hg38_20_4763308_4769930_4885862_4890450_FF	OBD183-q581
90	Hg38_19_38895868_38902769_39089148_39091382_FR	OBD183-q789
91	Hg38_1_17044824_17050263_17192218_17198113_FF	OBD183-q761
92	Hg38_5_76420596_76423340_76572657_76583168_FR	OBD183-q505
93	Hg38_20_34791262_34795203_34932162_34933974_FF	OBD183-q653
94	Hg38_12_8119443_8124985_8341969_8343630_FF	OBD183-q625
96	Hg38_1_109359719_109366704_109385998_109391476_RF	OBD183-q501
97	Hg38_1_187499122_187506399_187600952_187612332_FF	OBD183-q473

表2.a

	qPCR引子集		
編號	序列	qPCR引子ID	qPCR反向序列
13	CCACTAAATGGAGCAGTTGTTTGACCTC	OBD183-q767	GGAGAGGACGAGGAGGTCAGTTCAGAG

14	GTGCCCACTGCCCACAG GACGCA	OBD183-q427	CCGCAGGTGGCAACGACGAC ACAGTAGG
16	CACACTTAGGGTCTCCTT CTATGTCCCC	OBD183-q711	GGAGAGGACGAGGAGGTCAG TTCAGAG
20	GGCGTTGTGCGGTTTTGA GAATAGTTCC	OBD183-q539	TCGTTGCTAAAAGAGCCTACT TCCTAAT
34	CCCACATAGAAGAATGA AGTTGGACCCC	OBD183-q735	GCTGGTCTAAACAGAAGGAA GAGAGGTG
35	GCGTGTATTTCTGATTCT TGCCACCTCC	OBD183-q755	GAAAAGTGTGTAGGTCAGGT GTAGTGGC
36	CCCCTCCGTGGGACAGG AACAGTT	OBD183-q483	GAGTCACCTTTCGTCTTTTCC ATTTCCC
37	CAAGAGCAAGCCACGGG AGGTAGGGC	OBD183-q787	GAAAAGTGTGTAGGTCAGGT GTAGTGGC
40	GGTGAAAGGAAGGTGTG TGAAGTGAACC	OBD183-q523	ACATTCTTTCATCTACTCTTC CGTCTGC
45	GGCAGAGAAGCCAGAGT GAGCCAAGAC	OBD183-q459	CACGAGGCAACTCACCCAGA GACCCC
46	AGAAAGTCCCAACTCTG AAGAAGTCCTA	OBD183-q679	GCTGTTCCTCCATCTCTTGCC TTCTCCT
47	AATCATCATCTCTGGAGC CTCTGAAAGC	OBD183-q687	CTCTGCTGGGTGTCATTCCTT TTCCCTC
48	GTGTTCATTGTGAGATGT GTGACTTGAC	OBD183-q571	GCCCCGCCTGTCTGATTTCTT ATTGTTG
50	CCACTCCTTCTCTACAAC TTCACCAGAT	OBD183-q695	TTTGAAAAGACCGTCGGGTG CGG
58	GGAAGAAGGGACAGGTC AGAGAGGTGAG	OBD183-q611	GGTGTCTCGCTCTGTCGCCAG GCTTCAG
62	CCCCATACTCCTCTCCCC TGTGGTTCAG	OBD183-q715	CAGTGCCCTGGTGAAGCAGA GGTTCTC
65	TAAGACCTGTAAACTGG GAGAGCCC	OBD183-q799	GGTGCCCAGGAAACAGCAGT GAACAAGG
70	GCCAATAAAACAAATAA AAGCCCCTCAC	OBD183-q519	GCCCTGTGTTCTGTCTTATCT CTCCATC
71	GCACACCGCCAAGGAAC TCGCTTAGC	OBD183-q639	TCTCTCTCCAGGGTCTCTCCC AGGCTGC
73	GGTCTTATTCATTCTGTG GGTTGGCTCT	OBD183-q623	CCATCAGGTTTGGTGTCTGGT GGAGGC
76	CGGCTCCCTCCAGGCTCT GCTCA	OBD183-q723	GGTGTCTCGCTCTGTCGCCAG GCTTCAG
77	GCATCCTTCTCTCACTGG GTATTCCTTT	OBD183-q443	ATAACCAGCCACAGTTCTCAC TTTGAAT
78	CCTGGGTTGCTGGTGTCT GTGTTTCCTC	OBD183-q543	GAGTCACCTTTCGTCTTTTCC ATTTCCC
79	CTTGCTTAGAAAACCATC	OBD183-q575	GAGACAGGCTGAGGGAGAAC

	TGTGCCTGGG		CCAAGC
80	GTAGTAGACGCATTCTGTGGAGTTGGAG	OBD183-q743	GCCGCTGGCAACCTCCGCTCTTTCTG
82	TAAACAGGTTCATCCAGGTTGTGAGGTA	OBD183-q775	CTGGGACAGAAGGAGAGGGAAAGAGTTG
83	CAGACCGATGGAATGGAACCGAGAGCCC	OBD183-q599	GCCACAAGGCAACTGGTCTGAATGTTTC
85	CTGACGAGGTGTCTGCTCCATTGCCTG	OBD183-q583	GTGCCTGGCTTCCTTCATCTACCAAGAC
90	CATCTGCTTTTGTATGGTTGTGAGC	OBD183-q791	GGAATGTTTCTGCTAAATCCAAAAGTAG
91	GCCTGTGGGATGACTGTGGTTACCTGC	OBD183-q763	GGAGGGCAGGAAGGTTGGTGATGGGCAG
92	CCAGGCAATGCTACGCCAGGCTTTGTGC	OBD183-q507	CCTCTTGACCTCCAGCGAGACCACTCC
93	GGGTTCATCCTCGGTAGAGCGGCAAAGC	OBD183-q655	CCCCACCCAATGCTGTCCTTCCTTTGAT
94	CTGTGAAGGTGTGGAGAGCACTTAGGGA	OBD183-q627	CCACACACACCACCCAGGAGCCCAGTG
96	CACTGAAGCAAGTTCTGGAGGTGGTAGT	OBD183-q503	GAGTCACCTTTCGTCTTTTCCATTTCCC
97	GCTGATGCTTCTGGCACCTGGACCAC	OBD183-q475	TTGAACATTAGGCTGGGCACGGTGTCTC

表2.b

	qPCR引子集	
編號	探針ID	探針序列
13	OBD183-p765	TCAATTCCACAAATCATCGAGACCAGCCTGACTG
14	OBD183-p425	ACAACTTCGAACTCCTGACCGAAGCGATGATCC
16	OBD183-p709	AGCACTTGAACTTACATTAAGTCATCGAGACCAGC
20	OBD183-p537	TGTGAATCGAACTCCTGACCTCAAATAATTCGCC
34	OBD183-p733	AATGAATCGAACTCCTGACCTCAGAAGATTTGCC
35	OBD183-p753	ACTCCCAAGCCATTGTGTTGTCTAAATCGAACTCC
36	OBD183-p481	TACATGTCGAACTCCTGACCTCAGGTAATCTTCC
37	OBD183-p785	ATGTTGTCGAACTCCTGACCTCAACTGATTTGTC
40	OBD183-p521	ACTGAAATTCGAGGAGTATCTTTGTGGCTTTCTC
45	OBD183-p457	ACCATTTGTCTAACCAATCAATCGAACTCCTGACC
46	OBD183-p677	TGACTGAAATTATCTTCGAACTCCTGATCTCAGG
47	OBD183-p685	ATTAAGCCTTTCGAACTCCTGACTTTGTGATTCGC
48	OBD183-p569	TCCACTAGAAGACTTCGAACTCCTGACCTTGTGC
50	OBD183-p693	ATAAATTCGATCTCTTGACCTTGTGACTCACCCG
58	OBD183-p609	TCAAAATCGATCTCCTTACCTCGTAATCTGCCTG

62	OBD183-p713	AGGCACAGTCAGTTTTACATTCGAACTCCTGACC
65	OBD183-p797	AGGGCTATTTCGAACTCCTGACTTGAGGTGATTC
70	OBD183-p517	TTCAAATCGAACTCCTGACCTCATTACCCACCC
71	OBD183-p637	AATCATCCCCGGGTGCATTCGAACTCCTGACC
73	OBD183-p621	TGTGATGTGAGGTAAGAGTTCGATCTCCTGACC
76	OBD183-p721	TGCCTTAGTCGATCTCCTTACCTCGTAATCTGC
77	OBD183-p441	ACACACTTCGAACTCCTGACCTCAGGCAGTCAC
78	OBD183-p541	AGCCAAGGTGGAGAACTACTGAGGTCGAACTCC
79	OBD183-p573	TCCATTTCATCGAACTCCTGACCCTAGGTGATCC
80	OBD183-p741	ACCTAGATACATCGAACTCCTGACCACAGGTG
82	OBD183-p773	AGAGCAACAGCCATCGAAGTCCTGACCTCAGG
83	OBD183-p597	AGGGAAGTTTTATCGAACTCCTGACCTTGTAATC
85	OBD183-p581	AGTCTATCGAACTCATGACCTCAGGTTATCCTCC
90	OBD183-p789	TGCACTGACACAGCAGAGTCGAACTCCTGACC
91	OBD183-p761	TCTAAGTCGAACTCCTGACCTCAGGTTATCCATC
92	OBD183-p505	TGGTGCTTGGTCGAACTCCTGACTTCAGGAAATC
93	OBD183-p653	TGCATGATCGAACTCCTGACCTTACGATCCACC
94	OBD183-p625	TCATAACTCGAACTCCTGACCTCATGATTTCCTG
96	OBD183-p501	TGTGCTGTAGATGAGGAATCGAACTCCTGACCTC
97	OBD183-p473	AGTTATACAGAGATAAAATAAGTCGAACTCCTGG

表2.c

	qPCR引子集	
編號	探針ID	探針序列
13	OBD183-p767	TCAGTCAGGCTGGTCTCGATGATTTGTGGAATTG
14	OBD183-p427	TCGCTTCGGTCAGGAGTTCGAAGTTGTCAAAACC
16	OBD183-p711	AGGCTGGTCTCGATGACTTAATGTAAGTTCAAGTG
20	OBD183-p539	AGGTCAGGAGTTCGATTCACATACTTCTTTCTGA
34	OBD183-p735	TCTTCTGAGGTCAGGAGTTCGATTCATTTTGAGT
35	OBD183-p755	AGGAGTTCGATTTAGACAACACAATGGCTTGGGAG
36	OBD183-p483	AGATTACCTGAGGTCAGGAGTTCGACATGTAAA
37	OBD183-p787	TCAGTTGAGGTCAGGAGTTCGACAACATTAGTAAG
40	OBD183-p523	AGAGAAAGCCACAAAGATACTCCTCGAATTTCAG
45	OBD183-p459	AGGTCAGGAGTTCGATTGATTGGTTAGACAAATGG
46	OBD183-p679	ACCTGAGATCAGGAGTTCGAAGATAATTTCAGTC
47	OBD183-p687	TGCGAATCACAAAGTCAGGAGTTCGAAAGGCTTA
48	OBD183-p571	AGCACAAGGTCAGGAGTTCGAAGTCTTCTAGTGG
50	OBD183-p695	TGAGTCACAAGGTCAAGAGATCGAATTTATGG
58	OBD183-p611	AGGCAGATTACGAGGTAAGGAGATCGATTTTGA
62	OBD183-p715	AGGTCAGGAGTTCGAATGTAAAACTGACTGTGCC

65	OBD183-p799	TGAATCACCTCAAGTCAGGAGTTCGAAATAGCCC
70	OBD183-p519	TGGGTGGGTAATGAGGTCAGGAGTTCGATTTGAA
71	OBD183-p639	ATTTGAGGTCAGGAGTTCGAATGCACCCGGG
73	OBD183-p623	AGGTCAGGAGATCGAACTCTTACCTCACATCAC
76	OBD183-p723	AGGCAGATTACGAGGTAAGGAGATCGACTAAGG
77	OBD183-p443	TGACTGCCTGAGGTCAGGAGTTCGAAGTGTGT
78	OBD183-p543	AGGAGTTCGACCTCAGTAGTTCTCCACCTTGGC
79	OBD183-p575	ACCTAGGGTCAGGAGTTCGATGAAATGGATGGG
80	OBD183-p743	TCACCTGTGGTCAGGAGTTCGATGTATCTAGG
82	OBD183-p775	ACCTGAGGTCAGGACTTCGATGGCTGTTGCTC
83	OBD183-p599	AGATTACAAGGTCAGGAGTTCGATAAAACTTCCC
85	OBD183-p583	AGGAGGATAACCTGAGGTCATGAGTTCGATAGACT
90	OBD183-p791	AGGTCAGGAGTTCGACTCTGCTGTGTCAGTGC
91	OBD183-p763	ACCTGAGGTCAGGAGTTCGACTTAGATATTCAGTG
92	OBD183-p507	AGATTTCCTGAAGTCAGGAGTTCGACCAAGCACC
93	OBD183-p655	TGGATCGTAAGGTCAGGAGTTCGATCATGCAA
94	OBD183-p627	AGGAAATCATGAGGTCAGGAGTTCGAGTTATG
96	OBD183-p503	TGAGGTCAGGAGTTCGATTCCTCATCTACAGCAC
97	OBD183-p475	TCCAGGAGTTCGACTTATTTTATCTCTGTATAAC

表2.d

編號	探針	基因	RP
1	Hg38_12_57452982_57456003_57739419_57741914_FR	ARHGAP9	20695.53197
2	Hg38_12_8219310_8221338_8341969_8343630_RR	CLEC4A	22476.39239
3	Hg38_12_57452982_57456003_57601753_57604119_FR	ARHGAP9	26019.28963
4	Hg38_3_194096425_194098698_194154195_194165166_FF	CPN2	36563.85323
5	Hg38_12_57452982_57456003_57739419_57741914_FF	ARHGAP9	39468.24142
6	Hg38_3_194044420_194052936_194096425_194098698_RF	CPN2	41488.61576
7	Hg38_19_55711882_55714266_55776223_55778463_RF	NLRP9	47528.20138
8	Hg38_3_194096425_194098698_194189178_194197532_FF	CPN2	41354.35321
9	Hg38_1_121333642_121342053_121403378_121413898_FF	FCGR1B	53004.08958
10	Hg38_22_24148514_24151453_24244877_24251612_FR	SUSD2	39791.5111
11	Hg38_20_48471129_48476648_48496455_48503402_RF	PREX1	46296.68446
12	Hg38_2_11008274_11010451_11159160_11162827_FR	ROCK2	60658.80582
13	Hg38_17_7929728_7931226_8055790_8058200_RF	TRAPPC1	64657.79207
14	Hg38_1_203176687_203182913_203364177_203368484_FF	CHI3L1	59766.30883
15	Hg38_1_203071961_203079830_203176687_203182913_RF	ADORA1	57174.38857
16	Hg38_22_42578934_42580470_42682810_42685060_FR	CYB5R3	53123.90834
17	Hg38_6_88165452_88168090_88188008_88196988_RF	CNR1	63654.72943
18	Hg38_17_7929728_7931226_7944762_7946565_RF	TRAPPC1	52010.98025

19	Hg38_19_55674838_55678632_55776223_55778463_RF	NLRP9	60382.50989
20	Hg38_1_203176687_203182913_203223882_203229092_FF	CHI3L1	61234.27208
21	Hg38_16_85802241_85804577_86052797_86054069_RR	IRF8	60406.66065
22	Hg38_16_85802241_85804577_85995087_85996356_RR	IRF8	58149.21291
23	Hg38_2_47522457_47530546_47595212_47601970_FF	MSH2	57045.54636
24	Hg38_2_47354005_47355988_47522457_47530546_RF	EPCAM	57499.77068
25	Hg38_1_203176687_203182913_203350351_203352113_FR	CHI3L1	65021.94766
26	Hg38_2_11008274_11010451_11142335_11148573_FF	ROCK2	65585.09004
27	Hg38_2_1633514_1641369_1669637_1675007_RF	PXDN	68553.52952
28	Hg38_5_75334371_75336800_75362869_75366450_FR	COL4A3BP	59160.03332
29	Hg38_3_194096425_194098698_194189178_194197532_FR	CPN2	56698.06689
30	Hg38_20_48373933_48385139_48496455_48503402_RF	PREX1	55522.20115
31	Hg38_5_140633075_140635001_140734427_140740603_RR	CD14	54888.93545
32	Hg38_11_59792208_59794193_59978140_59991387_RR	TCN1	74005.01033
33	Hg38_11_5689507_5691245_5788110_5795433_FF	TRIM22	88583.0796
34	Hg38_6_1238869_1247003_1325058_1328459_RR	FOXC1	82994.49164
35	Hg38_19_55694907_55697956_55776223_55778463_RF	NLRP9	64771.6835
36	Hg38_8_30132536_30134220_30177058_30181551_RR	DCTN6	74556.42789
37	Hg38_11_63903088_63909160_64170615_64174763_FF	OTUB1	63195.39089
38	Hg38_5_140633075_140635001_140703783_140710933_RR	CD14	58926.91739
39	Hg38_5_75334371_75336800_75421277_75426441_FR	COL4A3BP	64569.86308
40	Hg38_1_203176687_203182913_203381983_203386317_FR	CHI3L1	65019.22414
41	Hg38_14_87760445_87771456_87814113_87820852_FF	GPR65	52190.12812
42	Hg38_X_1815902_1820657_1830879_1832345_RR	AKAP17A	91544.03603
43	Hg38_18_28150489_28152101_28322522_28342464_RR	AQP4	72068.78058
44	Hg38_19_55104500_55106500_55175439_55177687_FR	TNNI3	77938.82926
45	Hg38_1_201489507_201495563_201554857_201559521_RF	TNNI1	95434.40565
46	Hg38_1_159614098_159617749_159863199_159866609_RF	CRP	86219.89409
47	Hg38_1_201387330_201388480_201554857_201559521_RF	TNNI1	88125.35913
48	Hg38_12_110242070_110251176_110379081_110380448_RR	ATP2A2	89868.81994
49	Hg38_2_53751287_53756935_53865030_53869534_FR	GPR75	98485.8466
50	Hg38_1_159708294_159713893_159863199_159866609_RF	CRP	104796.2151
51	Hg38_12_8119443_8124985_8219310_8221338_FR	CLEC4A	17037.22852
52	Hg38_12_8083961_8090020_8219310_8221338_FR	CLEC4A	18859.97781
53	Hg38_12_8219310_8221338_8280556_8285132_RR	CLEC4A	22456.54994
54	Hg38_12_8219310_8221338_8280556_8285132_RF	CLEC4A	24421.30275
55	Hg38_12_8219310_8221338_8360776_8364742_RR	CLEC4A	24631.85253
56	Hg38_12_8163206_8167779_8219310_8221338_FR	CLEC4A	26120.50389
57	Hg38_12_8219310_8221338_8328073_8331432_RR	CLEC4A	26483.91688
58	Hg38_12_8219310_8221338_8255950_8259013_RR	CLEC4A	26177.66647

59	Hg38_X_1815902_1820657_1862592_1866142_RR	AKAP17A	75133.70138
60	Hg38_3_196593741_196597691_196703167_196707250_FR	NRROS	74115.71314
61	Hg38_5_75334371_75336800_75481806_75484209_FF	COL4A3BP	57905.16147
62	Hg38_2_161723651_161741319_161918005_161924903_FF	DPP4	62589.08218
63	Hg38_6_123594_131362_212545_213965_RF	DUSP22	75804.29568
64	Hg38_1_27649538_27652259_27797543_27806064_RF	IFI6	66756.33102
65	Hg38_X_133714472_133717449_133849575_133858877_FR	GPC3	73268.76653
66	Hg38_3_55467637_55470328_55535014_55543312_RF	WNT5A	72517.34766
67	Hg38_4_145148297_145150633_145243015_145254513_FF	ABCE1	68632.72477
68	Hg38_19_55633863_55635586_55776223_55778463_RF	NLRP9	75169.9172
69	Hg38_5_75334371_75336800_75398018_75402594_FR	COL4A3BP	68717.29379
70	Hg38_12_57452982_57456003_57579684_57582438_FF	ARHGAP9	56735.59546
71	Hg38_17_7811362_7813705_7929728_7931226_RR	KDM6B	64335.59006
72	Hg38_12_54361590_54362896_54554738_54558191_FR	GPR84	77977.99646
73	Hg38_19_55562835_55568514_55776223_55778463_FF	NLRP9	68297.20436
74	Hg38_11_71580341_71586157_71832412_71840897_FR	DEFB108B	77867.08944
75	Hg38_6_88188008_88196988_88297132_88306521_FF	CNR1	66691.60404
76	Hg38_6_29569885_29574451_29588494_29591069_FR	UBD	70449.91197
77	Hg38_5_75334371_75336800_75441359_75447695_FR	COL4A3BP	64955.57945
78	Hg38_1_6450603_6452273_6528747_6530250_RR	TNFRSF25	71701.08408
79	Hg38_1_203176687_203182913_203266998_203270781_FF	CHI3L1	73183.63882
80	Hg38_5_100903133_100904261_100940255_100954422_FR	SLCO4C1	71609.32595
81	Hg38_13_52856863_52871994_53051233_53054182_RR	OLFM4	71949.72778
82	Hg38_13_52856863_52871994_52963892_52968641_RR	OLFM4	68520.61362
83	Hg38_3_105173425_105200082_105366513_105369025_FR	ALCAM	66104.48917
84	Hg38_11_71704758_71706689_71832412_71840897_FR	DEFB108B	64412.60339
85	Hg38_5_53482717_53490284_53612898_53621230_RR	FST	77444.92065
86	Hg38_1_20178914_20185415_20244434_20247937_FR	PLA2G2F	62651.6697
87	Hg38_7_44346974_44354823_44468808_44471840_RF	CAMK2B	66580.98176
88	Hg38_2_47522457_47530546_47606707_47620212_FF	MSH2	72271.33277
89	Hg38_16_85802241_85804577_85911952_85914037_RR	IRF8	74094.77992
90	Hg38_16_85802241_85804577_86036135_86037752_RR	IRF8	77409.18625
91	Hg38_8_143703137_143706882_143989689_143994132_RR	SCRIB	73024.49729
92	Hg38_19_38110009_38116645_38359207_38361549_RF	SIPA1L3	72414.84672
93	Hg38_15_53421523_53422709_53572546_53588481_FR	ONECUT1	74543.21657
94	Hg38_16_85802241_85804577_85867011_85868324_RR	IRF8	76315.72288
95	Hg38_13_52856863_52871994_52977238_52983123_RR	OLFM4	85912.11333
96	Hg38_19_11340579_11345804_11410807_11412077_FR	RAB3D	65883.23259
97	Hg38_6_88064644_88073249_88188008_88196988_RF	AKIRIN2	76118.52573
98	Hg38_14_87632983_87637573_87760445_87771456_RF	GPR65	60903.03466

99	Hg38_6_31492265_31495553_31621846_31623705_RF	AIF1	64391.76277
100	Hg38_1_203176687_203182913_203386317_203394696_FF	CHI3L1	84256.99019
101	Hg38_6_31621846_31623705_31710695_31717311_FR	BAG6	76086.53763
102	Hg38_7_156960823_156963130_157154305_157160294_RR	MNX1	67505.74102
103	Hg38_2_47522457_47530546_47563847_47570151_FR	MSH2	82371.47843
104	Hg38_1_203176687_203182913_203318340_203323344_FF	CHI3L1	79022.09419
105	Hg38_1_87788995_87790981_87818262_87826752_RF	LMO4	86647.00466
106	Hg38_2_1263661_1274578_1419778_1424769_RF	PXDN	71442.26485
107	Hg38_16_19856577_19858875_20038454_20045219_FR	GPRC5B	75834.09114
108	Hg38_17_7929728_7931226_8091106_8097573_RR	TRAPPC1	72855.19388
109	Hg38_14_24307628_24311588_24485793_24490540_RR	LTB4R	94399.28713
110	Hg38_14_87841922_87846485_88021020_88026181_FR	GPR65	64229.78661
111	Hg38_1_164748288_164754002_164931877_164940038_FR	PBX1	72147.73599
112	Hg38_1_39655161_39659067_39836323_39843028_FF	PPIE	78015.47867
113	Hg38_1_121080942_121088798_121289281_121293407_RF	FCGR1B	69362.97632
114	Hg38_1_87818262_87826752_87928072_87933012_FF	LMO4	86699.02543
115	Hg38_1_87725315_87731896_87818262_87826752_RF	LMO4	82370.32264
116	Hg38_6_31621846_31623705_31760827_31764995_FR	BAG6	64487.05815
117	Hg38_20_30175888_30181348_30407864_30413511_RR	DEFB115	78526.88029
118	Hg38_6_88188008_88196988_88297132_88306521_FR	CNR1	79295.45848

表3.a1

編號	FC:(1類/2類)	pfp	P值	CCS
1	-1.273955346	0.005801433	0.005727997	免疫
2	-1.257925344	0.003678786	0.003275206	免疫
3	-1.251537985	0.003591299	0.003182164	免疫
4	-1.219963576	0.001529047	0.000920221	免疫
5	-1.20992116	0.002056946	0.001478485	免疫
6	-1.204270443	0.001905941	0.001319886	免疫
7	-1.20352041	0.000548965	0.0000854501245417827	免疫
8	-1.20265895	0.0025339	0.002063472	免疫
9	-1.197079593	0.001529047	0.00092259	免疫
10	-1.195746952	0.005042802	0.004913289	免疫
11	-1.185895106	0.002250025	0.001670904	免疫
12	-1.183435224	0.000520629	0.0000699049196474862	心臟
13	-1.183434809	0.001364867	0.000760179	免疫
14	-1.181127512	0.00048383	0.0000459179356058606	免疫
15	-1.180302978	0.000693008	0.00020761	免疫
16	-1.178910824	0.001087752	0.000477881	免疫

17	-1.178597726	0.002297443	0.001781961	免疫
18	-1.177395452	0.001369925	0.000768776	免疫
19	-1.175238807	0.000691883	0.000188452	免疫
20	-1.174498675	0.000691883	0.000204354	免疫
21	-1.174476154	0.00048383	0.0000364444423340785	免疫
22	-1.174324323	0.000580521	0.000141879	免疫
23	-1.173818675	0.002056946	0.001467992	免疫
24	-1.173804774	0.002172138	0.001594735	免疫
25	-1.172308346	0.000548965	0.000115314	免疫
26	-1.171668875	0.000786846	0.000252322	心臟
27	-1.171515589	0.001905941	0.001326921	免疫
28	-1.171289424	0.001303562	0.000704034	免疫
29	-1.170754835	0.002297443	0.001765408	免疫
30	-1.169480391	0.002305285	0.001809211	免疫
31	-1.169390122	0.004420249	0.004159137	免疫
32	-1.168763954	0.00048383	0.0000328398262035424	免疫
33	-1.168388858	0.002316153	0.001827513	免疫
34	-1.168128163	0.00092227	0.00031414	免疫
35	-1.167926895	0.00063478	0.000168739	免疫
36	-1.167913965	0.005042802	0.004887801	免疫
37	-1.167215962	0.00092227	0.000315206	免疫
38	-1.166183201	0.003576526	0.003150581	免疫
39	-1.166029994	0.001303562	0.000699267	免疫
40	-1.165357971	0.001038693	0.000436752	免疫
41	-1.164160024	0.003576526	0.003153983	免疫
42	-1.163643176	0.001256517	0.000635032	免疫
43	-1.161997248	0.000548965	0.000109155	免疫
44	-1.144590291	0.003077496	0.002610028	心臟
45	-1.144176303	0.001042455	0.00045305	心臟
46	-1.143933829	0.000548965	0.00011352	免疫
47	-1.140546879	0.000691883	0.000199948	心臟
48	-1.140518988	0.000548965	0.000103344	心臟
49	-1.139661805	0.000520629	0.0000724926837099582	心臟
50	-1.134523619	0.000439511	0.0000222537163232683	免疫
51	-1.291886788	0.004735379	0.004479108	免疫
52	-1.276607983	0.005042802	0.004915136	免疫
53	-1.258007859	0.004367629	0.004084773	免疫

54	-1.245249491	0.004313719	0.004004296	免疫
55	-1.242984819	0.00604682	0.00604682	免疫
56	-1.242567483	0.003834101	0.00346781	免疫
57	-1.237550281	0.004735694	0.004515894	免疫
58	-1.237318061	0.005042802	0.004853215	免疫
59	-1.185115992	0.001735668	0.001164435	免疫
60	-1.184021602	0.003517821	0.003042841	免疫
61	-1.177773137	0.001038693	0.000435011	免疫
62	-1.174455561	0.000548965	0.000112646	免疫
63	-1.168790651	0.000439511	0.0000202371768844078	免疫
64	-1.16673532	0.001014024	0.000363933	免疫
65	-1.166592129	0.000959795	0.000340181	免疫
66	-1.16579207	0.000548965	0.0000919355625947195	免疫
67	-1.161957027	0.001889671	0.001291674	免疫
68	-1.161756615	0.000548965	0.000102232	免疫
69	-1.161687815	0.001256517	0.000624724	免疫
70	-1.161219868	0.006007073	0.005981727	免疫
71	-1.161116734	0.000959795	0.000338831	免疫
72	-1.160957348	0.000508234	0.0000540392644924905	免疫
73	-1.160376317	0.001256517	0.000628074	免疫
74	-1.1596609	0.00048383	0.0000469539791565224	免疫
75	-1.159541181	0.001087752	0.000501372	免疫
76	-1.159137231	0.001687588	0.001103697	免疫
77	-1.158036372	0.004074156	0.003713155	免疫
78	-1.157946235	0.00592368	0.005873691	免疫
79	-1.157617797	0.001038693	0.000427764	免疫
80	-1.157435731	0.001660717	0.001079116	免疫
81	-1.156728084	0.000548965	0.000103051	免疫
82	-1.155458775	0.001038693	0.000399475	免疫
83	-1.155306024	0.001038693	0.000419393	免疫
84	-1.155297894	0.001523301	0.000897002	免疫
85	-1.155073798	0.00048383	0.0000419685608857737	免疫
86	-1.154967103	0.002294852	0.001733243	免疫
87	-1.154518586	0.001386154	0.000789582	免疫
88	-1.154279434	0.001660717	0.00106681	免疫
89	-1.154128129	0.00060994	0.000156989	免疫
90	-1.153773794	0.00048383	0.0000304928532924081	免疫

91	-1.153622734	0.002297443	0.001793362	免疫
92	-1.153379263	0.000520629	0.0000669248704817302	免疫
93	-1.152793154	0.000439511	0.0000221399983527453	免疫
94	-1.152700501	0.000548965	0.000103767	免疫
95	-1.152626951	0.000211853	0.00000273860631884956	免疫
96	-1.152618451	0.001555148	0.000948832	免疫
97	-1.152145384	0.001038693	0.000418922	免疫
98	-1.151874288	0.004367629	0.004091197	免疫
99	-1.151161423	0.001794515	0.001211487	免疫
100	-1.151012921	0.000520629	0.0000713253832841399	免疫
101	-1.150617051	0.000548965	0.000106987	免疫
102	-1.150577287	0.004266767	0.003924706	免疫
103	-1.149458647	0.001014024	0.000375521	免疫
104	-1.149204947	0.001256975	0.000641747	免疫
105	-1.149093467	0.001183842	0.000569443	免疫
106	-1.149018322	0.001319233	0.00072363	免疫
107	-1.148871477	0.003207085	0.002746997	免疫
108	-1.148855684	0.001256517	0.000635169	免疫
109	-1.14852207	0.000130185	0.00000109860999870066	免疫
110	-1.147938237	0.002345377	0.00188026	免疫
111	-1.147750151	0.001605895	0.000990951	免疫
112	-1.147573915	0.001303562	0.000685373	免疫
113	-1.147511427	0.001306826	0.000711311	免疫
114	-1.147428692	0.000944817	0.000326899	免疫
115	-1.14732136	0.001303562	0.000694322	免疫
116	-1.14690098	0.002606229	0.002155362	免疫
117	-1.146873351	0.000580521	0.000141801	免疫
118	-1.146790056	0.000749172	0.000229144	免疫

表3.a2

	探針序列	探針位置
編號	**60 mer**	**Chr**
1	AGCAGTCTCTACTTTTCTAGAGGTAGGTTCGACTGTCCCAAAGTGAACTTGGAAAATGTT	12
2	AATTAATGAAGCGCAAATCAAAGGGGACTCGAGCTTCCCAGACATGCTCATGCTAGATTA	12
3	AGCAGTCTCTACTTTTCTAGAGGTAGGTTCGAGTAGGCTCTTTCTGACCCTCAGAAATAC	12

4	TACAGCTGCAGGAAAACCCCGTTCTTATTCGACATATGCTTTCAGTTCTCTTGGGTAAAT	3
5	AGCAGTCTCTACTTTTCTAGAGGTAGGTTCGAGGTAAGAGAAAGGTCAGCCCTCAACTTG	12
6	TACAGCTGCAGGAAAACCCCGTTCTTATTCGAGAGTCATTTTATCCTCAAGCACTATTGC	3
7	CAGAATAGGAAGGAGCAAGCTGAGAGGTTCGAGGTTCAGGCTCCTCAGTGTTTTGCAGGC	19
8	TACAGCTGCAGGAAAACCCCGTTCTTATTCGATGATAGTAATCTTCAAAGAATAGTCACA	3
9	TGACCCCAAGCATTCTGGCCTGAACGATTCGATTTCCCACAAATAAATCCAGTAATCTTG	1
10	TTTTAGGGACCAGGGGTCAGAAGATGGATCGACAGATAGGCCAGATAGCTAGACAAAGAG	22
11	CCTCCCTGGGTCACCAGCTTCGTGACCCTCGATGTTCTTTATACCTTGCCCATATTGTAC	20
12	AGAGAGCTCAATGTGTTTCGGCTTTAGTTCGATGGTGAAGACCCCCATAGCTTTTGTTCT	2
13	GGTGGACCGACGAGGCTCAAAATCAAGATCGAGGATGAGGTAAAGGTCTCGGAGGATAAG	17
14	GTCCCAAGTGGCATGAGAGGTAGACTCATCGATCACATCACTCTTTCCTGTTTTTTTTCC	1
15	GTCCCAAGTGGCATGAGAGGTAGACTCATCGAGAAGTCTCTGTGAAACTCCTGTGCAAAA	1
16	CACATCCCTGTCTAGTCCTATCTGTTCATCGAGCCAGAGTGTCACTCTGTCACCTAGGCT	22
17	TTGTGGTGAGAACGATACAGGAGACAGCTCGATGTATTTCCCTGGGAAGACTTAGCTGCT	6
18	CTGTGTGGTACAAACATGACAACCTAGGTCGAGGATGAGGTAAAGGTCTCGGAGGATAAG	17
19	CAGAATAGGAAGGAGCAAGCTGAGAGGTTCGAGGCCTTCCCTGCTTGCGCGGTGCCCTTC	19
20	GTCCCAAGTGGCATGAGAGGTAGACTCATCGAAGGAGTCCTGTCAGACCCTAGGTCTCCA	1
21	GAGAGGCCGTTCTAAAAGCACATTTGTATCGAATAAATAGAAATATAGAATAAATAGACA	16
22	GAGAGGCCGTTCTAAAAGCACATTTGTATCGAGGTGCCAGCTGCTAAGAGGGGTCTCGCT	16
23	CGGAGGGTATAATAACTGCTGTTGTGTATCGAGCAACCCCTGAGAATAAGGTGGCTCAAT	2
24	CGGAGGGTATAATAACTGCTGTTGTGTATCGAGGTGTAACTCACTAGCACGTTGTCTCTC	2
25	GTCCCAAGTGGCATGAGAGGTAGACTCATCGAAAGTTTCCAGGACTGCCACACTATCAGC	1
26	AGAGAGCTCAATGTGTTTCGGCTTTAGTTCGATGCTCATA	2

	TTGTCCCAAATTTAGGCTGG	
27	CAGCGCGCAGCCAAACCGTCGGGAACACTCGAGCAGCG GGAATGTTTGTCTTGGGATTAG	2
28	CCCGCGCTAGTAACTGAGCTTTCAGTCATCGAAGTATGCT CCTACGCTAGGTAAGTCTTG	5
29	TACAGCTGCAGGAAAACCCCGTTCTTATTCGACAGAGAC CTCCCCAGGATGAGTAAACCT	3
30	CCTCCCTGGGTCACCAGCTTCGTGACCCTCGACTCAAAG GAGAAAAATGCATGTCCCCCT	20
31	TCCGGAGCTCAGAGGTTCGGAAGACTTATCGAAAAGACT TTAACATATTTGAATACCAAT	5
32	CACGCCAAACCTCAAGTACATACTAATTTCGACTCATGCT CTTGAAAATAGTAAGAAAAA	11
33	AAGACTCCTGTCTCAAGAGCCGAGCTCCTCGAAGCCATT TATAAGGGTTAGAACTAACTT	11
34	GTGGGCAGATTGGACAATCGTGAGAAGATCGAGCACATG CAATTCCCTCTGCTCCATGAC	6
35	CAGAATAGGAAGGAGCAAGCTGAGAGGTTCGACCTGGA CTCGCTGGTGAGCCGGCCGGGC	19
36	GGAGCGGGACTGACTGATTGCCAGCAATTCGAAAATGGG AAGAAAATTGCTTATTGTGTT	8
37	AACTGCCGCGGCTCTCTCTCAACGGGGTTCGAGACCAGG CTGGCCGACATTGCAAAACCT	11
38	TCCGGAGCTCAGAGGTTCGGAAGACTTATCGAAAGCTAA GGCTTTATAGAAATGAAGGCT	5
39	CCCGCGCTAGTAACTGAGCTTTCAGTCATCGATACCTTAT TTCCCTTCTTTGATTAAATG	5
40	GTCCCAAGTGGCATGAGAGGTAGACTCATCGATCCCATC TCCTGTCTACTTGGGACCTTT	1
41	CGCCCTCCCAGGAGATCCCCACAACTAATCGACTTAAGG AAAGAAAAAGTCATATGCTGA	14
42	AAGCGAGCGGATCACCTCGGCCAGGAGTTCGAGACAAGC CTGGCCAACATGGTGAAACCC	X
43	GTGAACATTCACTGTCTTCCTGACAGCTTCGATAGATAGA TACTATTTTATTTTATTTTT	18
44	CTTGTCAGCACTTGGAGCTATCCAATGGTCGAAGCGAAC AGTTGGGGGAACTCAAATGGG	19
45	AGGTGAGAAGCTTTGTCCGAGATGATGGTCGAAGAAAGG GAAATGACTTCTTCTCAGTAG	1
46	CGGATTCTGGTTACAGAGAGGGATGAGATCGAATGGACT CCGCTAAGTGTGTTGGCTTGA	1
47	AGGTGAGAAGCTTTGTCCGAGATGATGGTCGATATATTG CACTTCCAAGGTATCATCTGA	1
48	AGAACTCACCATATTGCCAGGGCTGGTCTCGAACTCCTG ACGTCAGGTGTTCCACCCGCC	12

49	CAGGCTAAGTGCCTGGGGTTCATCCTAATCGAGCAATCC ATCAGGTCATTGGTTAGGTTC	2
50	CGGATTCTGGTTACAGAGAGGGATGAGATCGAAGTTGAG AATTGCTGGCCTAGAGTCCCT	1
51	CCCCCATCATTTGACAAAATATCATAACTCGAGTCCCCTT TGATTTGCGCTTCATTAATT	12
52	TCAAAAGGGAAGACTGCCTATATCAAACTCGAGTCCCCT TTGATTTGCGCTTCATTAATT	12
53	AATTAATGAAGCGCAAATCAAAGGGGACTCGACTATAAG AGAGAGGTACGCTCCGGGGGG	12
54	AGGCTCCGTTCCAGTTCTTGATCCACACTCGAGTCCCCTT TGATTTGCGCTTCATTAATT	12
55	AATTAATGAAGCGCAAATCAAAGGGGACTCGAAGATCCA GAAAATTGGCCTGGTGCAGTA	12
56	CAGTCCTTGCCTCCTCAGAAGAAAGAACTCGAGTCCCCTT TGATTTGCGCTTCATTAATT	12
57	AATTAATGAAGCGCAAATCAAAGGGGACTCGACTTTCAA ACCTTTCTCCACAACAGGGCC	12
58	AATTAATGAAGCGCAAATCAAAGGGGACTCGAATCCCTG GGCTGAAGTGATCCACTTGCC	12
59	AAGCGAGCGGATCACCTCGGCCAGGAGTTCGAGAGCAGC CTGGCCACATGGGAGGGAGGG	X
60	GACAGTTGGACTACCTGAGGTCAGGAGTTCGAGACATAA TTTATATAGCTCAGTATATAC	3
61	CCCGCGCTAGTAACTGAGCTTTCAGTCATCGATGTTACCA TGAGGCTTTCAAATAACAAG	5
62	ACAGTCCTCCGCTCTACCAACTGAGCTATCGAAACCTGAT GATATGGCTTCTCCATTCAT	2
63	CAGAAAGAAGACAAGGGGCATCTGAATGTCGAATCAAG TTTATAATTTTAAAATAATTGG	6
64	TCCCTGAGTTATGCAGCTCTTCCAAATGTCGAGGAGCTAA AAGCGAAGGCCGCGGGGAAG	1
65	ACCACACCCTGGTCCTGGTAGTTAAAGATCGACCACTTTC AAATCTTTTCCACCTGGTAA	X
66	GGAGACAGGGTTACATCAGCCAGTAACATCGATGTTTGT TTTTTAAACCAGTGAAATATA	3
67	GTTGTCTTACTCCTGAAGGATGCTGCAGTCGAGGCATTTT AACTAAATTATCTGCTTCAC	4
68	CAGAATAGGAAGGAGCAAGCTGAGAGGTTCGACCTCCCA AATTGTTGGGATTACAGGCGT	19
69	CCCGCGCTAGTAACTGAGCTTTCAGTCATCGAAAATAAA TAAGTAAAATTAAAAAAAAAT	5
70	AGCAGTCTCTACTTTTCTAGAGGTAGGTTCGAGAAAAAG TTTCTGCAGCCCCTCACCAAG	12
71	TAACTCACAAAGGCAAGATTAGTTGATGTCGAGGATGAG	17

	GTAAAGGTCTCGGAGGATAAG	
72	CAAAGCAGAGGAACACAGCAAAACACATTCGAGTTCAC ATTCTGCCCTAACAATTACAAC	12
73	AATGACACGCTAAAAGGAAAAAGGAACGTCGAACCTCTC AGCTTGCTCCTTCCTATTCTG	19
74	GTTTTTGGCTACCAGTCCTTCACCTGCGTCGACCTTTATA GACGCTATCAAGGAAGCACC	11
75	TTGTGGTGAGAACGATACAGGAGACAGCTCGAAATGGTT CATAGATTTAAGTGTAAAAGT	6
76	ATTTTGTCTGTGAGGTCCCAGCTCTAATTCGACTCTCCTG TGAAGACACCTCCTACAATG	6
77	CCCGCGCTAGTAACTGAGCTTTCAGTCATCGACAAACTAT GCATTTCTCAGAATGCATCT	5
78	GTATGAGGTGCAAGGCCCCACCCATTCTTCGAGCAAGAA GAGGAGGGCCAAGCCCAGGCC	1
79	GTCCCAAGTGGCATGAGAGGTAGACTCATCGAACTCATC CATTCCAAAGATGGCTCAGGG	1
80	GCAGGGACACTTTTCAAGAGTTCTGTGTTCGAGATATTAA ACAAGACATTCAATTGGTTC	5
81	GTTGGAAGGAATCCAGGGTAAGGGATATTCGAGGGACCA AATCTCCAACTTTTTTTCCC	13
82	GTTGGAAGGAATCCAGGGTAAGGGATATTCGAGGGTTGC TTTTCTTTTTCAAGAAAAATT	13
83	TTCTCATGTTAATAAACATGAAAAATGGTCGATTTTTAAA CCTCAGCGAGGGTGGGTGGG	3
84	AGGTGACCGTCTTCCAGAGGAGAGCGGATCGACCTTTAT AGACGCTATCAAGGAAGCACC	11
85	GAGACGCGGGAGAAAAGTAGGAAATAAATCGAAAATAA AACAACTACGTTTGCTGTACAA	5
86	GCCAGGATAGGGAAGAAGCAGATTGATATCGAGGATGA TAGATCCCAAGGAGAGAGTGAC	1
87	CAAACCAGAGATGAAGCAACAGGTCTAATCGAGTCCTTT GCCCATATTTTGATTGGATTG	7
88	CGGAGGGTATAATAACTGCTGTTGTGTATCGAGGGCTTTT CAGGACTGGAGTGACTGATG	2
89	GAGAGGCCGTTCTAAAAGCACATTTGTATCGAACACTTT GGACAGCAGTCTTTTAAATGG	16
90	GAGAGGCCGTTCTAAAAGCACATTTGTATCGAGTTGGTC ACCTGAGCCTATTATTGACGG	16
91	CAACCAACCAGAAAACACAGGAAACAACTCGATTTGGG AACTAAAGGATTAGGCTTCTTG	8
92	ACGCTGAGGAGGAAGATTCGGGCTGGATTCGAGGAAGTG TTTCTGGCCATGGTGAGGCCT	19
93	CTGCCTTCCTAACCATGTCCTGAGAAACTCGAAAAGCAC AATCCATGAAAGAAAAAAATT	15

94	GAGAGGCCGTTCTAAAAGCACATTTGTATCGATCTGTCA CATACCTAGAAATACAGGGAC	16
95	GTTGGAAGGAATCCAGGGTAAGGGATATTCGATACTGCT TGAACATAAAATGAAATGTAG	13
96	CAAAGCAGTCAAGGCCCAAAGACAACCCTCGAAAAGAA TGTGAGACATACCTCAGGAAAA	19
97	TTGTGGTGAGAACGATACAGGAGACAGCTCGATTTGTAG CTGATGCATCGCAAACTAAAA	6
98	CGCCCTCCCAGGAGATCCCCACAACTAATCGACACCCTC TGATTTCATCCCTGACCAGTC	14
99	GCCATCAGATCTCCCACATGAGGCATTTTCGACTTTGTCT CCATCCAAGGACGCTATGGC	6
100	GTCCCAAGTGGCATGAGAGGTAGACTCATCGAGCCTGCA GTCTCTGCTACTCAGGAGGCT	1
101	GCCATCAGATCTCCCACATGAGGCATTTTCGACTTCACCA TCCAGCTGGCCTCCAGCAGC	6
102	CCCAGCTCCTGCAAAACTCCTCCTGACTTCGAGATTCTGT CTAAAAAAAAAAGATAAAAG	7
103	CGGAGGGTATAATAACTGCTGTTGTGTATCGACGCGGAG GCCCTTGGGCATAGTCAAGAC	2
104	GTCCCAAGTGGCATGAGAGGTAGACTCATCGAAAGGACC TGTCTCTGCCCATAAGAGGGC	1
105	AGCTGTTCCTTTAATCTTCCCAGCACTATCGATGAACACT TCTTTCCAAAAAAAGTTTAC	1
106	TTCTAGATGCCGGGATACAGAGATGAGTTCGACATGTAC GGCCTGGCTCAGCATTGCCTT	2
107	AGGAAATGTACTAACTGTTAAGGAAAACTCGAAGCTCTT TAAAAGTATTCCAACCCCATC	16
108	CTTATCCTCCGAGACCTTTACCTCATCCTCGATGACTCTT GGAGGATGCTGGGAGCCTGA	17
109	CACTCCATGGTCTCTCCCTCATCCCTAATCGATACAGAAA AATTTCAAGAAAAATTTCAT	14
110	ATGAGGCTGTGGAAGAGCAAAATGAGTTTCGACATGGTG GTATACCATGGTGGTGATACT	14
111	AGTACTCTTTGTTGTCATTTAGTATGTATCGAGGTCAATG TCGCATAGCTAATAAGACCT	1
112	AAACTAGAGGGATCTACCAGAGGAGGTGTCGATTTGTTG AATGTTCTTCAGGGATAGCCT	1
113	AGCAAGGAACATAATTATGGCTGTGCTTTCGATGATGCA GTTGCTTTTGAAACTCTTTAA	1
114	AGCTGTTCCTTTAATCTTCCCAGCACTATCGAGTGCCACT ATTTTTAAACAGATCTTAAA	1
115	AGCTGTTCCTTTAATCTTCCCAGCACTATCGATCATAAAT TAGTAAATTGAAAGATCAAG	1
116	GCCATCAGATCTCCCACATGAGGCATTTTCGACCTCAACC	6

	AGGTCAAAGGGAACAAAGGG	
117	ATTCAGGGCGGGGGTCCTCTTGCCAAGATCGATAGACCACTAGCAAGACTAATAAAGAAG	20
118	TTGTGGTGAGAACGATACAGGAGACAGCTCGAATGTGCAAAGTATAACAAAAAGATAGGT	6

表3.a3

	探針位置			
編號	**開始1**	**結束1**	**開始2**	**結束2**
1	57455972	57456001	57739421	57739450
2	8219312	8219341	8341971	8342000
3	57455972	57456001	57601755	57601784
4	194098667	194098696	194165135	194165164
5	57455972	57456001	57741883	57741912
6	194044422	194044451	194098667	194098696
7	55711884	55711913	55778432	55778461
8	194098667	194098696	194197501	194197530
9	121342022	121342051	121413867	121413896
10	24151422	24151451	24244879	24244908
11	48471131	48471160	48503371	48503400
12	11010420	11010449	11159162	11159191
13	7929730	7929759	8058169	8058198
14	203182882	203182911	203368453	203368482
15	203071963	203071992	203182882	203182911
16	42580439	42580468	42682812	42682841
17	88165454	88165483	88196957	88196986
18	7929730	7929759	7946534	7946563
19	55674840	55674869	55778432	55778461
20	203182882	203182911	203229061	203229090
21	85802243	85802272	86052799	86052828
22	85802243	85802272	85995089	85995118
23	47530515	47530544	47601939	47601968
24	47354007	47354036	47530515	47530544
25	203182882	203182911	203350353	203350382
26	11010420	11010449	11148542	11148571
27	1633516	1633545	1674976	1675005
28	75336769	75336798	75362871	75362900
29	194098667	194098696	194189180	194189209
30	48373935	48373964	48503371	48503400
31	140633077	140633106	140734429	140734458
32	59792210	59792239	59978142	59978171

33	5691214	5691243	5795402	5795431
34	1238871	1238900	1325060	1325089
35	55694909	55694938	55778432	55778461
36	30132538	30132567	30177060	30177089
37	63909129	63909158	64174732	64174761
38	140633077	140633106	140703785	140703814
39	75336769	75336798	75421279	75421308
40	203182882	203182911	203381985	203382014
41	87771425	87771454	87820821	87820850
42	1815904	1815933	1830881	1830910
43	28150491	28150520	28322524	28322553
44	55106469	55106498	55175441	55175470
45	201489509	201489538	201559490	201559519
46	159614100	159614129	159866578	159866607
47	201387332	201387361	201559490	201559519
48	110242072	110242101	110379083	110379112
49	53756904	53756933	53865032	53865061
50	159708296	159708325	159866578	159866607
51	8124954	8124983	8219312	8219341
52	8089989	8090018	8219312	8219341
53	8219312	8219341	8280558	8280587
54	8219312	8219341	8285101	8285130
55	8219312	8219341	8360778	8360807
56	8167748	8167777	8219312	8219341
57	8219312	8219341	8328075	8328104
58	8219312	8219341	8255952	8255981
59	1815904	1815933	1862594	1862623
60	196597660	196597689	196703169	196703198
61	75336769	75336798	75484178	75484207
62	161741288	161741317	161924872	161924901
63	123596	123625	213934	213963
64	27649540	27649569	27806033	27806062
65	133717418	133717447	133849577	133849606
66	55467639	55467668	55543281	55543310
67	145150602	145150631	145254482	145254511
68	55633865	55633894	55778432	55778461
69	75336769	75336798	75398020	75398049
70	57455972	57456001	57582407	57582436
71	7811364	7811393	7929730	7929759
72	54362865	54362894	54554740	54554769

73	55568483	55568512	55778432	55778461
74	71586126	71586155	71832414	71832443
75	88196957	88196986	88306490	88306519
76	29574420	29574449	29588496	29588525
77	75336769	75336798	75441361	75441390
78	6450605	6450634	6528749	6528778
79	203182882	203182911	203270750	203270779
80	100904230	100904259	100940257	100940286
81	52856865	52856894	53051235	53051264
82	52856865	52856894	52963894	52963923
83	105200051	105200080	105366515	105366544
84	71706658	71706687	71832414	71832443
85	53482719	53482748	53612900	53612929
86	20185384	20185413	20244436	20244465
87	44346976	44347005	44471809	44471838
88	47530515	47530544	47620181	47620210
89	85802243	85802272	85911954	85911983
90	85802243	85802272	86036137	86036166
91	143703139	143703168	143989691	143989720
92	38110011	38110040	38361518	38361547
93	53422678	53422707	53572548	53572577
94	85802243	85802272	85867013	85867042
95	52856865	52856894	52977240	52977269
96	11345773	11345802	11410809	11410838
97	88064646	88064675	88196957	88196986
98	87632985	87633014	87771425	87771454
99	31492267	31492296	31623674	31623703
100	203182882	203182911	203394665	203394694
101	31623674	31623703	31710697	31710726
102	156960825	156960854	157154307	157154336
103	47530515	47530544	47563849	47563878
104	203182882	203182911	203323313	203323342
105	87788997	87789026	87826721	87826750
106	1263663	1263692	1424738	1424767
107	19858844	19858873	20038456	20038485
108	7929730	7929759	8091108	8091137
109	24307630	24307659	24485795	24485824
110	87846454	87846483	88021022	88021051
111	164753971	164754000	164931879	164931908
112	39659036	39659065	39842997	39843026

113	121080944	121080973	121293376	121293405
114	87826721	87826750	87932981	87933010
115	87725317	87725346	87826721	87826750
116	31623674	31623703	31760829	31760858
117	30175890	30175919	30407866	30407895
118	88196957	88196986	88297134	88297163

表3.a4

	4 kb序列位置				
編號	**Chr**	**開始1**	**位置1**	**開始2**	**結束2**
1	12	57452002	57456001	57739421	57743420
2	12	8219312	8223311	8341971	8345970
3	12	57452002	57456001	57601755	57605754
4	3	194094697	194098696	194161165	194165164
5	12	57452002	57456001	57737913	57741912
6	3	194044422	194048421	194094697	194098696
7	19	55711884	55715883	55774462	55778461
8	3	194094697	194098696	194193531	194197530
9	1	121338052	121342051	121409897	121413896
10	22	24147452	24151451	24244879	24248878
11	20	48471131	48475130	48499401	48503400
12	2	11006450	11010449	11159162	11163161
13	17	7929730	7933729	8054199	8058198
14	1	203178912	203182911	203364483	203368482
15	1	203071963	203075962	203178912	203182911
16	22	42576469	42580468	42682812	42686811
17	6	88165454	88169453	88192987	88196986
18	17	7929730	7933729	7942564	7946563
19	19	55674840	55678839	55774462	55778461
20	1	203178912	203182911	203225091	203229090
21	16	85802243	85806242	86052799	86056798
22	16	85802243	85806242	85995089	85999088
23	2	47526545	47530544	47597969	47601968
24	2	47354007	47358006	47526545	47530544
25	1	203178912	203182911	203350353	203354352
26	2	11006450	11010449	11144572	11148571
27	2	1633516	1637515	1671006	1675005
28	5	75332799	75336798	75362871	75366870
29	3	194094697	194098696	194189180	194193179
30	20	48373935	48377934	48499401	48503400

31	5	140633077	140637076	140734429	140738428
32	11	59792210	59796209	59978142	59982141
33	11	5687244	5691243	5791432	5795431
34	6	1238871	1242870	1325060	1329059
35	19	55694909	55698908	55774462	55778461
36	8	30132538	30136537	30177060	30181059
37	11	63905159	63909158	64170762	64174761
38	5	140633077	140637076	140703785	140707784
39	5	75332799	75336798	75421279	75425278
40	1	203178912	203182911	203381985	203385984
41	14	87767455	87771454	87816851	87820850
42	X	1815904	1819903	1830881	1834880
43	18	28150491	28154490	28322524	28326523
44	19	55102499	55106498	55175441	55179440
45	1	201489509	201493508	201555520	201559519
46	1	159614100	159618099	159862608	159866607
47	1	201387332	201391331	201555520	201559519
48	12	110242072	110246071	110379083	110383082
49	2	53752934	53756933	53865032	53869031
50	1	159708296	159712295	159862608	159866607
51	12	8120984	8124983	8219312	8223311
52	12	8086019	8090018	8219312	8223311
53	12	8219312	8223311	8280558	8284557
54	12	8219312	8223311	8281131	8285130
55	12	8219312	8223311	8360778	8364777
56	12	8163778	8167777	8219312	8223311
57	12	8219312	8223311	8328075	8332074
58	12	8219312	8223311	8255952	8259951
59	X	1815904	1819903	1862594	1866593
60	3	196593690	196597689	196703169	196707168
61	5	75332799	75336798	75480208	75484207
62	2	161737318	161741317	161920902	161924901
63	6	123596	127595	209964	213963
64	1	27649540	27653539	27802063	27806062
65	X	133713448	133717447	133849577	133853576
66	3	55467639	55471638	55539311	55543310
67	4	145146632	145150631	145250512	145254511
68	19	55633865	55637864	55774462	55778461
69	5	75332799	75336798	75398020	75402019
70	12	57452002	57456001	57578437	57582436

71	17	7811364	7815363	7929730	7933729
72	12	54358895	54362894	54554740	54558739
73	19	55564513	55568512	55774462	55778461
74	11	71582156	71586155	71832414	71836413
75	6	88192987	88196986	88302520	88306519
76	6	29570450	29574449	29588496	29592495
77	5	75332799	75336798	75441361	75445360
78	1	6450605	6454604	6528749	6532748
79	1	203178912	203182911	203266780	203270779
80	5	100900260	100904259	100940257	100944256
81	13	52856865	52860864	53051235	53055234
82	13	52856865	52860864	52963894	52967893
83	3	105196081	105200080	105366515	105370514
84	11	71702688	71706687	71832414	71836413
85	5	53482719	53486718	53612900	53616899
86	1	20181414	20185413	20244436	20248435
87	7	44346976	44350975	44467839	44471838
88	2	47526545	47530544	47616211	47620210
89	16	85802243	85806242	85911954	85915953
90	16	85802243	85806242	86036137	86040136
91	8	143703139	143707138	143989691	143993690
92	19	38110011	38114010	38357548	38361547
93	15	53418708	53422707	53572548	53576547
94	16	85802243	85806242	85867013	85871012
95	13	52856865	52860864	52977240	52981239
96	19	11341803	11345802	11410809	11414808
97	6	88064646	88068645	88192987	88196986
98	14	87632985	87636984	87767455	87771454
99	6	31492267	31496266	31619704	31623703
100	1	203178912	203182911	203390695	203394694
101	6	31619704	31623703	31710697	31714696
102	7	156960825	156964824	157154307	157158306
103	2	47526545	47530544	47563849	47567848
104	1	203178912	203182911	203319343	203323342
105	1	87788997	87792996	87822751	87826750
106	2	1263663	1267662	1420768	1424767
107	16	19854874	19858873	20038456	20042455
108	17	7929730	7933729	8091108	8095107
109	14	24307630	24311629	24485795	24489794
110	14	87842484	87846483	88021022	88025021

111	1	164750001	164754000	164931879	164935878
112	1	39655066	39659065	39839027	39843026
113	1	121080944	121084943	121289406	121293405
114	1	87822751	87826750	87929011	87933010
115	1	87725317	87729316	87822751	87826750
116	6	31619704	31623703	31760829	31764828
117	20	30175890	30179889	30407866	30411865
118	6	88192987	88196986	88297134	88301133

表3.a5

編號	探針	引子ID
1	Hg38_12_57452982_57456003_57739419_57741914_FR	OBD183-1149
2	Hg38_12_8219310_8221338_8341969_8343630_RR	OBD183-1109
3	Hg38_12_57452982_57456003_57601753_57604119_FR	OBD183-1137
4	Hg38_3_194096425_194098698_194154195_194165166_FF	OBD183-2161
5	Hg38_12_57452982_57456003_57739419_57741914_FF	OBD183-1185
6	Hg38_3_194044420_194052936_194096425_194098698_RF	OBD183-1189
7	Hg38_19_55711882_55714266_55776223_55778463_RF	OBD183-1025
8	Hg38_3_194096425_194098698_194189178_194197532_FF	OBD183-1169
9	Hg38_1_121333642_121342053_121403378_121413898_FF	OBD183-1061
10	Hg38_22_24148514_24151453_24244877_24251612_FR	OBD183-1129
11	Hg38_20_48471129_48476648_48496455_48503402_RF	OBD183-1073
12	Hg38_2_11008274_11010451_11159160_11162827_FR	OBD183-2165
13	Hg38_17_7929728_7931226_8055790_8058200_RF	OBD183-1005
14	Hg38_1_203176687_203182913_203364177_203368484_FF	OBD183-1081
15	Hg38_1_203071961_203079830_203176687_203182913_RF	OBD183-1045
16	Hg38_22_42578934_42580470_42682810_42685060_FR	OBD183-2169
17	Hg38_6_88165452_88168090_88188008_88196988_RF	OBD183-1173
18	Hg38_17_7929728_7931226_7944762_7946565_RF	OBD183-1001
19	Hg38_19_55674838_55678632_55776223_55778463_RF	OBD183-1017
20	Hg38_1_203176687_203182913_203223882_203229092_FF	OBD183-1077
21	Hg38_16_85802241_85804577_86052797_86054069_RR	OBD183-2173
22	Hg38_16_85802241_85804577_85995087_85996356_RR	OBD183-1021
23	Hg38_2_47522457_47530546_47595212_47601970_FF	OBD183-2177
24	Hg38_2_47354005_47355988_47522457_47530546_RF	OBD183-2181
25	Hg38_1_203176687_203182913_203350351_203352113_FR	OBD183-1069
26	Hg38_2_11008274_11010451_11142335_11148573_FF	OBD183-1161
27	Hg38_2_1633514_1641369_1669637_1675007_RF	OBD183-1153
28	Hg38_5_75334371_75336800_75362869_75366450_FR	OBD183-1117
29	Hg38_3_194096425_194098698_194189178_194197532_FR	OBD183-1181

30	Hg38_20_48373933_48385139_48496455_48503402_RF	OBD183-1193
31	Hg38_5_140633075_140635001_140734427_140740603_RR	OBD183-1113
32	Hg38_11_59792208_59794193_59978140_59991387_RR	OBD183-1125
33	Hg38_11_5689507_5691245_5788110_5795433_FF	OBD183-2185
34	Hg38_6_1238869_1247003_1325058_1328459_RR	OBD183-1037
35	Hg38_19_55694907_55697956_55776223_55778463_RF	OBD183-1013
36	Hg38_8_30132536_30134220_30177058_30181551_RR	OBD183-2189
37	Hg38_11_63903088_63909160_64170615_64174763_FF	OBD183-2193
38	Hg38_5_140633075_140635001_140703783_140710933_RR	OBD183-1141
39	Hg38_5_75334371_75336800_75421277_75426441_FR	OBD183-1057
40	Hg38_1_203176687_203182913_203381983_203386317_FR	OBD183-1105
41	Hg38_14_87760445_87771456_87814113_87820852_FF	OBD183-1121
42	Hg38_X_1815902_1820657_1830879_1832345_RR	OBD183-2197
43	Hg38_18_28150489_28152101_28322522_28342464_RR	OBD183-1009
44	Hg38_19_55104500_55106500_55175439_55177687_FR	OBD183-2201
45	Hg38_1_201489507_201495563_201554857_201559521_RF	OBD183-1165
46	Hg38_1_159614098_159617749_159863199_159866609_RF	OBD183-1085
47	Hg38_1_201387330_201388480_201554857_201559521_RF	OBD183-1101
48	Hg38_12_110242070_110251176_110379081_110380448_RR	OBD183-2205
49	Hg38_2_53751287_53756935_53865030_53869534_FR	OBD183-1049
50	Hg38_1_159708294_159713893_159863199_159866609_RF	OBD183-1093
51	Hg38_12_8119443_8124985_8219310_8221338_FR	OBD183-2209
52	Hg38_12_8083961_8090020_8219310_8221338_FR	OBD183-2213
53	Hg38_12_8219310_8221338_8280556_8285132_RR	OBD183-2217
54	Hg38_12_8219310_8221338_8280556_8285132_RF	OBD183-2221
55	Hg38_12_8219310_8221338_8360776_8364742_RR	OBD183-2225
56	Hg38_12_8163206_8167779_8219310_8221338_FR	OBD183-2229
57	Hg38_12_8219310_8221338_8328073_8331432_RR	OBD183-2233
58	Hg38_12_8219310_8221338_8255950_8259013_RR	OBD183-2237
59	Hg38_X_1815902_1820657_1862592_1866142_RR	OBD183-2241
60	Hg38_3_196593741_196597691_196703167_196707250_FR	OBD183-2245
61	Hg38_5_75334371_75336800_75481806_75484209_FF	OBD183-2249
62	Hg38_2_161723651_161741319_161918005_161924903_FF	OBD183-2253
63	Hg38_6_123594_131362_212545_213965_RF	OBD183-2257
64	Hg38_1_27649538_27652259_27797543_27806064_RF	OBD183-2261
65	Hg38_X_133714472_133717449_133849575_133858877_FR	OBD183-2265
66	Hg38_3_55467637_55470328_55535014_55543312_RF	OBD183-2269
67	Hg38_4_145148297_145150633_145243015_145254513_FF	OBD183-2273
68	Hg38_19_55633863_55635586_55776223_55778463_RF	OBD183-1053
69	Hg38_5_75334371_75336800_75398018_75402594_FR	OBD183-2277

70	Hg38_12_57452982_57456003_57579684_57582438_FF	OBD183-1177
71	Hg38_17_7811362_7813705_7929728_7931226_RR	OBD183-1029
72	Hg38_12_54361590_54362896_54554738_54558191_FR	OBD183-1145
73	Hg38_19_55562835_55568514_55776223_55778463_FF	OBD183-1197
74	Hg38_11_71580341_71586157_71832412_71840897_FR	OBD183-2281
75	Hg38_6_88188008_88196988_88297132_88306521_FF	OBD183-2285
76	Hg38_6_29569885_29574451_29588494_29591069_FR	OBD183-2289
77	Hg38_5_75334371_75336800_75441359_75447695_FR	OBD183-2293
78	Hg38_1_6450603_6452273_6528747_6530250_RR	OBD183-2297
79	Hg38_1_203176687_203182913_203266998_203270781_FF	OBD183-1097
80	Hg38_5_100903133_100904261_100940255_100954422_FR	OBD183-1157
81	Hg38_13_52856863_52871994_53051233_53054182_RR	OBD183-1033
82	Hg38_13_52856863_52871994_52963892_52968641_RR	OBD183-1041
83	Hg38_3_105173425_105200082_105366513_105369025_FR	OBD183-2301
84	Hg38_11_71704758_71706689_71832412_71840897_FR	OBD183-2305
85	Hg38_5_53482717_53490284_53612898_53621230_RR	OBD183-1133
86	Hg38_1_20178914_20185415_20244434_20247937_FR	OBD183-1089
87	Hg38_7_44346974_44354823_44468808_44471840_RF	OBD183-2309
88	Hg38_2_47522457_47530546_47606707_47620212_FF	OBD183-2313
89	Hg38_16_85802241_85804577_85911952_85914037_RR	OBD183-2317
90	Hg38_16_85802241_85804577_86036135_86037752_RR	OBD183-2321
91	Hg38_8_143703137_143706882_143989689_143994132_RR	OBD183-2325
92	Hg38_19_38110009_38116645_38359207_38361549_RF	OBD183-2329
93	Hg38_15_53421523_53422709_53572546_53588481_FR	OBD183-2333
94	Hg38_16_85802241_85804577_85867011_85868324_RR	OBD183-2337
95	Hg38_13_52856863_52871994_52977238_52983123_RR	OBD183-2341
96	Hg38_19_11340579_11345804_11410807_11412077_FR	OBD183-2345
97	Hg38_6_88064644_88073249_88188008_88196988_RF	OBD183-2349
98	Hg38_14_87632983_87637573_87760445_87771456_RF	OBD183-2353
99	Hg38_6_31492265_31495553_31621846_31623705_RF	OBD183-1065
100	Hg38_1_203176687_203182913_203386317_203394696_FF	OBD183-2357
101	Hg38_6_31621846_31623705_31710695_31717311_FR	OBD183-2361
102	Hg38_7_156960823_156963130_157154305_157160294_RR	OBD183-2365
103	Hg38_2_47522457_47530546_47563847_47570151_FR	OBD183-2369
104	Hg38_1_203176687_203182913_203318340_203323344_FF	OBD183-2373
105	Hg38_1_87788995_87790981_87818262_87826752_RF	OBD183-2377
106	Hg38_2_1263661_1274578_1419778_1424769_RF	OBD183-2381
107	Hg38_16_19856577_19858875_20038454_20045219_FR	OBD183-2385
108	Hg38_17_7929728_7931226_8091106_8097573_RR	OBD183-2389
109	Hg38_14_24307628_24311588_24485793_24490540_RR	OBD183-2393

110	Hg38_14_87841922_87846485_88021020_88026181_FR	OBD183-2397
111	Hg38_1_164748288_164754002_164931877_164940038_FR	OBD183-2401
112	Hg38_1_39655161_39659067_39836323_39843028_FF	OBD183-2405
113	Hg38_1_121080942_121088798_121289281_121293407_RF	OBD183-2409
114	Hg38_1_87818262_87826752_87928072_87933012_FF	OBD183-2413
115	Hg38_1_87725315_87731896_87818262_87826752_RF	OBD183-2417
116	Hg38_6_31621846_31623705_31760827_31764995_FR	OBD183-2421
117	Hg38_20_30175888_30181348_30407864_30413511_RR	OBD183-2425
118	Hg38_6_88188008_88196988_88297132_88306521_FR	OBD183-2429

表3.a6

編號	引子序列	引子ID	引子序列
1	GGCAAAGAGCAGACAGGGAAAGG	OBD183-115	CTCTCCCTTCTCTCCTACCCTGC
2	TGACAGCAGAAGGAGCAGGACCACAA	OBD183-111	AGGATGGTGACCCTTGTATCAGTTAG
3	ACAGGGAAAGGGAGGCAGAAGGG	OBD183-1139	GTCCATCTGTCCAGTCAGGTCCT
4	ATTGATGATCTCGCGAGACGCTTT	OBD183-2163	AAAGGCGTCCAGTCTCGTGTATAAG
5	AAAGAGCAGACAGGGAAAGGGAGGCA	OBD183-1187	TATTCTTTCCCAGAGTCCCATCTTGG
6	GACGCAGGAATGGAAGGGAAAGG	OBD183-119	CTCCATCTCCCACAGCATCCAGC
7	TGAGGCGTGTCCGATGTGGGAAT	OBD183-1027	ACGACATCGCCGCAGCACTCATC
8	GAGGGAGAAAGGAATGAAGGCTGC	OBD183-117	GGTTGGGTTTTCTCAATAATCCATAG
9	CATAGTGGATTGAAACAGGGTGGAGC	OBD183-1063	GGAGAAGAGGACTGTAGAAGGAGACA
10	CCCCACAAGCCCACAAAAGCCAT	OBD183-113	CCGCCCATCTGTAAGCCCATCTC
11	ACAAGACCTCTCCTCCCTGAGTC	OBD183-1075	GCTGTTCCTGCCTCTCTGCTACG
12	CTCGCCTGACAGACGTTATTGTCT	OBD183-2167	CACAGGCAAAAATGTAACTTTCC
13	AGGTGGAGCCCATCAAGCGGTAT	OBD183-1007	TGAAGTGGCATCTCTCTCCCGCC
14	TGACCTTCCCCGCAGACAGTGCT	OBD183-1083	GTTTGGTAGTGGCTGTCTGGAGC
15	GAGACAGGCAGGTGAGAGAAAGG	OBD183-1047	ATCCGCCTCCACACACCCACACT
16	GGACAGTTTCCATAACT	OBD183-2171	TAACGCCCATCTACAC

	GCTGGC		TTAGCTATA
17	GAGGTGCTGGAGTGTG GCTGTGA	OBD183-1175	CGCTTGAGTTGGTGCT GAATGCC
18	TTGGCTGACCTTGGGTG TGGTGT	OBD183-1003	TGAAGTGGCATCTCTC TCCCGCC
19	TGAGGCGTGTCCGATGT GGGAAT	OBD183-1019	TGGGAGAGCACTCGGG AACCTCA
20	GAGACAGGCAGGTGAG AGAAAGG	OBD183-1079	CCTTTCCGCTACCTGGC TGTGGT
21	AAATCGAATCACTTCAT CGAATTCT	OBD183-2175	TTGAACACTCGGTCGA AGGCGCTCG
22	AGCAAGGTGAGGTGAC AGGGAGC	OBD183-1023	CCTGGAAGATGTGGGA GGCTGTT
23	TAGAGTACGTGTCCCAA CTGTTGC	OBD183-2179	GCACGCTACTGTTACG AGATTCCT
24	TAAGCGCGCGTACAGT AGGGCGA	OBD183-2183	CCGAAGAAAAGTTAAG CCCCTCG
25	GATGGGAGACAGGCAG GTGAGAG	OBD183-107	CTCTGGCTTGACCTTCT CCACTG
26	AGACATCCTGAGAGAC CAGAGGG	OBD183-1163	GCCTGGAGCAACTTCC TGTGCCA
27	AGGAGGAGCAGCACCA GCACTGT	OBD183-1155	CCTTCCTCTGGGCTCTC TGTAAC
28	TACAGGTTTGAGGTGCC CGTCGC	OBD183-1119	GGCTTCCAGTGTAGAG GTTACCC
29	GAGGGACGCAGGAATG GAAGGGA	OBD183-1183	GTGTGTTTTGAGGAGC ACCCAGC
30	ACAAGACCTCTCCTCCC TGAGTC	OBD183-1195	CCTGGTGGACTTGGCT TCGTTCC
31	GTGCCGCTGTGTAGGAA AGAAGC	OBD183-1115	GGTGTTGAGGTCCAGT CTTCCGC
32	ATGGACAACCAGGTGG CAGGAAAGGT	OBD183-1127	AAAGTATGTAGCAAAG CACCCCACTG
33	AAGGTAACCATCGGAG CCCGTGA	OBD183-2187	CTGGCATGAAATACTA CGGGCCTTC
34	TACCAAGAGGGTGGCA CTGGGCT	OBD183-1039	CGTGTGGTTATGGAAT CAGGGTGC
35	CTGAGGCGTGTCCGATG TGGGAA	OBD183-1015	AAGGACTTGAGCAGGT GATGGGC
36	CCCAACATAAGGCAAC TCATGCG	OBD183-2191	ATGATTGCCGCATTTTC ACGGTTGC
37	GGATACACATGCGCCTC GGTCCGA	OBD183-2195	TCATCAAGCCCGCCAA CGGGTTAG
38	CGGGTGCCGCTGTGTAG GAAAGA	OBD183-1143	GGAGTCCTTCACCACA CAGTCAC

39	ACACAAGAGAGAGAGACGCAGGTGAC	OBD183-1059	CAGCCAGGTAGAAATGAATACAGGGT
40	GATGGGAGACAGGCAGGTGAGAG	OBD183-1107	GCAGACAAAGGCTGAGAGAGAGG
41	CTGCCAATGAGAGTGTCAGCCCG	OBD183-1123	CAGTGGATGGTGGAAACCCTGGA
42	GGAACGAATATGAGGCAGACTCTCA	OBD183-2199	ATCGCTATCTGTCCGTAACGTCG
43	AAGGCAGAGAACAAAACACAGAGGTG	OBD183-1011	GCAGGAAAGACTCAAGCACTCTGGAC
44	CACAGAAGGCGTGCGAGCACCAATG	OBD183-2203	CTATCATCGGTCACTTGTGTTAGGT
45	GACTGGGAGCAGGGTTTTGATGG	OBD183-1167	GCCTCACTGTCTCAGCCCTGCTA
46	TTGGAGGTGGAGGTCTGCCAGGT	OBD183-1087	TGTCCCCTTCTACTACCCCACCT
47	GACTGGGAGCAGGGTTTTGATGG	OBD183-1103	CCCCAAGCAGGCTCTGGCACATA
48	TACCAAAGCTGAGAGTCGTCTATC	OBD183-2207	TATCTTCTAATAGTACCTCTATTAA
49	CATTGCCACTCCCAGTCGGGCTA	OBD183-105	GGGAAGGAAAAGAGGGCAAGTCC
50	TTGGAGGTGGAGGTCTGCCAGGT	OBD183-1095	GGTCCACTGGCAATCACCCTACT
51	ATTGAGTTGTTGACCCTACAAGCA	OBD183-2211	TAAGCCGACAGGACCGAACGGTCA
52	ATCGTCGTCGCTCCTCAAACTTG	OBD183-2215	TGTGGCGTTCACGATTCAGGCAT
53	CGCTCTATCAACTCTAGAATGTTGT	OBD183-2219	ATACAAGGCCAATCGTGCGGATGCG
54	GTGCTCAGGACGACAGTCTGGGA	OBD183-2223	AGCAGAAGGAGCAGGACCACAAG
55	CAGGGGCCCTTCTAACGAAGCGGG	OBD183-2227	TGCTGGATATCCTAGTGAGCGCGA
56	GCTGCTTGCTTGTGGGACTTGCC	OBD183-2231	AGCAGAAGGAGCAGGACCACAAG
57	CAAGTCGCAGCTCGGGGCAGATCTT	OBD183-2235	ATGGGAACTAAGGGTGAGTAGTA
58	ATGGGCGCTCTTACTCCGTTGGGC	OBD183-2239	AGCATGTGGGACGTAGTCGGAGAG
59	CTTAAAGACTGTCCATTTGACAACA	OBD183-2243	ATTTTCACGTAGATCATAACCGGT
60	TCATCGGCGGGAGGCGGTCCCAGGC	OBD183-2247	TCTCAGAAAAGCTCTGGAGCCACCC
61	CCAAATCGCAGCGTAG	OBD183-2251	CCTCTCTGAGAGTCGG

	GGCTAGGA		ATCTCGC
62	TCCAGTAAAGGGCCGG GAGGTTAT	OBD183-2255	GAAACTGTTCAGCTCT GGCAAGA
63	AACCGCACATAGTAAA TAGCTCA	OBD183-2259	CGTACCAAATTCCGTTT TATAAGG
64	GGTGATGAGCAAAGAA GTGGAAA	OBD183-2263	GAAATAAGCAGGTCCC GTTACCTC
65	GCTTTAGTGTTGAAATC TCCCTTG	OBD183-2267	AATTGGCTTAACTGTA GCATGCACA
66	CAGTTTCTGACCGGCCG TGGGCC	OBD183-2271	ATCCAAACACAAATCG CTGTGGCA
67	TCGCGATGAATGGGGT GAGCGGGA	OBD183-2275	ATATGTCCTCGTTACTA TTGGTT
68	CTGAGGCGTGTCCGATG TGGGAA	OBD183-1055	GTTTGCTGTCCTCCATC CTCCCA
69	CGCGAAGGAGGTGCAA GGCCCAAAG	OBD183-2279	AAGGGGTCAAGGACCT ACATCAA
70	ACAGGGAAAGGGAGGC AGAAGGG	OBD183-1179	TTACCACGCCAATCCC AGCCCTT
71	GATGGAGCAGAACAGG AAGTTGGG	OBD183-103	TGAAGTGGCATCTCTC TCCCGCC
72	CCAGGTGAGGTTGGCA GCAAGCA	OBD183-1147	CCCTGCCTCTTCACAA AGCAAGC
73	GGATGGATGTGGGAAT GGATGGG	OBD183-1199	CTGAGGCGTGTCCGAT GTGGGAA
74	TATCTCAGGTATCTTGA AAGATT	OBD183-2283	TGGAAGAGACTATACT CAGGTTA
75	CACCCGTGCTAGTGTCG TATACTG	OBD183-2287	TCAAATCTAGATGTAT CATGCGCAA
76	GAAATAGAGGGCTTAC TATATGTT	OBD183-2291	CTCGCTTAAGCAGGTG CGTGCTT
77	ATCAAAATCGTAGCCGC ATGGCA	OBD183-2295	GGGCCATTTAAAGAAA GAGGAACAG
78	CGGTCCCGCAGCTCCGG TTAACGCT	OBD183-2299	AGTATCAGTTCGCCTG TGAGCAGC
79	GATGGGAGACAGGCAG GTGAGAG	OBD183-1099	TGTCACCTCTTCCACCC TCTCAG
80	TCACCTCTCCTCCGTCC CACCATTTT	OBD183-1159	ACAATCTCTCCACTAA GCAAACCCTG
81	GACCAAAGCACCTCTG AAGGACAAAG	OBD183-1035	CACATACAAAGCATCA TTCCAGGTGC
82	GACCAAAGCACCTCTG AAGGACAAAG	OBD183-1043	CCTCAGGGAAAGGGAA AACCAAGAGT
83	TCCTAACTGGATTGCCA CACTTGGTG	OBD183-2303	CCCTGGGACTAACACT TTCTGTGATG

84	GCTAATACCTGTAAGAG GTAGTT	OBD183-2307	ACCCCGTCATTCATAC CGAGAACC
85	TGAGTGAGCAGTGAGC GGTGGCA	OBD183-1135	CCAAAAGAAAACTGAC CCCTTAGAGG
86	CTTTTGAGAATGCCGAG GTAATGGGC	OBD183-109	TGCTATTATCTGGTGAC TGGACTGGG
87	AGAATCACCTACTCAGG GACACACTG	OBD183-2311	GAAAGGTTATCCAGAA TACAGAAGGG
88	GCCCTAAGGCTCTCTGG AGCGGAGT	OBD183-2315	ATAACTGACACATTGT TACAAAA
89	AGCAAGGTGAGGTGAC AGGGAGC	OBD183-2319	GCTCTCCCTTGTAGCCT GTTAGG
90	ACAGCAAGGTGAGGTG ACAGGGA	OBD183-2323	TGGCAGCATCGCACCA TCCCCAT
91	GCGCGGAAAAGTCAAT AGAAGAT	OBD183-2327	TGCTATTGGCTAAAAT TAGAAAG
92	GGGAGGACTCTGGTCTC AGGGAT	OBD183-2331	CAAGGAATGCCCGAGT CAGGTGA
93	TCTCTTACCATCAATTG ACATCTTT	OBD183-2335	ATACCTGCAACCCCGC AACTGTCCT
94	AGCAAGGTGAGGTGAC AGGGAGC	OBD183-2339	AAGAGTAGGAAACCCC TGGCAGC
95	GACCAAAGCACCTCTG AAGGACAAAG	OBD183-2343	GAACATCTACTTCAAC CTCCTGCCCA
96	GTTCCCGCCTTCCTCCA TCTTGC	OBD183-2347	CCCCTTGCCTCTTGTTT GAAGCC
97	CTCCCCGAGACCGATAA GCAATCAG	OBD183-2351	TGAAGGTGTAATCAGT TTGAGTA
98	ACAGGTGGGTCCGCAC AGTCGCC	OBD183-2355	TCCTGTCCCGACAATG CGGGTGGCA
99	ATAAATGTGTCCCAGGA TAGGAGGC	OBD183-1067	GTTTTCAGTGGAATAG AGAGATGTGT
100	CCAGTCGATTGATAAGG CGGCGCAC	OBD183-2359	AACGCCAACCTTGTGC TAAGCACC
101	ATAAATGTGTCCCAGGA TAGGAGGC	OBD183-2363	AATGCTCCTCCTTTCCT TCAGTCCCC
102	TCCCAACATTTGCCACC ACCTACTCC	OBD183-2367	GAGAAAATAATGGTGG GAAGTTAGGG
103	AGTCGTCCGGAGACGT GGTTCCT	OBD183-2371	TAAAGCCTCGTTATTG ATCCGGTT
104	GATGGGAGACAGGCAG GTGAGAG	OBD183-2375	TTCTCCTGTGACAACTC CCTGGG
105	GCTGTCTTCCCCGTCAC ACATCC	OBD183-2379	CCAAGGCAAAGCACGA AGGATGC
106	GAAGACCAGGAGAGGC	OBD183-2383	GCCTTTCTTTGCCCAGT

	ATCAACTG		ATTAGC
107	CGCAATGACTGGAACG GGATTCTCTA	OBD183-2387	CACTTGGAGTTGATGA CTTGCCTGAC
108	TGAAGTGGCATCTCTCT CCCGCC	OBD183-2391	TCCACTGCCCTGCTTCT CACCAA
109	TCTCCTGCTCCCCACTC CACAGT	OBD183-2395	CCAGCACAGAGTGTCC GTTTCCA
110	TCAGCAGGGCAGGAAC ACAGTGG	OBD183-2399	CACAGCAGAGGACCTA TTCCCAG
111	TGGCAGGAGTAGCCGT GAAAGGC	OBD183-2403	GGCTGGGACTGTGAAA CCTGGAA
112	GGGCAGACAGGCAGAA GGACAGA	OBD183-2407	GACAGATGGCACTACA GAAGGGC
113	AGGCGACAGGGTTCGG GCTTTATTCT	OBD183-2411	CTCTGATAACATCTTCC CTCTACACG
114	CCCGTCACACATCCAAA CAAGAGCAT	OBD183-2415	GAACCTATGAAGGACC ACTAAGGAGC
115	CCCCGTCACACATCCAA ACAAGAGCA	OBD183-2419	CATTTACTTTTACCTCT CCTTCCAGC
116	ATAAATGTGTCCCAGGA TAGGAGGC	OBD183-2423	TTATCCCCTTCCTCAAT CCCACCTCC
117	TCACCCCGCTCGTGTAG AACAGCG	OBD183-2427	AAAACGAACACCGAGA ATGCAGAA
118	TAGAGAACAAGAGGTG CTGGAGTGTG	OBD183-2431	TCACATCCTCCTTGAAC TATTCTGTA

表3.a7

編號	探針	基因	RP
119	Hg38_5_44708519_44718992_44785151_44789520_RF	FGF10	87836.34591
120	Hg38_19_49705556_49707798_49902219_49904931_RR	AKT1S1	98290.50026
121	Hg38_7_156960823_156963130_156997451_157002320_RR	MNX1	71687.00739
122	Hg38_5_53482717_53490284_53547734_53551656_RR	FST	88679.68983
123	Hg38_12_54361590_54362896_54476649_54480906_FF	GPR84	88026.9097
124	Hg38_1_203176687_203182913_203216286_203223882_FF	CHI3L1	83735.49887
125	Hg38_1_222313331_222325139_222441386_222443155_RF	MIA3	87164.68193
126	Hg38_1_121248861_121256803_121333642_121342053_RF	FCGR1B	75416.59036
127	Hg38_11_62592659_62593709_62832564_62835574_RR	TMEM179B	82225.58952
128	Hg38_12_54361590_54362896_54554738_54558191_FF	GPR84	91177.99339
129	Hg38_1_20049001_20056499_20178914_20185415_RF	PLA2G2D	77018.95665
130	Hg38_6_31446120_31450854_31621846_31623705_RF	AIF1	67251.16575
131	Hg38_15_50130724_50136085_50246566_50252745_FR	ATP8B4	84971.7205
132	Hg38_3_55535014_55543312_55612203_55618906_FF	WNT5A	88723.8519
133	Hg38_10_30369802_30374526_30437454_30440597_RF	MAP3K8	87279.79485

134	Hg38_5_75258048_75262845_75334371_75336800_RF	COL4A3BP	84526.94398
135	Hg38_6_33314273_33315676_33463232_33466480_FF	TAPBP	67876.06938
136	Hg38_20_23532159_23546814_23621720_23626001_FF	CST3	88568.20301
137	Hg38_1_153390496_153396692_153513973_153518338_RR	S100A7	83780.77149
138	Hg38_13_52856863_52871994_52883407_52889776_RR	OLFM4	85453.44397
139	Hg38_17_7665587_7668453_7929728_7931226_FR	EFNB3	74941.58463
140	Hg38_7_50286505_50295259_50544402_50549189_FR	IKZF1	85006.69353
141	Hg38_13_52856863_52871994_52892346_52898772_RR	OLFM4	97547.21362
142	Hg38_1_27610668_27612988_27649538_27652259_RR	FGR	79412.98785
143	Hg38_8_22681793_22682820_22815485_22819827_FR	EGR3	82717.07453
144	Hg38_19_11340579_11345804_11529780_11532285_FF	ECSIT	70032.18988
145	Hg38_19_11340579_11345804_11460171_11462756_FR	RAB3D	74325.76416
146	Hg38_6_26251913_26253832_26447582_26451332_RF	BTN2A2	74530.3491
147	Hg38_1_19972751_19977472_20178914_20185415_RF	PLA2G2A	74314.40789
148	Hg38_6_88146572_88149296_88188008_88196988_RF	CNR1	81860.02161
149	Hg38_22_42372891_42375481_42578934_42580470_RF	NFAM1	73010.50576
150	Hg38_8_64551143_64558219_64578198_64580985_RR	CYP7B1	88305.87208
151	Hg38_22_42405467_42408113_42578934_42580470_RF	NFAM1	80338.79435
152	Hg38_11_114241978_114246699_114439739_114443191_FR	ZBTB16	85996.62695
153	Hg38_5_76793348_76797693_76897248_76903956_RF	F2RL1	85235.48486
154	Hg38_1_27649538_27652259_27838007_27841075_RF	IFI6	83318.9954
155	Hg38_16_22513299_22515891_22559024_22570518_FF	POLR3E	83027.21437
156	Hg38_5_53482717_53490284_53554764_53563025_RR	FST	92529.50484
157	Hg38_17_7889503_7895357_7929728_7931226_FR	TRAPPC1	84835.85238
158	Hg38_2_47522457_47530546_47595212_47601970_FR	MSH2	78163.52614
159	Hg38_1_36461525_36463186_36575866_36579237_RF	CSF3R	77121.89746
160	Hg38_16_86372874_86378933_86513165_86515439_RR	FOXF1	79942.3235
161	Hg38_8_53298881_53306504_53518003_53523754_RF	OPRK1	94581.09623
162	Hg38_6_31588788_31590397_31621846_31623705_RF	AIF1	68435.03959
163	Hg38_2_219136508_219146735_219271447_219273060_FR	NHEJ1	86467.33636
164	Hg38_14_96122093_96130378_96263508_96266492_RF	BDKRB1	86504.3109
165	Hg38_10_73661598_73666900_73777774_73781187_RR	SEC24C	89527.307
166	Hg38_6_31621846_31623705_31693387_31703142_FR	BAG6	78489.59358
167	Hg38_2_47522457_47530546_47666116_47672220_FR	MSH2	83025.74574
168	Hg38_1_191729725_191732129_191869196_191881753_FR	RGS1	87903.89085
169	Hg38_7_104953069_104957259_105015558_105026847_RR	KMT2E	123658.9696
170	Hg38_12_54173791_54182056_54361590_54362896_RF	GPR84	96202.26462
171	Hg38_6_27860135_27864160_28014483_28022084_FR	HIST1H3I	82308.28752
172	Hg38_5_75236091_75239565_75334371_75336800_FF	COL4A3BP	92507.98272
173	Hg38_6_31817301_31818773_31878016_31881028_RF	HSPA1A	78213.14494

174	Hg38_17_7811362_7813705_7929728_7931226_RF	KDM6B	92203.46121
175	Hg38_14_24307628_24311588_24511833_24515792_RR	LTB4R	108316.2481
176	Hg38_1_121333642_121342053_121413898_121422150_FR	FCGR1B	75415.05882
177	Hg38_20_1589686_1605075_1636521_1641313_FR	SIRPB1	78259.09721
178	Hg38_5_100903133_100904261_100940255_100954422_FF	SLCO4C1	88801.69101
179	Hg38_4_145148297_145150633_145295262_145303638_FR	ABCE1	71043.23202
180	Hg38_17_7861815_7869138_7929728_7931226_FR	TRAPPC1	82177.5641
181	Hg38_16_85802241_85804577_85933137_85934694_RR	IRF8	90446.47069
182	Hg38_1_121052779_121056014_121248861_121256803_RR	FCGR1B	76230.75824
183	Hg38_6_106106013_106107198_106244728_106262141_RR	ATG5	77094.90975
184	Hg38_17_7861815_7869138_7929728_7931226_RR	TRAPPC1	82404.478
185	Hg38_1_121289281_121293407_121403378_121413898_FF	FCGR1B	78301.51501
186	Hg38_12_49954074_49960858_50101385_50107364_FF	RACGAP1	103477.8303
187	Hg38_6_32178822_32181952_32282603_32287434_RR	AGER	92115.75296
188	Hg38_11_6164440_6172634_6399479_6402059_RF	APBB1	89050.5491
189	Hg38_20_177034_181274_305424_309823_FR	DEFB128	76150.09639
190	Hg38_17_7929728_7931226_7944762_7946565_FF	TRAPPC1	90240.21925
191	Hg38_3_55535014_55543312_55612203_55618906_FR	WNT5A	97085.63511
192	Hg38_2_8571790_8576812_8640383_8646383_FF	ID2	96139.64242
193	Hg38_6_32934293_32937112_33060957_33074774_FF	HLA-DMA	88786.60149
194	Hg38_3_187569317_187579639_187726556_187727893_FR	BCL6	101438.3337
195	Hg38_1_39655161_39659067_39769500_39772730_FR	PPIE	84545.84627
196	Hg38_12_55953308_55956138_56112355_56115503_RR	PA2G4	99642.94851
197	Hg38_8_53448228_53464529_53518003_53523754_FF	OPRK1	88339.66075
198	Hg38_X_72208498_72213408_72340340_72345964_FF	CITED1	103970.4648
199	Hg38_5_60437025_60452736_60528868_60530657_RF	PDE4D	94525.29468
200	Hg38_6_27860135_27864160_27892394_27893632_FR	HIST1H3I	77795.67217
201	Hg38_19_11340579_11345804_11418077_11420873_FF	RAB3D	75158.23965
202	Hg38_6_31621846_31623705_31658615_31662274_FR	BAG6	73476.96162
203	Hg38_6_27833806_27836574_27892394_27893632_FF	HIST1H3I	87306.02454
204	Hg38_10_30369802_30374526_30437454_30440597_RR	MAP3K8	99482.11373
205	Hg38_1_36421193_36424970_36575866_36579237_RF	CSF3R	88238.80531
206	Hg38_19_18333551_18335634_18573351_18575967_FR	UBA52	101798.2618
207	Hg38_4_137465162_137478589_137647185_137649115_FR	SLC7A11	104516.3011
208	Hg38_2_47522457_47530546_47552565_47559543_FF	EPCAM	82019.4599
209	Hg38_11_128362004_128366353_128529463_128539984_RR	ETS1	95196.97394
210	Hg38_1_20161773_20167840_20178914_20185415_RF	PLA2G2F	71067.54178
211	Hg38_1_121333642_121342053_121433689_121438873_FF	FCGR1B	74438.73456
212	Hg38_19_11261901_11265731_11340579_11345804_RF	RAB3D	81266.52708
213	Hg38_1_159779096_159781322_159863199_159866609_RF	FCRL6	102134.347

214	Hg38_14_87618180_87629304_87841922_87846485_RF	GPR65	72699.81319
215	Hg38_2_215339857_215344488_215450480_215454642_FF	FN1	96409.36325
216	Hg38_12_54361590_54362896_54482792_54487121_FF	GPR84	100643.6652
217	Hg38_1_121333642_121342053_121465918_121472610_FR	FCGR1B	75113.82198
218	Hg38_19_14087074_14088724_14138048_14139567_FF	PRKACA	100867.5092
219	Hg38_3_55486659_55489812_55535014_55543312_RF	WNT5A	101340.9799
220	Hg38_X_133584341_133592788_133714472_133717449_RF	GPC3	89298.90821
221	Hg38_6_41533263_41541541_41639865_41645770_FF	TFEB	83891.12372
222	Hg38_20_23532159_23546814_23581107_23587842_FR	CST9	103099.2686
223	Hg38_7_6241289_6247872_6305163_6306814_FR	RAC1	96671.96879
224	Hg38_8_85458958_85464677_85620981_85632239_FR	CA2	94553.62101
225	Hg38_1_39655161_39659067_39891844_39898103_FF	PPIE	85073.55945
226	Hg38_1_121080942_121088798_121333642_121342053_RF	FCGR1B	81524.31487
227	Hg38_19_50382303_50383705_50507414_50511937_FR	NR1H2	91360.83698
228	Hg38_6_27728784_27735060_27860135_27864160_RF	HIST1H3H	82074.91985
229	Hg38_13_52856863_52871994_53037034_53038116_RR	OLFM4	100019.3414
230	Hg38_19_55646678_55648748_55776223_55778463_FF	NLRP9	90744.99246
231	Hg38_3_107828110_107834026_107847362_107853810_FF	CD47	86522.95908
232	Hg38_1_121302597_121312167_121333642_121342053_RF	FCGR1B	75746.22226
233	Hg38_6_33032719_33045940_33181270_33183497_RF	HLA-DPA1	86309.24088
234	Hg38_6_108163024_108164102_108359267_108371469_RR	OSTM1	102519.1724
235	Hg38_11_6268414_6277518_6399479_6402059_RF	APBB1	88516.17938
236	Hg38_19_38359207_38361549_38528221_38534565_FF	RASGRP4	92074.97165
237	Hg38_1_203176687_203182913_203223882_203229092_FR	CHI3L1	92883.913

表3.b1

編號	FC:(1類/2)	pfp	P值	CCS
119	-1.146766869	0.001734234	0.001156156	免疫
120	-1.146610946	0.001523301	0.000899584	免疫
121	-1.146187181	0.004081719	0.00373727	免疫
122	-1.146140194	0.00048383	0.0000468050353447332	免疫
123	-1.146033669	0.000876094	0.000288335	免疫
124	-1.145584041	0.001042044	0.00044712	免疫
125	-1.14558036	0.000508234	0.0000588758584735151	免疫
126	-1.145394787	0.001087752	0.000504864	免疫
127	-1.14525572	0.001042044	0.000448475	免疫
128	-1.145085484	0.000548965	0.000115815	免疫
129	-1.145048997	0.001256517	0.000633498	免疫
130	-1.144585667	0.002297443	0.00178706	免疫

131	-1.144362485	0.002056946	0.001484126	免疫
132	-1.144178863	0.00063478	0.000166288	免疫
133	-1.144123651	0.001038693	0.000423895	免疫
134	-1.144027903	0.001303562	0.000690728	免疫
135	-1.143809831	0.00223996	0.001653979	免疫
136	-1.143798281	0.000568148	0.000127054	免疫
137	-1.14358087	0.002114975	0.001543843	免疫
138	-1.143441535	0.000548965	0.0000893216847399948	免疫
139	-1.14340434	0.001660717	0.00107298	免疫
140	-1.143184548	0.00048383	0.0000318248708495281	免疫
141	-1.142263822	0.000508234	0.0000598961205249950	免疫
142	-1.142222301	0.002297443	0.00175262	免疫
143	-1.142218474	0.000691883	0.000204278	免疫
144	-1.142194183	0.002718332	0.002259542	免疫
145	-1.141901437	0.001937994	0.001363993	免疫
146	-1.141806893	0.002581943	0.002121453	免疫
147	-1.141779212	0.002100898	0.001524702	免疫
148	-1.141767242	0.001613021	0.0010209	免疫
149	-1.141697254	0.003808064	0.003422437	免疫
150	-1.141664358	0.000691883	0.000196547	免疫
151	-1.141650335	0.001608284	0.001011115	免疫
152	-1.141519846	0.000580521	0.000144718	免疫
153	-1.141503061	0.000691883	0.000192651	免疫
154	-1.141362141	0.001257335	0.000652541	免疫
155	-1.141312609	0.001087752	0.000500407	免疫
156	-1.141306493	0.000508234	0.0000600445239743399	免疫
157	-1.141090521	0.000780545	0.000247008	免疫
158	-1.141005717	0.004288867	0.00396313	免疫
159	-1.14081435	0.001638666	0.001044045	免疫
160	-1.140775221	0.004735379	0.004495613	免疫
161	-1.140725713	0.000691883	0.000197463	免疫
162	-1.140707987	0.003576526	0.003111556	免疫
163	-1.140700468	0.001038693	0.00039895	免疫
164	-1.140699319	0.001038693	0.000412663	免疫
165	-1.140696831	0.000568148	0.0001253	免疫
166	-1.140678683	0.001087752	0.000499089	免疫
167	-1.140529444	0.003808064	0.003417198	免疫

168	-1.140487352	0.001087752	0.000496518	免疫
169	-1.14035827	0.001038693	0.000438267	免疫
170	-1.140295487	0.000580521	0.000143875	免疫
171	-1.14019275	0.001375885	0.000777927	免疫
172	-1.140190056	0.000749172	0.000233919	免疫
173	-1.140090269	0.003207085	0.002739994	免疫
174	-1.140013979	0.000558904	0.000120271	免疫
175	-1.139869101	0.000065499968332877	0.000000276371174400325	免疫
176	-1.139864017	0.001803063	0.001224865	免疫
177	-1.139617942	0.002297443	0.00177739	免疫
178	-1.139591682	0.001038693	0.000392403	免疫
179	-1.139263741	0.003054479	0.002573073	免疫
180	-1.139248288	0.001257335	0.000647292	免疫
181	-1.139203035	0.000580521	0.000136699	免疫
182	-1.139134604	0.002035483	0.001442874	免疫
183	-1.138925048	0.005042802	0.004913944	免疫
184	-1.138898567	0.001711945	0.00112685	免疫
185	-1.138557886	0.001716439	0.00113705	免疫
186	-1.138453619	0.001256517	0.000636211	免疫
187	-1.138262072	0.000539173	0.0000773497255719469	免疫
188	-1.138220841	0.001038693	0.000435859	免疫
189	-1.13809959	0.001496732	0.000858884	免疫
190	-1.137929608	0.000548965	0.00011276	免疫
191	-1.137921067	0.000855596	0.000277978	免疫
192	-1.137875489	0.00048383	0.0000393432820729938	免疫
193	-1.137744871	0.000548965	0.0000879018239273439	免疫
194	-1.137699742	0.00043607	0.0000128796904422608	免疫
195	-1.137631552	0.001937994	0.001365591	免疫
196	-1.137625783	0.001905941	0.001313269	免疫
197	-1.137573687	0.001183842	0.000558133	免疫
198	-1.137537352	0.000520629	0.0000640139738392802	免疫
199	-1.137338682	0.001087752	0.000485637	免疫
200	-1.1371575	0.002321293	0.001841364	免疫
201	-1.13712068	0.003576526	0.003131998	免疫
202	-1.137103255	0.003361092	0.002893092	免疫
203	-1.137039484	0.001555148	0.000951462	免疫
204	-1.136815419	0.00088347	0.00029449	免疫

205	-1.136790428	0.001014024	0.000376515	免疫
206	-1.136702764	0.000439511	0.0000206619043902302	免疫
207	-1.136652217	0.000439511	0.0000171493725559236	免疫
208	-1.136614547	0.005174643	0.005065473	免疫
209	-1.136581836	0.000508234	0.0000593109590109667	免疫
210	-1.136555095	0.005716634	0.005620151	免疫
211	-1.136552516	0.002418599	0.001959371	免疫
212	-1.136518191	0.001509078	0.000872336	免疫
213	-1.136412937	0.000211853	0.00000357558179302948	免疫
214	-1.136228821	0.003834101	0.003478193	免疫
215	-1.136198655	0.00048383	0.00003611969078374 01	免疫
216	-1.135931381	0.000580521	0.000144351	免疫
217	-1.135913696	0.002324775	0.001853935	免疫
218	-1.135824779	0.001183842	0.000566503	免疫
219	-1.135789691	0.000580521	0.000146967	免疫
220	-1.135560291	0.001529047	0.00090994	免疫
221	-1.135554297	0.001523301	0.00089984	免疫
222	-1.135513678	0.001605895	0.001002837	免疫
223	-1.135505139	0.000548965	0.0000886915157204148	免疫
224	-1.135279349	0.00048383	0.0000383401233932096	免疫
225	-1.135212221	0.002387363	0.001923993	免疫
226	-1.13504303	0.001364867	0.000755679	免疫
227	-1.134973957	0.001014024	0.00037646	免疫
228	-1.13496699	0.002266378	0.001702174	免疫
229	-1.134941098	0.000399267	0.0000101080167303500	免疫
230	-1.134914024	0.002900401	0.00242312	免疫
231	-1.134693113	0.003054479	0.002577619	免疫
232	-1.134660959	0.002581943	0.002124384	免疫
233	-1.134546677	0.001605895	0.001000896	免疫
234	-1.134543655	0.000336555	0.00000710031793491449	免疫
235	-1.134518179	0.002251343	0.001681383	免疫
236	-1.134382464	0.000749172	0.000233645	免疫
237	-1.134282194	0.001183842	0.000564588	免疫

表3.b2

	探針序列	探針位置
編號	**60 mer**	**Chr**

119	TTGCCCCAGTGACTGTTTGAGCAGTGCCTCGAATGATTATAACATATAGGTAAGTAAAAT	5
120	GATCTCACTACGTTGCCCTAGGCTGGTCTCGAACTCCTGACTTCGGGTGATCCCTCCCAT	19
121	CCCAGCTCCTGCAAAACTCCTCCTGACTTCGACACTGAAAACCTGTGTATGAAGTCACCG	7
122	GAGACGCGGGAGAAAAGTAGGAAATAAATCGAGCAACAAAGGGCCATAGGGTGACTGTAT	5
123	CAAAGCAGAGGAACACAGCAAAACACATTCGAAAGAAAGCATAATAGAAGTTAAAACATC	12
124	GTCCCAAGTGGCATGAGAGGTAGACTCATCGATGTTCGGGGGTAGAAAGTGCTCTGGATG	1
125	GACAGCTGGCTCTTCATCACAATCATTCTCGATATTTCACTCTTGGGGCTTATAATCTAG	1
126	TGACCCCAAGCATTCTGGCCTGAACGATTCGAGTATGAACGGAAAATTGACTAGCCCTCA	1
127	TGCTGCTTCAGGATCCTCAAGGCCAGTCTCGATATCTTCGGCGCCTGAGGGGACGACGAG	11
128	CAAAGCAGAGGAACACAGCAAAACACATTCGAGAAGCTGGGAACACACTGAAGAAGTGGG	12
129	GCCAGGATAGGGAAGAAGCAGATTGATATCGAATTCAAAGCTTATTTAAAGGTTATATAT	1
130	GCCATCAGATCTCCCACATGAGGCATTTTCGATAGTCTACTAAACATGCCATGATTAAAT	6
131	GCAATTCCATTTGGATCCCCTGATTGAGTCGATGAAATGCCCAAGCTAAGGTAGGAGCTA	15
132	GGAGACAGGGTTACATCAGCCAGTAACATCGAGAAAGGATAGCTGGGTCTTCCCATGATG	3
133	TCTGGCTCTATCAAGCTCTATTTAATAGTCGAATTTACAGCTGGCTAACAGAGGCCCAGA	10
134	CCCGCGCTAGTAACTGAGCTTTCAGTCATCGATGTGAAAATCCTCAGTAAAATACTGTCA	5
135	TGCCCTGCATGTCCAAGGGAAGGAGCGGTCGAGGTTCGCAAACCTCAGTTTTTGACTTCT	6
136	GAGAAGGGGAAACACAATGTGTCTGTTATCGATGATTTCACGTTGGTGAAGTTGGTCAGA	20
137	GAGCTGGAGAAAGCCTTGAACTCTATCATCGACTCTATTGTTTTTCTTATTGTTTTCTTC	1
138	GTTGGAAGGAATCCAGGGTAAGGGATATTCGAGACCTAGATAGGTCCTCCTTTTACCATG	13
139	CAGCAAAGTTTTATTGTAAAATAAGAGATCGAGGATGAGGTAAAGGTCTCGGAGGATAAG	17
140	GGAGGGGCAACTGCTAAGTGTATGATTATCGATTCCAACTTTAATGACAAACACTGGTCC	7
141	GTTGGAAGGAATCCAGGGTAAGGGATATTCGATTGTTATG	13

	GAAGGGATTTATACTTGAAT	
142	GTGTGGTTTAGTGCAAGTTTTTCACCTCTCGAGGAGCTAAAAGCGAAGGCCGCGGGGAAG	1
143	GCCAAGAGGGGAAAGGACTCATGTTCTCTCGAGGTCTAGAATCTGAGACCTAAATGAATT	8
144	CAAAGCAGTCAAGGCCCAAAGACAACCCTCGAGTTTGGTTTGTCTTGAATAAACTGAGGT	19
145	CAAAGCAGTCAAGGCCCAAAGACAACCCTCGACACCTGTTCTTCACATGCACATCCAACC	19
146	AAGGGGAGCTCATTTAGTTCATAAGCGGTCGACCATCACCTCCAGGGAGATCCAGACAGC	6
147	GCCAGGATAGGGAAGAAGCAGATTGATATCGACCAGTATTTCCCAATTGGGGTTCATGGG	1
148	TTGTGGTGAGAACGATACAGGAGACAGCTCGATTCTAAGCTAAGCAATTTGGTTTTGTTT	6
149	CACATCCCTGTCTAGTCCTATCTGTTCATCGAAATATTTCATTAACATCCACACACACAC	22
150	TTAAAAATTCCCAAGATGGAAAAAGAGATCGATCCTTCGCCCTTCAAATGTCCACTTCGG	8
151	CACATCCCTGTCTAGTCCTATCTGTTCATCGAGAGATACCCTACTTGCTATCATCATGGG	22
152	AGGAGTTCACCAGGGAGAAAAGAAGAAATCGAGCCCGTCCTGGGAGAGCGTTGGGGGTCT	11
153	TGTTAGTAGAGACCATGTTAGGCTGGTCTCGAACTCCCAGCCTCAGGTAATCTGCTCTCC	5
154	GAACCTCACAAGCCTCAGCAAATTCCCATCGAGGAGCTAAAAGCGAAGGCCGCGGGGAAG	1
155	CGTCTCAATGGCTCCCAACTCTTTTGCCTCGAGCCTGGTTTGTGTGTTTTATCCAGAAGT	16
156	GAGACGCGGGAGAAAAGTAGGAAATAAATCGAGGAGAGAAAACAAGGTGTGAAAGATCCA	5
157	CCATCCCAAAGTGCCCCGTGCTGAAGGGTCGAGGATGAGGTAAAGGTCTCGGAGGATAAG	17
158	CGGAGGGTATAATAACTGCTGTTGTGTATCGAGGCACAGGTAATTTGCCCAAGGTTACAC	2
159	ACAGGAGGCTCCTCTAACACATCTCCTCTCGACTGTTCCGGTCTCATCACAGGGAGGGCA	1
160	GCGTGAGTGAAGACCTTGCTGTATAACCTCGAGGTATAACCGTCGGCAGAAGAAAAGGGT	16
161	GCATCTCCGTGAGAGGCATTTGCATAGCTCGAGTTCTCATTTAGCTTTCACTTATAAATG	8
162	GCCATCAGATCTCCCACATGAGGCATTTTCGAGCCTCCGTTCAAATTGATCATCATCAAA	6
163	AATTTTCTTCAAATGGTTCTGTCTTCAATCGAGCGCCCAACCTACACCAACCTCAATCGC	2

164	GTGTTGTGTGAATTTACTCTGATAATGCTCGACTTGAAAAC AAGCACTGCCTCACTGCAA	14
165	GAGTTTCACCAAGTTATCTAGGCTGGTCTCGAACTCCTGA GCTCAGGTGATTCACTTGCC	10
166	GCCATCAGATCTCCCACATGAGGCATTTTCGACTGGCCAG CTCCGGAAGTCAAAGTTGTA	6
167	CGGAGGGTATAATAACTGCTGTTGTGTATCGATTAACTTCT GCTCCAGCTCAGAGACAGC	2
168	GCCCCCTGCTCAACGGCGCGCAGTCCCATCGACCACATGT TTACATTTTGAAGACATTTG	1
169	GGTTGGAGGATCACCTGAGCCCGAGAGGTCGAGGCTGGA GACATGAATACCTATTTGGAA	7
170	CAAAGCAGAGGAACACAGCAAAACACATTCGAGTCTGGG CTCCTTCTTCTGTTCCCCCGC	12
171	GCCGTCTGGATCTCCCTGGAGGTGATGGTCGATTCATATG AATGCTGTGGTATTATAGGT	6
172	GTTGAAACACCATTGAAATAAATGTTATTCGATGACTGAA AGCTCAGTTACTAGCGCGGG	5
173	GGGTCTCCTGCTCACCTTGTTGTCTAAGTCGAGCGCATGGT GCAGGAGGCGGAGAAGTAC	6
174	AAAGAGACACTTCTGATCCCCGCAAACATCGACATCAACT AATCTTGCCTTTGTGAGTTA	17
175	CACTCCATGGTCTCTCCCTCATCCCTAATCGAGTTGGCAGG TATAAAACACCTAGAAACT	14
176	TGACCCCAAGCATTCTGGCCTGAACGATTCGAGGTAACTC CTATCTAATGGGTTTTTCTT	1
177	GGCAGAGGGTTTGGCTACAAAAGGACCATCGATAAACAG GAGACATGACTGAGATGACAA	20
178	GCAGGGACACTTTTCAAGAGTTCTGTGTTCGATCATAACTC ACTGTGGCCTTGATCTTCC	5
179	GTTGTCTTACTCCTGAAGGATGCTGCAGTCGAATGTGATA ACTATGAAGGGAGAGATTTT	4
180	TGATGGTTTAGAATGCAGCTACCAATTATCGAGGATGAGG TAAAGGTCTCGGAGGATAAG	17
181	GAGAGGCCGTTCTAAAAGCACATTTGTATCGAGTGGCTGC TGCCTGCAGCTAAGTATTTT	16
182	TCCTAGATAAATAGCTTAAATTTTAGGATCGAGTATGAAC GGAAAATTGACTAGCCCTCA	1
183	CCGGGGGCTCATACTACTGCAAATGCAATCGATCATCAGT TGTATCCCTTGTGCATAGCA	6
184	GGAAGCCACTGAAGAAGCTAAGGAAAGTTCGAGGATGAG GTAAAGGTCTCGGAGGATAAG	17
185	AGCAAGGAACATAATTATGGCTGTGCTTTCGATTTCCCAC AAATAAATCCAGTAATCTTG	1
186	TGCAAAGACTGACTGACAGAAACAGATTTCGAGGACATTT	12

	TCTGAAAACCACTCTTCTCT	
187	GTTCCTAAGACCTTTCTTTCCACAGATCTCGATTAAATTTG ATACCCCTTCATGCTAAAA	6
188	GACTCTGATGCTGGATGAACTCCCACCCTCGATGTGATAC GTTATATCAACAGAATGAAG	11
189	AGGTTTTTGTATCTCTGTTCTAGGGACATCGACCAACAGA ACTATGCAGAGTTTGGCTGG	20
190	AAAGAGACACTTCTGATCCCCGCAAACATCGACCTAGGTT GTCATGTTTGTACCACACAG	17
191	GGAGACAGGGTTACATCAGCCAGTAACATCGAGTCTACAC ACTGGCTTGTGAACATGTTG	3
192	GATGATTCCGTGCAGTCATTTAAACAGTTCGATTCTGGAA GACAAAACAAAGGATCAACC	2
193	CACTTCGCTGTCTACCATGTACCATGTATCGATGTCTCAGG TAATTTATTTTTACAGTAG	6
194	AATTTTTTTTATTCTTAGAAGATGAATGTCGAGTCACTAAG CAAAGACAAGACAGGGTTA	3
195	AAACTAGAGGGATCTACCAGAGGAGGTGTCGAGAAACAC AGTGAGGAACTGATCTGTTTT	1
196	CAAGGAACATTGGTGATTTCCTTACCAATCGAAATATCCA TATTGCTTTCACGCCATTGT	12
197	AATTTTCTCCCAGAGGATGGGGAACCAATCGAGCTATGCA AATGCCTCTCACGGAGATGC	8
198	AAAATGATCGGGATATAAATCCAGGCATTCGAGCTTGTAA TCCAGCACTTTGGGAGACTG	X
199	ACTCCCTGCTACATGGCGCCCAGTCCCATCGACCACTCTA GATGTGTGACCTCAACACAA	5
200	GCCGTCTGGATCTCCCTGGAGGTGATGGTCGAACTCCAGG TCCCTAGAGATTTCTCCCCT	6
201	CAAAGCAGTCAAGGCCCAAAGACAACCCTCGAAAGTCAC AAGAAGCACCGTCGCTCTCGG	19
202	GCCATCAGATCTCCCACATGAGGCATTTTCGATGGCTCAG ATCCTGAGATCCAAGGAACA	6
203	ATAGATGCTCAGAAAGATTCAATTGAACTCGATGAGATGC CGGTGTCGGGGTGGACTTGC	6
204	TCTGGGCCTCTGTTAGCCAGCTGTAAATTCGAGAGAGGTT ACGTTACTTGCTCAACGTCA	10
205	ACAGGAGGCTCCTCTAACACATCTCCTCTCGAAAGAACAA AGCCCAAATTGTTTACCACC	1
206	ATACAAGTGGCTGGACAGCGAGAGGACGTCGAGCCCAGT GACACCATTGAGAATGTCAAA	19
207	CCCAGTCACGTACCCTCTGCTTGCTCAATCGATCCAATTAA AATAACATACATTATAGAC	4
208	CGGAGGGTATAATAACTGCTGTTGTGTATCGAAGTGCAGC AAAGAGGTAATTTCTGTCAA	2

209	TCACACTGCTCATAGCGTTTGTTTATTCTCGAAGTAGAGTATTGCTCTCTGCACTTTGTT	11
210	GCCAGGATAGGGAAGAAGCAGATTGATATCGAGGACAGTAGGCTTTCCCAGAGAGAGTCT	1
211	TGACCCCAAGCATTCTGGCCTGAACGATTCGAATCTTCCTTGCATCTCAAGGATAAGTCC	1
212	CAAAGCAGTCAAGGCCCAAAGACAACCCTCGAGGGGTTTCAAACGCCACCAAGGAGCCCA	19
213	CGGATTCTGGTTACAGAGAGGGATGAGATCGAGCTGGATATCAAGGAGGCAAAGAAGGAG	1
214	ATGAGGCTGTGGAAGAGCAAAATGAGTTTCGATTAATGGCCTGCAATTGTCATTGTTGCC	14
215	GGCACGTAGATGACTTGAGCTCAGGAGTTCGAGACCAAACAGCTCCTCCTAGTTGTCATT	2
216	CAAAGCAGAGGAACACAGCAAAACACATTCGAAAGAAAAAAGAAAAAAAAAAGGCTCAAGG	12
217	TGACCCCAAGCATTCTGGCCTGAACGATTCGAAAAGTAAAATAAAAACTGTGCCACTGCT	1
218	CTCCGGGAATCCAGCCTCAGTAAAATATTCGATTTTTTAACAGCTAAAAAGAATTTTTCT	19
219	GGAGACAGGGTTACATCAGCCAGTAACATCGATGTTCTCAGAGCAAAAGGAAAGTCGTCA	3
220	ACCACACCCTGGTCCTGGTAGTTAAAGATCGACCCTCCAAGGAGTTCACTGTTATTTGGA	X
221	GACCATAATACCCAAATATCCACTACAATCGAGAGTGACAGGGAGAATCAAAGGGACAGT	6
222	GAGAAGGGGAAACACAATGTGTCTGTTATCGAGCTCTGAATTTCTTTTTCCTACTAGTTT	20
223	AGGGCTTACCATGGTTCCCAGGCTGGTCTCGAACTCCAAACCTCAGATGAACCACCCACC	7
224	TCTGATTTCCGAGTTTTCCCTTCATCTCTCGAAAAATACCAAATATATGGAAATCAAACA	8
225	AAACTAGAGGGATCTACCAGAGGAGGTGTCGATTTGTATATATCTAAATTGGAAAAATGT	1
226	TGACCCCAAGCATTCTGGCCTGAACGATTCGATGATGCAGTTGCTTTTGAAACTCTTTAA	1
227	CCTGAAGGAGCTGAATGAGCAATTCCAATCGACCACCTGATCTCCCCCTTTCAACCCATC	19
228	GCCGTCTGGATCTCCCTGGAGGTGATGGTCGAGATTAGGAAATATCCAAAACCCAGAAAT	6
229	GTTGGAAGGAATCCAGGGTAAGGGATATTCGAATTTCCAAGTGAGTTATTACAGCTGTCC	13
230	CAATTTAGGGCTTCAGCTTCCTTTTCCTTCGAACCTCTCAGCTTGCTCCTTCCTATTCTG	19
231	TTACCAAGCCCGATGTTCTCCACGTGACTCGAGGACAGGA	3

	ACTAAATTATATGCAGTATT	
232	TGACCCCAAGCATTCTGGCCTGAACGATTCGAAATCAGGACATACAGATTGATACAATAC	1
233	GACACACAGGAAGTAGCCATGAGAAATATCGAGAAATTTGTCTTTTTTTTTTTTGACAGG	6
234	AGCCTAAAACGCAGGGAAGGTTCTTTTATCGAAAGGTTGATATATAACTAGAAAGAAGGA	6
235	GACTCTGATGCTGGATGAACTCCCACCCTCGATTTTATCTAAATCTGCTTGGCTGTGATG	11
236	ACGCTGAGGAGGAAGATTCGGGCTGGATTCGATGTATCTCCTGTACCTAGCACGGGGCTA	19
237	GTCCCAAGTGGCATGAGAGGTAGACTCATCGACATCACCAGGGGCACATGGACACCCTAG	1

表3.b3

	探針位置			
編號	**開始1**	**結束1**	**開始2**	**結束2**
119	44708521	44708550	44789489	44789518
120	49705558	49705587	49902221	49902250
121	156960825	156960854	156997453	156997482
122	53482719	53482748	53547736	53547765
123	54362865	54362894	54480875	54480904
124	203182882	203182911	203223851	203223880
125	222313333	222313362	222443124	222443153
126	121248863	121248892	121342022	121342051
127	62592661	62592690	62832566	62832595
128	54362865	54362894	54558160	54558189
129	20049003	20049032	20185384	20185413
130	31446122	31446151	31623674	31623703
131	50136054	50136083	50246568	50246597
132	55543281	55543310	55618875	55618904
133	30369804	30369833	30440566	30440595
134	75258050	75258079	75336769	75336798
135	33315645	33315674	33466449	33466478
136	23546783	23546812	23625970	23625999
137	153390498	153390527	153513975	153514004
138	52856865	52856894	52883409	52883438
139	7668422	7668451	7929730	7929759
140	50295228	50295257	50544404	50544433
141	52856865	52856894	52892348	52892377
142	27610670	27610699	27649540	27649569

143	22682789	22682818	22815487	22815516
144	11345773	11345802	11532254	11532283
145	11345773	11345802	11460173	11460202
146	26251915	26251944	26451301	26451330
147	19972753	19972782	20185384	20185413
148	88146574	88146603	88196957	88196986
149	42372893	42372922	42580439	42580468
150	64551145	64551174	64578200	64578229
151	42405469	42405498	42580439	42580468
152	114246668	114246697	114439741	114439770
153	76793350	76793379	76903925	76903954
154	27649540	27649569	27841044	27841073
155	22515860	22515889	22570487	22570516
156	53482719	53482748	53554766	53554795
157	7895326	7895355	7929730	7929759
158	47530515	47530544	47595214	47595243
159	36461527	36461556	36579206	36579235
160	86372876	86372905	86513167	86513196
161	53298883	53298912	53523723	53523752
162	31588790	31588819	31623674	31623703
163	219146704	219146733	219271449	219271478
164	96122095	96122124	96266461	96266490
165	73661600	73661629	73777776	73777805
166	31623674	31623703	31693389	31693418
167	47530515	47530544	47666118	47666147
168	191732098	191732127	191869198	191869227
169	104953071	104953100	105015560	105015589
170	54173793	54173822	54362865	54362894
171	27864129	27864158	28014485	28014514
172	75239534	75239563	75336769	75336798
173	31817303	31817332	31880997	31881026
174	7811364	7811393	7931195	7931224
175	24307630	24307659	24511835	24511864
176	121342022	121342051	121413900	121413929
177	1605044	1605073	1636523	1636552
178	100904230	100904259	100954391	100954420
179	145150602	145150631	145295264	145295293
180	7869107	7869136	7929730	7929759
181	85802243	85802272	85933139	85933168
182	121052781	121052810	121248863	121248892

183	106106015	106106044	106244730	106244759
184	7861817	7861846	7929730	7929759
185	121293376	121293405	121413867	121413896
186	49960827	49960856	50107333	50107362
187	32178824	32178853	32282605	32282634
188	6164442	6164471	6402028	6402057
189	181243	181272	305426	305455
190	7931195	7931224	7946534	7946563
191	55543281	55543310	55612205	55612234
192	8576781	8576810	8646352	8646381
193	32937081	32937110	33074743	33074772
194	187579608	187579637	187726558	187726587
195	39659036	39659065	39769502	39769531
196	55953310	55953339	56112357	56112386
197	53464498	53464527	53523723	53523752
198	72213377	72213406	72345933	72345962
199	60437027	60437056	60530626	60530655
200	27864129	27864158	27892396	27892425
201	11345773	11345802	11420842	11420871
202	31623674	31623703	31658617	31658646
203	27836543	27836572	27893601	27893630
204	30369804	30369833	30437456	30437485
205	36421195	36421224	36579206	36579235
206	18335603	18335632	18573353	18573382
207	137478558	137478587	137647187	137647216
208	47530515	47530544	47559512	47559541
209	128362006	128362035	128529465	128529494
210	20161775	20161804	20185384	20185413
211	121342022	121342051	121438842	121438871
212	11261903	11261932	11345773	11345802
213	159779098	159779127	159866578	159866607
214	87618182	87618211	87846454	87846483
215	215344457	215344486	215454611	215454640
216	54362865	54362894	54487090	54487119
217	121342022	121342051	121465920	121465949
218	14088693	14088722	14139536	14139565
219	55486661	55486690	55543281	55543310
220	133584343	133584372	133717418	133717447
221	41541510	41541539	41645739	41645768
222	23546783	23546812	23581109	23581138

223	6247841	6247870	6305165	6305194
224	85464646	85464675	85620983	85621012
225	39659036	39659065	39898072	39898101
226	121080944	121080973	121342022	121342051
227	50383674	50383703	50507416	50507445
228	27728786	27728815	27864129	27864158
229	52856865	52856894	53037036	53037065
230	55648717	55648746	55778432	55778461
231	107833995	107834024	107853779	107853808
232	121302599	121302628	121342022	121342051
233	33032721	33032750	33183466	33183495
234	108163026	108163055	108359269	108359298
235	6268416	6268445	6402028	6402057
236	38361518	38361547	38534534	38534563
237	203182882	203182911	203223884	203223913

表3.b4

	4 kb序列位置				
編號	**Chr**	**開始1**	**結束1**	**開始2**	**結束2**
119	5	44708521	44712520	44785519	44789518
120	19	49705558	49709557	49902221	49906220
121	7	156960825	156964824	156997453	157001452
122	5	53482719	53486718	53547736	53551735
123	12	54358895	54362894	54476905	54480904
124	1	203178912	203182911	203219881	203223880
125	1	222313333	222317332	222439154	222443153
126	1	121248863	121252862	121338052	121342051
127	11	62592661	62596660	62832566	62836565
128	12	54358895	54362894	54554190	54558189
129	1	20049003	20053002	20181414	20185413
130	6	31446122	31450121	31619704	31623703
131	15	50132084	50136083	50246568	50250567
132	3	55539311	55543310	55614905	55618904
133	10	30369804	30373803	30436596	30440595
134	5	75258050	75262049	75332799	75336798
135	6	33311675	33315674	33462479	33466478
136	20	23542813	23546812	23622000	23625999
137	1	153390498	153394497	153513975	153517974
138	13	52856865	52860864	52883409	52887408
139	17	7664452	7668451	7929730	7933729

140	7	50291258	50295257	50544404	50548403
141	13	52856865	52860864	52892348	52896347
142	1	27610670	27614669	27649540	27653539
143	8	22678819	22682818	22815487	22819486
144	19	11341803	11345802	11528284	11532283
145	19	11341803	11345802	11460173	11464172
146	6	26251915	26255914	26447331	26451330
147	1	19972753	19976752	20181414	20185413
148	6	88146574	88150573	88192987	88196986
149	22	42372893	42376892	42576469	42580468
150	8	64551145	64555144	64578200	64582199
151	22	42405469	42409468	42576469	42580468
152	11	114242698	114246697	114439741	114443740
153	5	76793350	76797349	76899955	76903954
154	1	27649540	27653539	27837074	27841073
155	16	22511890	22515889	22566517	22570516
156	5	53482719	53486718	53554766	53558765
157	17	7891356	7895355	7929730	7933729
158	2	47526545	47530544	47595214	47599213
159	1	36461527	36465526	36575236	36579235
160	16	86372876	86376875	86513167	86517166
161	8	53298883	53302882	53519753	53523752
162	6	31588790	31592789	31619704	31623703
163	2	219142734	219146733	219271449	219275448
164	14	96122095	96126094	96262491	96266490
165	10	73661600	73665599	73777776	73781775
166	6	31619704	31623703	31693389	31697388
167	2	47526545	47530544	47666118	47670117
168	1	191728128	191732127	191869198	191873197
169	7	104953071	104957070	105015560	105019559
170	12	54173793	54177792	54358895	54362894
171	6	27860159	27864158	28014485	28018484
172	5	75235564	75239563	75332799	75336798
173	6	31817303	31821302	31877027	31881026
174	17	7811364	7815363	7927225	7931224
175	14	24307630	24311629	24511835	24515834
176	1	121338052	121342051	121413900	121417899
177	20	1601074	1605073	1636523	1640522
178	5	100900260	100904259	100950421	100954420
179	4	145146632	145150631	145295264	145299263

180	17	7865137	7869136	7929730	7933729
181	16	85802243	85806242	85933139	85937138
182	1	121052781	121056780	121248863	121252862
183	6	106106015	106110014	106244730	106248729
184	17	7861817	7865816	7929730	7933729
185	1	121289406	121293405	121409897	121413896
186	12	49956857	49960856	50103363	50107362
187	6	32178824	32182823	32282605	32286604
188	11	6164442	6168441	6398058	6402057
189	20	177273	181272	305426	309425
190	17	7927225	7931224	7942564	7946563
191	3	55539311	55543310	55612205	55616204
192	2	8572811	8576810	8642382	8646381
193	6	32933111	32937110	33070773	33074772
194	3	187575638	187579637	187726558	187730557
195	1	39655066	39659065	39769502	39773501
196	12	55953310	55957309	56112357	56116356
197	8	53460528	53464527	53519753	53523752
198	X	72209407	72213406	72341963	72345962
199	5	60437027	60441026	60526656	60530655
200	6	27860159	27864158	27892396	27896395
201	19	11341803	11345802	11416872	11420871
202	6	31619704	31623703	31658617	31662616
203	6	27832573	27836572	27889631	27893630
204	10	30369804	30373803	30437456	30441455
205	1	36421195	36425194	36575236	36579235
206	19	18331633	18335632	18573353	18577352
207	4	137474588	137478587	137647187	137651186
208	2	47526545	47530544	47555542	47559541
209	11	128362006	128366005	128529465	128533464
210	1	20161775	20165774	20181414	20185413
211	1	121338052	121342051	121434872	121438871
212	19	11261903	11265902	11341803	11345802
213	1	159779098	159783097	159862608	159866607
214	14	87618182	87622181	87842484	87846483
215	2	215340487	215344486	215450641	215454640
216	12	54358895	54362894	54483120	54487119
217	1	121338052	121342051	121465920	121469919
218	19	14084723	14088722	14135566	14139565
219	3	55486661	55490660	55539311	55543310

220	X	133584343	133588342	133713448	133717447
221	6	41537540	41541539	41641769	41645768
222	20	23542813	23546812	23581109	23585108
223	7	6243871	6247870	6305165	6309164
224	8	85460676	85464675	85620983	85624982
225	1	39655066	39659065	39894102	39898101
226	1	121080944	121084943	121338052	121342051
227	19	50379704	50383703	50507416	50511415
228	6	27728786	27732785	27860159	27864158
229	13	52856865	52860864	53037036	53041035
230	19	55644747	55648746	55774462	55778461
231	3	107830025	107834024	107849809	107853808
232	1	121302599	121306598	121338052	121342051
233	6	33032721	33036720	33179496	33183495
234	6	108163026	108167025	108359269	108363268
235	11	6268416	6272415	6398058	6402057
236	19	38357548	38361547	38530564	38534563
237	1	203178912	203182911	203223884	203227883

表3.b5

編號	探針	引子ID
119	Hg38_5_44708519_44718992_44785151_44789520_RF	OBD183-2433
120	Hg38_19_49705556_49707798_49902219_49904931_RR	OBD183-2437
121	Hg38_7_156960823_156963130_156997451_157002320_RR	OBD183-2441
122	Hg38_5_53482717_53490284_53547734_53551656_RR	OBD183-2445
123	Hg38_12_54361590_54362896_54476649_54480906_FF	OBD183-2449
124	Hg38_1_203176687_203182913_203216286_203223882_FF	OBD183-2453
125	Hg38_1_222313331_222325139_222441386_222443155_RF	OBD183-2457
126	Hg38_1_121248861_121256803_121333642_121342053_RF	OBD183-2461
127	Hg38_11_62592659_62593709_62832564_62835574_RR	OBD183-2465
128	Hg38_12_54361590_54362896_54554738_54558191_FF	OBD183-2469
129	Hg38_1_20049001_20056499_20178914_20185415_RF	OBD183-2473
130	Hg38_6_31446120_31450854_31621846_31623705_RF	OBD183-2477
131	Hg38_15_50130724_50136085_50246566_50252745_FR	OBD183-2481
132	Hg38_3_55535014_55543312_55612203_55618906_FF	OBD183-2485
133	Hg38_10_30369802_30374526_30437454_30440597_RF	OBD183-2489
134	Hg38_5_75258048_75262845_75334371_75336800_RF	OBD183-2493
135	Hg38_6_33314273_33315676_33463232_33466480_FF	OBD183-2497
136	Hg38_20_23532159_23546814_23621720_23626001_FF	OBD183-2501
137	Hg38_1_153390496_153396692_153513973_153518338_RR	OBD183-2505
138	Hg38_13_52856863_52871994_52883407_52889776_RR	OBD183-2509

139	Hg38_17_7665587_7668453_7929728_7931226_FR	OBD183-2513
140	Hg38_7_50286505_50295259_50544402_50549189_FR	OBD183-2517
141	Hg38_13_52856863_52871994_52892346_52898772_RR	OBD183-2521
142	Hg38_1_27610668_27612988_27649538_27652259_RR	OBD183-2525
143	Hg38_8_22681793_22682820_22815485_22819827_FR	OBD183-2529
144	Hg38_19_11340579_11345804_11529780_11532285_FF	OBD183-2533
145	Hg38_19_11340579_11345804_11460171_11462756_FR	OBD183-2537
146	Hg38_6_26251913_26253832_26447582_26451332_RF	OBD183-2541
147	Hg38_1_19972751_19977472_20178914_20185415_RF	OBD183-2545
148	Hg38_6_88146572_88149296_88188008_88196988_RF	OBD183-2549
149	Hg38_22_42372891_42375481_42578934_42580470_RF	OBD183-2553
150	Hg38_8_64551143_64558219_64578198_64580985_RR	OBD183-2557
151	Hg38_22_42405467_42408113_42578934_42580470_RF	OBD183-2561
152	Hg38_11_114241978_114246699_114439739_114443191_FR	OBD183-2565
153	Hg38_5_76793348_76797693_76897248_76903956_RF	OBD183-2569
154	Hg38_1_27649538_27652259_27838007_27841075_RF	OBD183-2573
155	Hg38_16_22513299_22515891_22559024_22570518_FF	OBD183-2577
156	Hg38_5_53482717_53490284_53554764_53563025_RR	OBD183-2581
157	Hg38_17_7889503_7895357_7929728_7931226_FR	OBD183-2585
158	Hg38_2_47522457_47530546_47595212_47601970_FR	OBD183-2589
159	Hg38_1_36461525_36463186_36575866_36579237_RF	OBD183-2593
160	Hg38_16_86372874_86378933_86513165_86515439_RR	OBD183-2597
161	Hg38_8_53298881_53306504_53518003_53523754_RF	OBD183-2601
162	Hg38_6_31588788_31590397_31621846_31623705_RF	OBD183-2605
163	Hg38_2_219136508_219146735_219271447_219273060_FR	OBD183-2609
164	Hg38_14_96122093_96130378_96263508_96266492_RF	OBD183-2613
165	Hg38_10_73661598_73666900_73777774_73781187_RR	OBD183-2617
166	Hg38_6_31621846_31623705_31693387_31703142_FR	OBD183-2621
167	Hg38_2_47522457_47530546_47666116_47672220_FR	OBD183-2625
168	Hg38_1_191729725_191732129_191869196_191881753_FR	OBD183-2629
169	Hg38_7_104953069_104957259_105015558_105026847_RR	OBD183-2633
170	Hg38_12_54173791_54182056_54361590_54362896_RF	OBD183-2637
171	Hg38_6_27860135_27864160_28014483_28022084_FR	OBD183-2641
172	Hg38_5_75236091_75239565_75334371_75336800_FF	OBD183-2645
173	Hg38_6_31817301_31818773_31878016_31881028_RF	OBD183-2649
174	Hg38_17_7811362_7813705_7929728_7931226_RF	OBD183-2653
175	Hg38_14_24307628_24311588_24511833_24515792_RR	OBD183-2657
176	Hg38_1_121333642_121342053_121413898_121422150_FR	OBD183-2661
177	Hg38_20_1589686_1605075_1636521_1641313_FR	OBD183-2665
178	Hg38_5_100903133_100904261_100940255_100954422_FF	OBD183-2669
179	Hg38_4_145148297_145150633_145295262_145303638_FR	OBD183-2673
180	Hg38_17_7861815_7869138_7929728_7931226_FR	OBD183-2677

181	Hg38_16_85802241_85804577_85933137_85934694_RR	OBD183-2681
182	Hg38_1_121052779_121056014_121248861_121256803_RR	OBD183-2685
183	Hg38_6_106106013_106107198_106244728_106262141_RR	OBD183-2689
184	Hg38_17_7861815_7869138_7929728_7931226_RR	OBD183-2693
185	Hg38_1_121289281_121293407_121403378_121413898_FF	OBD183-2697
186	Hg38_12_49954074_49960858_50101385_50107364_FF	OBD183-2701
187	Hg38_6_32178822_32181952_32282603_32287434_RR	OBD183-2705
188	Hg38_11_6164440_6172634_6399479_6402059_RF	OBD183-2709
189	Hg38_20_177034_181274_305424_309823_FR	OBD183-2713
190	Hg38_17_7929728_7931226_7944762_7946565_FF	OBD183-2717
191	Hg38_3_55535014_55543312_55612203_55618906_FR	OBD183-2721
192	Hg38_2_8571790_8576812_8640383_8646383_FF	OBD183-2725
193	Hg38_6_32934293_32937112_33060957_33074774_FF	OBD183-2729
194	Hg38_3_187569317_187579639_187726556_187727893_FR	OBD183-2733
195	Hg38_1_39655161_39659067_39769500_39772730_FR	OBD183-2737
196	Hg38_12_55953308_55956138_56112355_56115503_RR	OBD183-2741
197	Hg38_8_53448228_53464529_53518003_53523754_FF	OBD183-2745
198	Hg38_X_72208498_72213408_72340340_72345964_FF	OBD183-2749
199	Hg38_5_60437025_60452736_60528868_60530657_RF	OBD183-2753
200	Hg38_6_27860135_27864160_27892394_27893632_FR	OBD183-2757
201	Hg38_19_11340579_11345804_11418077_11420873_FF	OBD183-2761
202	Hg38_6_31621846_31623705_31658615_31662274_FR	OBD183-2765
203	Hg38_6_27833806_27836574_27892394_27893632_FF	OBD183-2769
204	Hg38_10_30369802_30374526_30437454_30440597_RR	OBD183-2773
205	Hg38_1_36421193_36424970_36575866_36579237_RF	OBD183-2777
206	Hg38_19_18333551_18335634_18573351_18575967_FR	OBD183-2781
207	Hg38_4_137465162_137478589_137647185_137649115_FR	OBD183-2785
208	Hg38_2_47522457_47530546_47552565_47559543_FF	OBD183-2789
209	Hg38_11_128362004_128366353_128529463_128539984_RR	OBD183-2793
210	Hg38_1_20161773_20167840_20178914_20185415_RF	OBD183-2797
211	Hg38_1_121333642_121342053_121433689_121438873_FF	OBD183-2801
212	Hg38_19_11261901_11265731_11340579_11345804_RF	OBD183-2805
213	Hg38_1_159779096_159781322_159863199_159866609_RF	OBD183-2809
214	Hg38_14_87618180_87629304_87841922_87846485_RF	OBD183-2813
215	Hg38_2_215339857_215344488_215450480_215454642_FF	OBD183-2817
216	Hg38_12_54361590_54362896_54482792_54487121_FF	OBD183-2821
217	Hg38_1_121333642_121342053_121465918_121472610_FR	OBD183-2825
218	Hg38_19_14087074_14088724_14138048_14139567_FF	OBD183-2829
219	Hg38_3_55486659_55489812_55535014_55543312_RF	OBD183-2833
220	Hg38_X_133584341_133592788_133714472_133717449_RF	OBD183-2837
221	Hg38_6_41533263_41541541_41639865_41645770_FF	OBD183-2841
222	Hg38_20_23532159_23546814_23581107_23587842_FR	OBD183-2845

223	Hg38_7_6241289_6247872_6305163_6306814_FR	OBD183-2849
224	Hg38_8_85458958_85464677_85620981_85632239_FR	OBD183-2853
225	Hg38_1_39655161_39659067_39891844_39898103_FF	OBD183-2857
226	Hg38_1_121080942_121088798_121333642_121342053_RF	OBD183-2861
227	Hg38_19_50382303_50383705_50507414_50511937_FR	OBD183-2865
228	Hg38_6_27728784_27735060_27860135_27864160_RF	OBD183-2869
229	Hg38_13_52856863_52871994_53037034_53038116_RR	OBD183-2873
230	Hg38_19_55646678_55648748_55776223_55778463_FF	OBD183-2877
231	Hg38_3_107828110_107834026_107847362_107853810_FF	OBD183-2881
232	Hg38_1_121302597_121312167_121333642_121342053_RF	OBD183-2885
233	Hg38_6_33032719_33045940_33181270_33183497_RF	OBD183-2889
234	Hg38_6_108163024_108164102_108359267_108371469_RR	OBD183-2893
235	Hg38_11_6268414_6277518_6399479_6402059_RF	OBD183-2897
236	Hg38_19_38359207_38361549_38528221_38534565_FF	OBD183-2901
237	Hg38_1_203176687_203182913_203223882_203229092_FR	OBD183-2905

表3.b6

編號	引子序列	引子ID	引子序列
119	CCTTTACCCTAATATTTTGTGCC	OBD183-2435	GAATCATAAGCAAAAGCACTGGTG
120	CGTCACAGCTCTATTCGACGGTG	OBD183-2439	GGTGGCGATCCCTAAGAAGGTGTG
121	ATGTCCACACCCACTGCCACGAT	OBD183-2443	TGGGAGGGCTGAGAGGTGAGGAA
122	TTCTTCGCTTGACGGAGCCAGCAGTT	OBD183-2447	CTATCCTGGTCAAACTGGGACATACA
123	CCAGGTGAGGTTGGCAGCAAGCAT	OBD183-2451	GGGAATAGTTTAGGCTTTGGGAAATC
124	GATGGGAGACAGGCAGGTGAGAG	OBD183-2455	AGTGCGTCTCTGTGTCTGGGCTA
125	TCCATCTAAACATCACCGTGCTCCAG	OBD183-2459	GGGAACCATCTTTCTCTTCTGTCAT
126	GGTGGAAGCAGCAAGGGAAGACC	OBD183-2463	CCCAGTCAGGGAATGAGAGGGTA
127	CACCTCTTACTCCCCTCTCCCTT	OBD183-2467	CGGCAGGGAAGATGAGACCACAG
128	CCAGGTGAGGTTGGCAGCAAGCA	OBD183-2471	GCACAGGAGGAGTCTGAAAGCAG
129	GAACGCGGTAGCTTTCTTCAGCTAA	OBD183-2475	GGCATTCGAATAATGGTATTAAG
130	AAGAGTCCTTGCCACCTGGAAGCG	OBD183-2479	ACCAGGTATGGCCATCGGCGCTA
131	GCGTGGATACTTTCCTC	OBD183-2483	GGGAATGGTTGGTGGAG

	TTCCGAACT		GTTACAAGT
132	GGAGGAGTAAGGCTGAAATAACAGGG	OBD183-2487	TCCCACCACCATCATTACTGTCCTGA
133	GTGCTGAATGAGTGCGGAGTCCAGAA	OBD183-2491	GGTAACTGGCGAAGCACTCAATAAAC
134	TATTGTCCATTAGGCCCCACAAGGG	OBD183-2495	GTTAAGTACCCAGATATTCGCTGG
135	GGGTTCTGTATGATTACCGTCGT	OBD183-2499	CTCGGGGTCTATGGATGCCCGGTAG
136	CTGAAACGCAGACTGGTGGGTGC	OBD183-2503	CCCAGGAATGAGGACCACAGTCT
137	GAGCCATAGCCATCTGCTGGTTTGGT	OBD183-2507	GTGGTATCCTAAAACCTGACCTCAAC
138	GACCAAAGCACCTCTGAAGGACAAAG	OBD183-2511	GACCAAGAATAGTCCAACTCCAACAG
139	GTTCACCCCTCAGACACACAGGT	OBD183-2515	TGAAGTGGCATCTCTCTCCCGCC
140	GGTCCAGAGCATTTTGGTGGTGC	OBD183-2519	AAGGGCAGAGGCAGGACTTGGAC
141	ACCAAAGCACCTCTGAAGGACAAAGA	OBD183-2523	CAAAAGTGTCCCTTCCCTGCTCCCTA
142	GCCTGGTGTGAATCCTGCCTCCA	OBD183-2527	TCACCATCTCCTCAGGCACAAGG
143	ATTCCCCACCAGTATGAGGCGAAT	OBD183-2531	GTTGTCTGGTATATTAACGTGCC
144	GTGGCTCAGAACTTTACCTTTGCCTC	OBD183-2535	CATCACCTCTCTGGTATTCTTCCTGG
145	GTGGCTCAGAACTTTACCTTTGCCTC	OBD183-2539	GAGCCTACAGGATTTAGAGTGGGTTG
146	GCTTCAGATGAGGCTCCACCTTGTTA	OBD183-2543	CCATAGAATACAGCAGCACCCAGCAT
147	AGTAGGACTCGGGCAGGGAGGAT	OBD183-2547	TTCACAGACCAGCATCGCCCCAT
148	AGAGGTGCTGGAGTGTGGCTGTGATT	OBD183-2551	CCCCAACCCCATACAGTGTGATA
149	GCCAGCGAGACACTCACACAACT	OBD183-2555	GGGTGCCTCCAAATCGCATCTCC
150	GCACTAAGTCCTGCTAACATCAG	OBD183-2559	ATGTCTGACTTAGTTCTCCAGCCAGC
151	GCCAGCGAGACACTCACACAACT	OBD183-2563	CCTCCCTGCTTCGGCTTTTCCCA
152	GGAACTAAAGGGAAGCGTCCACG	OBD183-2567	ACCTGCCACACCTGAGACCCAGA
153	GCGTATAAAATTAGTAACGGCTAGA	OBD183-2571	GGACCGGGAGTCCGATAGACCTAC

154	CCAGCACACGGCACTTTCTTGGG	OBD183-2575	TCACCATCTCCTCAGGCACAAGG
155	CAGTTCGTGTTCTGACGGCAGGC	OBD183-2579	GGAGGCAGTCATTCTGGTGTTCC
156	TTCTTCGCTTGACGGAGCCAGCAGTT	OBD183-2583	GCGAACAGGACTGGAGAAAAGTATCA
157	CCTTGTGGGACCCCTATCTTCTC	OBD183-2587	TGAAGTGGCATCTCTCTCCCGCC
158	GTCACTACTGAGGACTGAAAATGCGG	OBD183-2591	CTGTTTGTTGAATGGACTCTGGACCC
159	CAGCCCACACACGAGATACACAC	OBD183-2595	CCAGGGCTGACTGACACCAAAGC
160	TCCCAAGGAACTATGGAGGCAGG	OBD183-2599	TGAGGAAGGAGGTGCCAACCGCA
161	TATGAGCCGGGTTCATCTTTGCGC	OBD183-2603	CCACTTCGGAGAAATGAGGCGCAA
162	ATAAATGTGTCCCAGGATAGGAGGC	OBD183-2607	GCTTGGGTCCCTGAACACTGTCATTC
163	CACCTGGAAAGAGGAAGTAGGGC	OBD183-2611	GGCAGGCTCAAAGCAGGCATTGG
164	GAGGAGAATGGACAGGCTGGGTC	OBD183-2615	CCCCTTGTCCAGAGTTTCCACAC
165	ACGGAGCGTATGTGAAAAGAAGTA	OBD183-2619	AAGCGGTACAAAATTGTACCGTA
166	ATAAATGTGTCCCAGGATAGGAGGC	OBD183-2623	AGGTGTTGTTGAGGGTGGGTAGGAGA
167	GTTATAGTACCGTCGTTTTAGGTGC	OBD183-2627	CATTAGTAACATTTTGGCACGGTGT
168	ACTTCTATGTTACACCCTCGGTC	OBD183-2631	TATTATGGGTGTGTATATCGCCGT
169	CAGTCTGGGCAACATAGCAGGAGTGT	OBD183-2635	TTAGATTACCACAACATCAGCCTGGG
170	CAGGTGAGGTTGGCAGCAAGCAT	OBD183-2639	TGTCCTCTGGCTCTGTTTGGGCG
171	TTACGGCTTTGGTGCTCTCGGACACA	OBD183-2643	ATACTTCCCTTTTCCCACCTCTGGAT
172	AAGGCAGGAGCCAACCCAGCACA	OBD183-2647	TTACAGGTTTGAGGTGCCCGTCG
173	ACTTCCCAGAGGCTCCTGAAAGC	OBD183-2651	GGCGTTCTTGGCTGACACCCTCT
174	CTCGTAGTAATGGAGTTTGTAACGGC	OBD183-2655	GAGATGGAGCAGAACAGGAAGTTGGG
175	TCTCCTGCTCCCCACTCCACAGT	OBD183-2659	TGCGAGGGCAAACACAGAGTGAG
176	GGTGGAAGCAGCAAGG	OBD183-2663	GCCTCTCCCTCATTCAAA

	GAAGACCAAT		AGAAAGAA
177	AAGCCGTGGGACTCGCAGGTGAA	OBD183-2667	CTGGTCGTCACCTCTTCCAACCT
178	CACCTCTCCTCCGTCCCACCATT	OBD183-2671	CACTTTGGGAGACTGAGAGCGGA
179	CTGAGACTGTGACCCTGAAGAATGAC	OBD183-2675	ATTGTTCTGAGCACTGAGGACACAGC
180	GCTCGTAACTCAGGTTGTGAATCTTC	OBD183-2679	AGATGAGCGGCAGGTTTGGCTGAGA
181	AGCAAGGTGAGGTGACAGGGAGC	OBD183-2683	CACACAGAGTAGGCAGGCGGATA
182	GACGCAGTCTCACACACTTTGGG	OBD183-2687	CCCAGTCAGGGAATGAGAGGGTATG
183	GAATCCATACCCACTATCCCCAACC	OBD183-2691	GGGTAAGAAAAGTGTGTCTCATTGAT
184	GGGTGTTGCGAGATGAGCCTGAT	OBD183-2695	TGAAGTGGCATCTCTCTCCCGCC
185	AGGCGACAGGGTTCGGGCTTTATTCT	OBD183-2699	GAAGAGGACTGTAGAAGGAGACAAGA
186	TGGCAGAGGGAGAGGGTCAGAGA	OBD183-2703	CAAGGAGATGCCCAGGCTAATGG
187	GTGTTAATCGTCCGGGGACCAATTT	OBD183-2707	TCTTCGTTAAGAAATATTTCCGTT
188	GAGTTACTCGTTACGGTGCTTCG	OBD183-2711	TCCACGACCGCCACAGGAAAGGTAC
189	GGACGCTGAATGTTGTCAAGTGTTTT	OBD183-2715	GGTTTTCCCCTGGAGTTGGACTGTTC
190	GTGGGCGTCTCGTAGTAATGGAG	OBD183-2719	GCTGACCTTGGGTGTGGTGTCCA
191	GGGAGTGGAGGAGTAAGGCTGAA	OBD183-2723	CTGCCACTTTGAGACTGCCCCTC
192	TACCGTGCTGTGTGACCTCAGAC	OBD183-2727	CCGTCTTCAGCCCTCAGTGTAGG
193	TCCCATTTCCCCATTCTGGTCCTAAG	OBD183-2731	GAGAGATTCTGTTATTAGTGCTTTGC
194	GGAGGTGACAACAGTATCATAAAGTG	OBD183-2735	AAACCCTACAAGTGTGACCGCTGCCA
195	GCGAGAACGGAGGCTAAGTTGAT	OBD183-2739	CCCCACGCCACCATAGATGTGCGC
196	CTGAATCCCTAGGTCATGGGTGTGG	OBD183-2743	TCCCTAACCGTAAAAACATGCAGG
197	TGTATACTCAAAGCCATCATAAGTG	OBD183-2747	CATAGTGCTAGTCCATTCCATAAC
198	GTATATACGATAAGTGATCAATTG	OBD183-2751	AGCCACACCTGCGCCCGGAACCC

199	AAATCCCCCAGGGCTAG CTCGCTT	OBD183-2755	TTGTGGTCGACACACATG ATAAGTT
200	GCTTTGGTGCTCTCGGA CACAGC	OBD183-2759	GCGGTGGTTTATGCGTCC TTAGC
201	CCCCTAGCCGTTTAATA GTATACA	OBD183-2763	TTTTTCGGCCTAGATAAG ATTCCAC
202	ATAAATGTGTCCCAGGA TAGGAGGC	OBD183-2767	TGAGGGCACTGCTCTTGG ATTCACCA
203	TCCCATTTAGGAGAGTG CCTGGC	OBD183-2771	GTGCTCTTTCACTCTCCTC CGCC
204	GGTAACTGGCGAAGCAC TCAATAAAC	OBD183-2775	ACCCAGCCATCTGCCTCT CAGTGAAT
205	CCACACACGAGATACAC ACACCC	OBD183-2779	TTGCTGGCAGAGACTCGC CTGGA
206	ACTCCCGCCTTCGTGCC CAAATA	OBD183-2783	CAGCCCTACTCACCCTCC TTGTC
207	TGAACCCACTGCTAATA CCAACCG	OBD183-2787	CAGTGCGGGGGTGGGTCG GCCGAT
208	TCAGTCTCCATACACCT TGGAGT	OBD183-2791	CCTTTGTCTAGGAGCTGT TGACATG
209	ACGAGCAAAGGTGAGA AAGCAAATGC	OBD183-2795	CCCCTCAGAACTCAGGAG AAATCAT
210	GCATGACTGGCAACGGC TCGCCCTG	OBD183-2799	GTAGTAGACGATGTGCGC AGTCGGA
211	AAGTAAATCCTCGGAGC TGAGACG	OBD183-2803	ATAAGCAGCCTCAACTGC CTTCCGA
212	GTTCCCGCCTTCCTCCAT CTTGC	OBD183-2807	AGGCTCCAGGCTCTGAGA TTTGG
213	TTGGAGGTGGAGGTCTG CCAGGT	OBD183-2811	TCCCTACCCTCCTATGTG CTCCT
214	TCAGCAGGGCAGGAAC ACAGTGG	OBD183-2815	CTGCCCTGGAAGCCTATG TGACT
215	CACCTGTTGTAATCCTG GCACTCTGG	OBD183-2819	GATACACAGACCTTGAGG CAACAATG
216	CCAGGTGAGGTTGGCAG CAAGCA	OBD183-2823	GGAGTGGGAAAGGAAGC GACAGA
217	AAACGTTACCCAGGCCA CTACTCAT	OBD183-2827	CAAAATTCCGGCTCTCGC ATGGGTT
218	ACTTAGTTTCTCACGTTG TCACA	OBD183-2831	TTTACAGTGGACGCTTCC GGAAAAC
219	GGGAGTGGAGGAGTAA GGCTGAA	OBD183-2835	CCTCCATTTCCCCAACCG CCTGA
220	TGTAGTCTTAGAACCCC CGTACGT	OBD183-2839	GAGTACCCCTAATGCCGG GTACAGT
221	GGTCACAGAAGGAAGC	OBD183-2843	CGCAGTCCGATGCTCTAT

	CTACTGC		CTCCC
222	AATATCCATCCCCCGGAACTTGCT	OBD183-2847	GAAAGTTGAGTTCCAGGACCTTGA
223	AGTTTTGTTGTTTCTTTTCTTCA	OBD183-2851	GCACTCTGTTGGGATTGCCAGGGA
224	GTCCGTGCCCAGTGCTTTGGCGTCG	OBD183-2855	CCTTTAAGGGCCCAAGCTGGGTC
225	GCAGACAGGCAGAAGGACAGAAC	OBD183-2859	GCTGGTGCTTGGGAAGGTAGGAG
226	GGTGGAAGCAGCAAGGGAAGACCAAT	OBD183-2863	CTCTGATAACATCTTCCCTCTACACG
227	AATCCTTCCTGCCCCTGTGCCAG	OBD183-2867	ATGTGGGAAGCCTGGCACTGATG
228	GCTTTGGTGCTCTCGGACACAGC	OBD183-2871	GCCTGAACGAGGGACCTATCAAC
229	GACCAAAGCACCTCTGAAGGACAAAG	OBD183-2875	GCCTTTTGTGCCATCCCTTTCCTAAG
230	TTACCGACTCATGACGGCGATTCTC	OBD183-2879	AGGAACCTATACCTATGCTGCTCTG
231	CTTATCGTCCGCCTTCATTCCTATGC	OBD183-2883	CCCAGACATCCTACCACCAGTAAAAC
232	GGTGGAAGCAGCAAGGGAAGACCAAT	OBD183-2887	GCATAATCTTGGACTTTCGTTTGCCA
233	GATTAGCGCTGGACCTTGTTGTCCA	OBD183-2891	CTTCCATGCTGGGTACCAATATGAA
234	CTAAACAGGTTCAGACATAGCCCCTA	OBD183-2895	TGGACAGGGCAGGCAATAACAGGGAT
235	CTATATTGTGTGATGTCAGCATGTC	OBD183-2899	GTGGTCCCGCCGTTTGCAAGTGT
236	TCTCACAAGGGGTAGGGTCACTCCA	OBD183-2903	GCATCATCGAGCCCCCTATTCAC
237	GATGGGAGACAGGCAGGTGAGAG	OBD183-2907	GGCTCCCCAGGTCTTTACTAACC

表3.b7

	qPCR引子集	
編號	探針	qPCR引子ID
4	Hg38_3_194096425_194098698_194154195_194165166_FF	OBD183-q969
12	Hg38_2_11008274_11010451_11159160_11162827_FR	OBD183-q909
16	Hg38_22_42578934_42580470_42682810_42685060_FR	OBD183-q981
21	Hg38_16_85802241_85804577_86052797_86054069_RR	OBD183-q829
23	Hg38_2_47522457_47530546_47595212_47601970_FF	OBD183-q865
24	Hg38_2_47354005_47355988_47522457_47530546_RF	OBD183-q905
33	Hg38_11_5689507_5691245_5788110_5795433_FF	OBD183-q809

37	Hg38_11_63903088_63909160_64170615_64174763_FF	OBD183-q997
42	Hg38_X_1815902_1820657_1830879_1832345_RR	OBD183-q993
44	Hg38_19_55104500_55106500_55175439_55177687_FR	OBD183-q861
48	Hg38_12_110242070_110251176_110379081_110380448_RR	OBD183-q881
143	Hg38_8_22681793_22682820_22815485_22819827_FR	OBD183-q805

表4.a

	qPCR引子集		
編號	序列	qPCR引子ID	qPCR反向序列
4	CGGAGAGAGGGACGCAGGAATGGAAGGG	OBD183-q971	CGAACCCACCACACACACACACCAGAC
12	GAAGCCCAGGGAGGTGTGTGAGGACTGC	OBD183-q911	CTCCTCCTGCCAGCCTCCTGAGC
16	CAGGTCCCCTCCCAGACACCAGC	OBD183-q983	AGAGGAGGCGAGACGAAGAGGTGGGAGC
21	GCACAGCAAGGTGAGGTGACAGGGAGC	OBD183-q831	TTAGGCTTCCTTGCGGGTGCTCCTCAGG
23	GGACTGGACACTTGAGAGGGCACTGGGC	OBD183-q867	AAGGCAGCAGCCAGAGCCCCAGC
24	GGACTGGACACTTGAGAGGGCACTGGGC	OBD183-q907	CACAGGTGCCCAGCCCAGTGGAC
33	CTCTGAAGGTCCAGTCACAGGGAACTTG	OBD183-q811	TCAAGGCTGCTCATACAACATCCATTCT
37	GTGGTGGGCAGTGGCGGCAACGACAAAG	OBD183-q999	GGAGCCTGGAAAACAGAGGATGCCCC
42	GGTGGACCTGACACGGATGCCTGCTGAC	OBD183-q995	CCTCGTGAATCCGCCTGCCTTGGC
44	CCTCTTTGGTGTGGGCTCCGACCTC	OBD183-q863	CCCTGGGCACTACTGACTCCTGGGCTGT
48	GGCTCACTGACCTCCCAGGCTCAAGCGA	OBD183-q883	CTCAGGGATGCGGTTGAATAGTCCGTCC
143	CAGGAAGCAGGCAACAGCCCGATGACAC	OBD183-q807	GTGAGTGTTCAGCAGGAAGCGGCAGCG

表4.b

	qPCR引子集	
編號	探針ID	探針序列
4	OBD183-p969	AGCTGCAGGAAAACCCCGTTCTTATTCGACATAT
12	OBD183-p909	TGTTTCGGCTTTAGTTCGATGGTGAAGACCCC
16	OBD183-p981	TCCCTGTCTAGTCCTATCTGTTCATCGAGCCAG
21	OBD183-p829	AGGCCGTTCTAAAAGCACATTTGTATCGAATAA
23	OBD183-p865	TGTGTATCGAGCAACCCCTGAGAATAAGGTGGC

24	OBD183-p905	ACTGCTGTTGTGTATCGAGGTGTAACTCACTAGC
33	OBD183-p809	TCCTGTCTCAAGAGCCGAGCTCCTCGAAGCCATT
37	OBD183-p997	GGGGCATCCTCTGTTTTCCAGGCTCC
42	OBD183-p993	AGGAGTTCGAGACAAGCCTGGCCAACATGGTG
44	OBD183-p861	TGTCAGCACTTGGAGCTATCCAATGGTCGAAGCG
48	OBD183-p881	TCACCATATTGCCAGGGCTGGTCTCGAACTCC
143	OBD183-p805	AGGACTCATGTTCTCTCGAGGTCTAGAATCTGAG

表4.c

	qPCR引子集	
編號	探針ID	探針序列
4	OBD183-p971	AGAGAACTGAAAGCATATGTCGAATAAGAACGGG
12	OBD183-p911	ACCATCGAACTAAAGCCGAAACACATTGAGCTCT
16	OBD183-p983	TCTGGCTCGATGAACAGATAGGACTAGACAGGG
21	OBD183-p831	TTATTCGATACAAATGTGCTTTTAGAACGGCCTC
23	OBD183-p867	TTGCTCGATACACAACAGCAGTTATTATACCC
24	OBD183-p907	TGCTAGTGAGTTACACCTCGATACACAACAGCAG
33	OBD183-p811	AATGGCTTCGAGGAGCTCGGCTCTTGAGACAG
37	OBD183-p999	AGCCTGGTCTCGAACCCCGTTGAGAGAGAG
42	OBD183-p995	ACCATGTTGGCCAGGCTTGTCTCGAACTCCTG
44	OBD183-p863	TCGCTTCGACCATTGGATAGCTCCAAGTGCTGAC
48	OBD183-p883	AGGAGTTCGAGACCAGCCCTGGCAATATGGTG
143	OBD183-p807	AGACCTCGAGAGAACATGAGTCCTTTCCCCTC

表4.d

	項目編號ID	項目描述
1	CL:3634	介白素-1介導之信號傳導路徑及TIR域
2	CL:13762	蛋白酶體
3	CL:3628	混合包括NF-κ B信號傳導路徑及類死亡域超家族
4	CL:13746	DVL及TNF受體超家族(TNFSF)成員之降解調節非典型NF-kB路徑
5	CL:3637	混合包括IkBA變體產生EDA-ID及死亡誘發之信號傳導複雜組裝
6	CL:141	混合包括磷脂醯環已六醇-4,5-二磷酸3-激酶活性及RET信號傳導
7	CL:327	混合包括PDGF/VEGF域及血管內皮生長因子-活化受體活性
8	CL:13763	蛋白酶體
9	CL:4137	介白素-6受體複合物及α-1B-糖蛋白/白細胞免疫球蛋白樣受體
10	CL:2190	混合包括TOR信號傳導及MAPK標靶/細胞核事件之調節介導之MAP激酶
11	CL:3430	PI3K p85/p55次單位及PI3激酶家族、p85結合域
12	CL:4488	抗原活化B細胞受體(BCR)，引起第二信使產生

13	CL:329	PDGF/VEGF域及血管內皮生長因子-活化受體活性
14	CL:13764	蛋白酶體次單位及蛋白酶體調節顆粒、鹼基次複合物
15	CL:4341	混合包括TNF結合其生理學受體及T細胞共刺激
16	CL:4444	混合包括T細胞受體複合物及抗原活化B細胞受體(BCR)，引起第二信使產生
17	CL:4343	混合包括TNF結合其生理學受體及細胞毒性T淋巴球蛋白4/CD28
18	CL:3906	Jak-STAT信號傳導路徑
19	CL:2526	混合包括蛋白激酶C活性及CREB3因子活化基因
20	CL:2562	組蛋白H3-T6磷酸化及鈣依賴性蛋白激酶C活性
21	CL:3422	肌醇磷酸酯代謝及肌醇六磷酸酯1-激酶活性
22	CL:3641	IkBA變體產生EDA-ID
23	CL:369	CSF1-CSF1R複合物及flt3配位體
24	CL:4506	磷酸化依賴性蛋白質結合及Bcr-Abl致癌蛋白低聚合
25	CL:331	VEGF結合至VEGFR，引起受體二聚
26	CL:13804	蛋白酶體次單位及26S蛋白酶體調節次單位6A
27	CL:2195	mTOR藉由LKB1-AMPK及RSK活化之能量依賴性調節
28	CL:2680	RasGTP酶-活化蛋白
29	CL:10672	混合包括絲胺酸蛋白酶、胰蛋白酶家族、組胺酸活性位點及絲胺酸型內肽酶抑制劑活性
30	CL:2402	混合包括MAPK標靶/MAP激酶介導之核事件及bZIP轉錄因子
31	CL:13765	蛋白酶體α型次單位及蛋白酶體調節顆粒
32	CL:2191	混合包括TOR信號傳導調節及SLC2A4 (GLUT4)轉位至血漿膜
33	CL:3710	IRAK4缺乏(TLR2/4)及介白素-1受體複合物
34	CL:4344	T細胞共刺激及自然殺手細胞耐受性誘導
35	CL:2583	致癌MAPK信號傳導及RasGEF N端模體
36	CL:5867	混合包括WNT靶基因及B細胞淋巴瘤9之抑制
37	CL:142	混合包括RET信號傳導及ERBB2調節細胞活動性
38	CL:7364	CXC趨化細胞素域及樹突狀細胞趨化性

表5.a1

	觀測到之基因計數	背景基因計數	強度	假發現率
1	8	60	1.43	5.69E-07
2	6	28	1.63	1.73E-06
3	9	116	1.19	1.73E-06
4	7	63	1.35	2.34E-06
5	5	22	1.66	5.46E-06
6	8	119	1.13	5.80E-06
7	5	26	1.58	8.17E-06

8	4	21	1.58	9.14E-05
9	3	5	2.08	9.14E-05
10	8	196	0.91	0.00011
11	3	6	2	0.00012
12	3	14	1.63	0.00089
13	3	15	1.6	0.001
14	3	16	1.57	0.0012
15	4	51	1.19	0.0017
16	4	56	1.15	0.0022
17	3	24	1.4	0.0029
18	5	122	0.91	0.0039
19	3	28	1.33	0.0041
20	2	5	1.9	0.0041
21	4	69	1.06	0.0041
22	2	5	1.9	0.0041
23	2	5	1.9	0.0041
24	2	5	1.9	0.0041
25	2	6	1.82	0.0048
26	2	7	1.76	0.006
27	3	36	1.22	0.0065
28	2	8	1.7	0.007

表5.a2

	使爾網路中之蛋白質(ID)匹配
1	9606.ENSP00000162749,9606.ENSP00000263464,9606.ENSP00000302569,9606.ENSP00000358983,9606.ENSP00000363089,9606.ENSP00000398698,9606.ENSP00000401399,9606.ENSP00000430684
2	9606.ENSP00000044462,9606.ENSP00000157812,9606.ENSP00000215071,9606.ENSP00000216455,9606.ENSP00000271308,9606.ENSP00000481029
3	9606.ENSP00000162749,9606.ENSP00000263464,9606.ENSP00000280357,9606.ENSP00000302569,9606.ENSP00000358983,9606.ENSP00000363089,9606.ENSP00000398698,9606.ENSP00000401399,9606.ENSP00000430684
4	9606.ENSP00000044462,9606.ENSP00000157812,9606.ENSP00000215071,9606.ENSP00000216455,9606.ENSP00000271308,9606.ENSP00000410481,9606.ENSP00000481029
5	9606.ENSP00000162749,9606.ENSP00000263464,9606.ENSP00000358983,9606.ENSP00000398698,9606.ENSP00000430684
6	9606.ENSP00000241453,9606.ENSP00000265404,9606.ENSP00000282397,9606.ENSP00000380432,9606.ENSP00000403459,9606.ENSP00000469613,9606.ENSP00000478570,9606.ENSP00000480043
7	9606.ENSP00000241453,9606.ENSP00000282397,9606.ENSP00000469613,9606.ENSP00000478570,9606.ENSP00000480043
8	9606.ENSP00000044462,9606.ENSP00000215071,9606.ENSP00000216455,9606.ENSP00000271308

9	9606.ENSP00000354952,9606.ENSP00000370698,9606.ENSP00000385675
10	9606.ENSP00000215832,9606.ENSP00000225577,9606.ENSP00000263025,9606.ENSP00000268184,9606.ENSP00000298552,9606.ENSP00000305355,9606.ENSP00000344220,9606.ENSP00000408695
11	9606.ENSP00000222254,9606.ENSP00000289153,9606.ENSP00000428056
12	9606.ENSP00000085219,9606.ENSP00000224337,9606.ENSP00000428924
13	9606.ENSP00000282397,9606.ENSP00000478570,9606.ENSP00000480043
14	9606.ENSP00000044462,9606.ENSP00000216455,9606.ENSP00000271308
15	9606.ENSP00000266557,9606.ENSP00000324890,9606.ENSP00000368450,9606.ENSP00000378856
16	9606.ENSP00000085219,9606.ENSP00000224337,9606.ENSP00000256447,9606.ENSP00000428924
17	9606.ENSP00000266557,9606.ENSP00000324890,9606.ENSP00000378856
18	9606.ENSP00000263851,9606.ENSP00000354394,9606.ENSP00000354952,9606.ENSP00000370698,9606.ENSP00000385675
19	9606.ENSP00000268184,9606.ENSP00000305355,9606.ENSP00000408695
20	9606.ENSP00000305355,9606.ENSP00000408695
21	9606.ENSP00000222254,9606.ENSP00000289153,9606.ENSP00000331103,9606.ENSP00000428056
22	9606.ENSP00000398698,9606.ENSP00000430684
23	9606.ENSP00000241453,9606.ENSP00000469613
24	9606.ENSP00000085219,9606.ENSP00000428924
25	9606.ENSP00000282397,9606.ENSP00000480043
26	9606.ENSP00000157812,9606.ENSP00000481029
27	9606.ENSP00000215832,9606.ENSP00000225577,9606.ENSP00000298552
28	9606.ENSP00000341905,9606.ENSP00000351015
29	9606.ENSP00000233735,9606.ENSP00000314151,9606.ENSP00000337733,9606.ENSP00000363001
30	9606.ENSP00000263025,9606.ENSP00000268184,9606.ENSP00000305355,9606.ENSP00000408695
31	9606.ENSP00000216455,9606.ENSP00000271308
32	9606.ENSP00000215832,9606.ENSP00000225577,9606.ENSP00000298552,9606.ENSP00000344220
33	9606.ENSP00000363089,9606.ENSP00000401399
34	9606.ENSP00000324890,9606.ENSP00000378856
35	9606.ENSP00000251849,9606.ENSP00000341905,9606.ENSP00000351015
36	9606.ENSP00000265165,9606.ENSP00000340347
37	9606.ENSP00000265404,9606.ENSP00000380432,9606.ENSP00000403459
38	9606.ENSP00000246657,9606.ENSP00000427279

表5.a3

	使爾網路中之蛋白質(標記)匹配
1	TNFRSF1A,BIRC3,CLEC7A,NFKB2,TLR4,TNF,MYD88,IKBKB
2	PSMA4,PSMC4,PSMD8,PSMA3,PSMA5,PSMC3
3	TNFRSF1A,BIRC3,IL18,CLEC7A,NFKB2,TLR4,TNF,MYD88,IKBKB
4	PSMA4,PSMC4,PSMD8,PSMA3,PSMA5,LTB,PSMC3
5	TNFRSF1A,BIRC3,NFKB2,TNF,IKBKB
6	FLT3,STAP1,FLT1,INS,GRB7,FLT3LG,VEGFA,VEGFC
7	FLT3,FLT1,FLT3LG,VEGFA,VEGFC
8	PSMA4,PSMD8,PSMA3,PSMA5
9	GAB2,IL6ST,IL6
10	MAPK1,RPS6KB1,MAPK3,CRTC3,TSC1,PRKCB,PDPK1,PRKCA
11	PIK3R2,PIK3CB,PIK3R1
12	CD22,BLNK,LYN
13	FLT1,VEGFA,VEGFC
14	PSMA4,PSMA3,PSMA5
15	CD27,CD28,CD83,LGALS9
16	CD22,BLNK,CD180,LYN
17	CD27,CD28,LGALS9
18	IL7,STAT1,GAB2,IL6ST,IL6
19	CRTC3,PRKCB,PRKCA
20	PRKCB,PRKCA
21	PIK3R2,PIK3CB,IP6K2,PIK3R1
22	TNF,IKBKB
23	FLT3,FLT3LG
24	CD22,LYN
25	FLT1,VEGFC
26	PSMC4,PSMC3
27	MAPK1,RPS6KB1,TSC1
28	RASAL3,NF1
29	REG1A,KLK3,KLK5,SMPDL3B
30	MAPK3,CRTC3,PRKCB,PRKCA
31	PSMA3,PSMA5
32	MAPK1,RPS6KB1,TSC1,PDPK1
33	TLR4,MYD88
34	CD28,LGALS9
35	RAF1,RASAL3,NF1
36	LEF1,TCF7
37	STAP1,INS,GRB7
38	CCR7,CXCL2

表5.a4

	得分	名稱	基因數目	匹配基因數目
1	11.61169272	阿巴西普	6	2
2	18.50139978	放線菌素D	349	10
3	14.76555719	阿非莫單抗	2	2
4	13.93486038	血管緊張素II	49	4
5	14.66046277	抗細菌劑	43	4
6	14.10196715	抗感染劑	94	5
7	13.09968284	消炎劑	57	4
8	18.09129783	抗體	94	6
9	21.01447232	抗風濕劑	66	6
10	13.60602326	抗病毒劑	52	4
11	14.64533985	阿托伐他汀	144	6
12	12.77358999	阿伐斯汀	4	2
13	18.93443533	硼替佐米	134	7
14	15.97337065	苔蘚蟲素1	34	4
15	30.08723672	促鈣三醇	194	11
16	27.02012675	鈣	2384	31
17	14.756574	卡鉑	142	6
18	12.1337483	羧胺三唑	5	2
19	26.20261877	CCL3	63	7
20	12.46406717	CCL4	64	4
21	14.32144141	塞內昔布	91	5
22	14.92591721	環格列酮	41	4
23	28.41653326	順鉑	489	15
24	31.20593759	薑黃素	180	11
25	58.65533446	地塞米松	717	27
26	27.41844557	小紅莓	362	13
27	29.62772409	依託泊苷	256	12
28	25.0122012	依維莫司	41	6
29	15.28349555	氟達拉濱	79	5
30	14.1742854	吉非替尼	93	5
31	17.21493721	吉西他濱	161	7
32	15.54354092	GSK2126458	12	3
33	14.59114466	GSK2636771	15	3
34	13.97744008	肝素	504	10
35	22.45767829	氫可體松	139	8
36	12.25952711	羥甲基戊二醯-CoA還	26	3

		原酶抑制劑		
37	21.14169926	Ifn-α	65	6
38	22.84919914	IL 10	53	6
39	17.93632651	IL-12	24	4
40	44.89671219	伊馬替尼	172	14
41	22.7760577	咪喹莫特	27	5
42	18.09129783	免疫球蛋白	94	6
43	24.33619615	免疫因子	117	8
44	27.86382672	免疫抑制劑	85	8
45	16.72981772	英利昔單抗	64	5
46	12.77679795	來那度胺	23	3
47	13.59964922	來那度胺，貝伐單抗	3	2
48	12.77679795	尼達尼布	23	3
49	29.84816928	太平洋紫杉醇	314	13
50	11.94768588	派立珠單抗	28	3
51	49.4150375	Pge2	418	20
52	15.33951451	普賴蘇穠	132	6
53	16.93094061	槲皮素	166	7
54	39.31262432	趨化因子	230	14
55	66.21801226	雷帕黴素	311	22
56	11.38755003	瑞戈非尼	32	3
57	18.00053022	白藜蘆醇	148	7
58	39.9655449	視黃酸	935	24
59	11.45781534	利妥昔單抗	77	4
60	22.93692352	羅格列酮	133	8
61	11.61169272	魯伯斯塔	6	2
62	21.00621408	辛伐他汀	159	8
63	22.27029358	斛角素	29	5
64	29.87089939	索拉非尼	71	8
65	23.5258192	甲苯磺酸索拉非尼	9	4
66	20.0039058	舒尼替尼	40	5
67	29.85870063	他克莫司	197	11
68	22.07482585	TGF β1	144	8
69	18.72668459	沙立度胺	87	6
70	25.45624607	曲妥珠單抗	68	7
71	11.83631766	曲格列酮	132	5
72	14.76555719	優立替尼	2	2

73	19.30137851	維格列汀	5	3
74	14.92665908	長春新鹼	139	6

表6.a1

	匹配基因(符號)
1	IL6、TNF
2	RPS6KB1、IL6、STAT1、BIRC3、MYC、CCL3、VEGFA、TNF、TLR4、MAPK1
3	IL6、TNF
4	IL6ST、VEGFA、MAPK3、MAPK1
5	FLT3、NF1、LTB、TNF
6	FLT3、IL6、MYC、LTB、TNF
7	NF1、STK11、TNF、TLR4
8	FLT3、CD28、IL6、CCR7、CD22、TNF
9	CD28、IL6、MYC、NF1、CD22、TNF
10	FLT3、IL6、MYC、TNF
11	IL6、IL18、DPP4、VEGFA、TNF、TLR4
12	VEGFC、VEGFA
13	FLT3、PSMC3、IKBKB、IL6、MYC、PSMA5、VEGFA
14	MYC、PRKCA、PRKCB、TNF
15	IL6、STAT1、MYC、FCER2、PRKCA、PRKCB、TNF、PIK3CB、TLR4、KLK3、CD83
16	CXCL2、FLT1、RPS6KB1、CD28、GRB7、CCR7、PIK3R1、BIRC3、IL18、NF1、FCER2、IL6ST、PRKCA、CD27、LGALS9、DPP4、VEGFC、RPS6、CCL3、DMBT1、PRKCB、STK11、REG1A、PDPK1、PIK3CB、IL7、LYN、BLNK、TLR4、MAPK3、MAPK1
17	PRKCA、STK11、VEGFA、RAF1、TNF、KLK3
18	VEGFA、KLK3
19	CXCL2、IL6、CCR7、IL18、CCL3、TNF、TLR4
20	CXCL2、CCR7、CCL3、IL7
21	PIK3R1、CCL3、VEGFA、PDPK1、MAPK1
22	IL6、STAT1、TNF、MAPK1
23	FLT1、RPS6KB1、LEF1、STAT1、BIRC3、IL18、MYC、PRKCA、PRKCB、VEGFA、RAF1、LYN、TLR4、MAPK3、MAPK1
24	IKBKB、IL6、STAT1、BIRC3、IL18、MYC、VEGFA、RAF1、TNF、MAPK3、MAPK1
25	CXCL2、RPS6KB1、IKBKB、CD28、IL6、STAT1、PIK3R1、BIRC3、H4-16、IL18、MYC、FCER2、IL6ST、VEGFC、CCL3、INS、STK11、VEGFA、RAF1、TNF、IL7、CLEC7A、TLR4、KLK3、CD83、MAPK3、MAPK1
26	FLT3、FLT1、STAT1、BIRC3、IL18、MYC、PRKCA、DPP4、VEGFA、RAF1、TNF、IL7、KLK3

27	FLT3、IKBKB、STAT1、PIK3R1、BIRC3、H4-16、MYC、PRKCA、CCL3、PIK3CB、KLK3、MAPK3
28	RPS6KB1、TSC1、PIK3R1、MYC、NF1、VEGFA
29	FLT3、CD28、STAT1、BIRC3、CD22
30	IKBKB、VEGFA、KLK3、MAPK3、MAPK1
31	BIRC3、MYC、PRKCA、PRKCB、VEGFA、RAF1、TNF
32	PIK3R2、PIK3R1、PIK3CB
33	PIK3R2、PIK3R1、PIK3CB
34	FLT1、IL6、DPP4、VEGFC、RPS6、CCL3、VEGFA、RAF1、IL7、MAPK3
35	FLT1、IL6、FCER2、CCL3、INS、TNF、IL7、KLK3
36	IL6、NF1、TLR4
37	IL6、STAT1、IL18、TAP1、IL6ST、TLR4
38	IL6、IL18、CCL3、TNF、IL7、TLR4
39	IL6、IL18、TNF、IL7
40	FLT3、FLT1、CCR7、STAT1、PIK3R1、MYC、PRKCA、RPS6、VEGFA、GAB2、RAF1、PDPK1、LYN、MAPK1
41	IL6、STAT1、IL18、TNF、TLR4
42	FLT3、CD28、IL6、CCR7、CD22、TNF
43	FLT3、TSC1、CD28、MYC、NF1、DPP4、CD22、TNF
44	FLT3、TSC1、CD28、MYC、NF1、DPP4、CD22、TNF
45	IL6、IL18、VEGFA、TNF、TLR4
46	VEGFC、VEGFA、TNF
47	VEGFC、VEGFA
48	FLT3、FLT1、LYN
49	FLT1、RPS6KB1、IKBKB、BIRC3、MYC、PRKCA、PRKCB、VEGFA、RAF1、TLR4、KLK3、MAPK3、MAPK1
50	STK11、TNF、TLR4
51	CXCL2、IKBKB、IL6、CCR7、STAT1、IL18、FCER2、IL6ST、PRKCA、VEGFC、CCL3、PRKCB、VEGFA、RAF1、TNF、IL7、TLR4、CD83、MAPK3、MAPK1
52	IL6、IL18、MYC、IL6ST、CCL3、TNF
53	PIK3R2、PIK3R1、RAF1、PIK3CB、LYN、MAPK3、MAPK1
54	CXCL2、IKBKB、IL6、CCR7、STAT1、IL18、MYD88、DPP4、CCL3、LTB、TNF、IL7、TLR4、MAPK3
55	FLT3、FLT1、RPS6KB1、TSC1、CD28、STAT1、PIK3R1、IL18、MYC、NF1、PRKCA、RPS6、PRKCB、INS、STK11、VEGFA、RAF1、PDPK1、PIK3CB、IL7、MAPK3、MAPK1
56	FLT1、VEGFA、RAF1
57	RPS6KB1、PRKCA、RPS6、VEGFA、RAF1、MAPK3、MAPK1
58	FLT3、RPS6KB1、IL6、STAT1、H4-16、IL18、MYC、NF1、FCER2、IL6ST、

	PRKCA、DPP4、VEGFC、RPS6、CCL3、PRKCB、MUC7、RAF1、TNF、IL7、LYN、TLR4、MAPK3、MAPK1
59	IL6、MYC、RAF1、TNF
60	RPS6KB1、IL6、STAT1、IL18、DPP4、INS、TNF、MAPK1
61	PRKCA、PRKCB
62	IL6、IL18、CCL3、VEGFA、LTB、TNF、TLR4、MAPK3
63	PIK3R2、PIK3R1、PRKCA、PRKCB、PIK3CB
64	FLT3、FLT1、BIRC3、NF1、VEGFA、RAF1、TNF、MAPK1
65	FLT1、VEGFC、VEGFA、RAF1
66	FLT3、FLT1、NF1、VEGFA、RAF1
67	RPS6KB1、CD28、CCR7、IL18、MYC、CCL3、INS、RAF1、TNF、IL7、TLR4
68	FLT3、FLT1、IL6、IL18、CCL3、TNF、TLR4、MAPK3
69	IL6、BIRC3、IL18、VEGFA、TNF、KLK3
70	PIK3R1、H4-16、VEGFC、CCL3、VEGFA、RAF1、MAPK1
71	IL6、INS、PDPK1、TNF、MAPK1
72	MAPK3、MAPK1
73	DPP4、INS、TNF
74	MYC、PRKCA、RAF1、TNF、KLK3、MAPK3

表6.a2

	陣列_標記物_類型	探針	基因
1	輕度	Hg38_8_30132536_30134220_30177058_30181551_RR	DCTN6
2	ICU	HG38_1_109341939_109348573_109359719_109366704_RR	PSMA5
3	輕度	Hg38_19_55694907_55697956_55776223_55778463_RF	NLRP9
4	ICU	HG38_6_46130577_46139255_46168740_46175484_FF	ENPP4
5	ICU	HG38_2_223382061_223395131_223446116_223450606_FF	AP1S3
6	ICU	HG38_5_76572657_76583168_76676513_76680170_RF	IQGAP2

表7a

	RP	FC:(1類/2類)	pfp	P值	CCS
1	74556.42789	-1.167913965	0.005042802	0.004887801	免疫
2	48297.45591	1.211313728	0.000190318	2.73916E-05	免疫
3	64771.6835	-1.167926895	0.00063478	0.000168739	免疫
4	46958.78429	1.208676033	0.000190318	5.85964E-05	免疫
5	36942.13688	1.210848175	0.001762385	0.001715734	免疫
6	42674.08273	1.220877422	0.000190318	2.56474E-05	免疫

表7b

	探針序列	探針位置
	60 mer	**Chr**
1	GGAGCGGGACTGACTGATTGCCAGCAATTCGAAAATGGGAAGAAAATTGCTTATTGTGTT	8
2	AGCTTTGAGCAGCTTTTATTTTTACATGTCGAACTCCTGACCTCAGGTAATCTTCCCACA	1
3	CAGAATAGGAAGGAGCAAGCTGAGAGGTTCGACCTGGACTCGCTGGTGAGCCGGCCGGGC	19
4	GTGTCTGCATCTATTTTTATTAAGCCTTTCGAACTCCTGACTTTGTGATTCGCAAAATAT	6
5	TTGATTGGGATGACATTAAATGTATAGGTCGAACTCCTGACCTACCTCAAGTGATCCATC	2
6	GTTAGACATAAAGACTAATGGGATAGAATCGAACTCCTGACTTCAGGAAATCTGCCCGTC	5

表7c

					4 kb序列位置		
	開始1	**結束1**	**開始2**	**結束2**	**Chr**	**開始1**	**結束1**
1	30132538	30132567	30177060	30177089	8	30132538	30136537
2	109341941	109341970	109359721	109359750	1	109341941	109345940
3	55694909	55694938	55778432	55778461	19	55694909	55698908
4	46139224	46139253	46175453	46175482	6	46135254	46139253
5	223395100	223395129	223450575	223450604	2	223391130	223395129
6	76572659	76572688	76680139	76680168	5	76572659	76576658

表7d

	開始2	**結束2**
1	30177060	30181059
2	109359721	109363720
3	55774462	55778461
4	46171483	46175482
5	223446605	223450604
6	76676169	76680168

表7e

	qPCR引子集	
	陣列_標記物_類型	探針
1	輕度	Hg38_8_30132536_30134220_30177058_30181551_RR
2	ICU	HG38_1_109341939_109348573_109359719_109366704_RR
3	輕度	Hg38_19_55694907_55697956_55776223_55778463_RF

4	ICU	HG38_6_46130577_46139255_46168740_46175484_FF
5	ICU	HG38_2_223382061_223395131_223446116_223450606_FF
6	ICU	HG38_5_76572657_76583168_76676513_76680170_RF

表7f

	qPCR引子集		
	qPCR引子ID	序列	qPCR引子ID
1	OBD183-q805	ATTTCAGGCTCGTGTTCAAGGGTCCAGT	OBD183-q807
2	OBD183-q481	CCCCTCCGTGGGACAGGAACAGTT	OBD183-q483
3	OBD183-q837	GACCTGAGGCGTGTCCGATGTGGG	OBD183-q839
4	OBD183-q685	AATCATCATCTCTGGAGCCTCTGAAAGC	OBD183-q687
5	OBD183-q617	CGCATTCTTTTGCCAACACCACATCATC	OBD183-q619
6	OBD183-q565	GCAGTAATCAAGACAGTGCTATGCTGGC	OBD183-q567

表7g

	qPCR引子集	
	qPCR反向序列	引子ID
1	GGATACAACAGCCAACTTCAAACACATT	OBD183-p805
2	GAGTCACCTTTCGTCTTTTCCATTTCCC	OBD183-p481
3	CCAGAGACACGGAGTGGAGTCAGTGGCG	OBD183-p837
4	CTCTGCTGGGTGTCATTCCTTTTCCCTC	OBD183-p685
5	CACTGACCCAGGAAAACCACCCTCATTC	OBD183-p617
6	CCTCTTGACCTCCAGCGAGACCACTCC	OBD183-p565

表7h

	qPCR引子集	
	探針序列	探針ID
1	AGCGGGACTGACTGATTGCCAGCAATTCGAAAAT	OBD183-p807
2	TACATGTCGAACTCCTGACCTCAGGTAATCTTCC	OBD183-p483
3	TAGGAAGGAGCAAGCTGAGAGGTTCGACCTGG	OBD183-p839
4	ATTAAGCCTTTCGAACTCCTGACTTTGTGATTCGC	OBD183-p687
5	TGGGATGACATTAAATGTATAGGTCGAACTCCTG	OBD183-p619
6	ATAGAATCGAACTCCTGACTTCAGGAAATCTGCCC	OBD183-p567

表7i

	qPCR引子集
	探針序列
1	ATTTTCGAATTGCTGGCAATCAGTCAGTCCCGC
2	AGATTACCTGAGGTCAGGAGTTCGACATGTAAA
3	TCCAGGTCGAACCTCTCAGCTTGCTCCTTCCT
4	TGCGAATCACAAAGTCAGGAGTTCGAAAGGCTTA

5	TCAGGAGTTCGACCTATACATTTAATGTCATCCC
6	TCCTGAAGTCAGGAGTTCGATTCTATCCCATTAG

表7j

	qPCR引子集
	修飾序列
1	/56-FAM/AGC GGG ACT /ZEN/GAC TGA TTG CCA GCA ATT CGA AAA T/3IABkFQ/
2	/56-FAM/TAC ATG TCG /ZEN/AAC TCC TGA CCT CAG GTA ATC TTC C/3IABkFQ/
3	/56-FAM/TAG GAA GGA /ZEN/GCA AGC TGA GAG GTT CGA CCT GG/3IABkFQ/
4	/56-FAM/ATT AAG CCT /ZEN/TTC GAA CTC CTG ACT TTG TGA TTC GC/3IABkFQ/
5	/56-FAM/TGG GAT GAC /ZEN/ATT AAA TGT ATA GGT CGA ACT CCT G/3IABkFQ/
6	/56-FAM/ATA GAA TCG /ZEN/AAC TCC TGA CTT CAG GAA ATC TGC CC/3IABkFQ/

表7k

	探針	基因	RP
1	Hg38_1_112145907_112153217_112262815_112272478_FF	WNT2B	6632.327399
2	Hg38_1_112145907_112153217_112262815_112272478_FR	WNT2B	6615.221985
3	Hg38_22_25290566_25299563_25482038_25486782_FR	LRP5L	28171.7163
4	Hg38_11_93191458_93197121_93228754_93237221_FR	MTNR1B	30854.43895
5	Hg38_12_8956666_8971971_9041253_9052225_RF	KLRG1	32830.14986
6	Hg38_17_27705007_27714184_27773460_27778067_RF	LGALS9	31710.89437
7	Hg38_17_27705007_27714184_27860380_27865714_RF	NOS2	32302.86692
8	Hg38_19_50837203_50840748_50961391_50964466_FR	KLK3	41082.56724
9	Hg38_1_27834284_27836433_28029814_28033207_FR	SMPDL3B	34252.74921
10	Hg38_10_101411213_101417434_101485766_101490138_RF	POLL	33830.59298
11	Hg38_11_93057516_93069988_93228754_93237221_RR	MTNR1B	38697.48465
12	Hg38_18_42444488_42452373_42488741_42500135_RR	PIK3C3	36961.50644
13	Hg38_1_99631771_99639876_99708395_99714403_FF	AGL	39107.43986
14	Hg38_19_34387270_34393741_34499918_34506554_FR	GPI	38265.62504
15	Hg38_3_196353836_196356776_196593741_196597691_FF	RNF168	38295.8272
16	Hg38_1_99659612_99670382_99708395_99714403_FF	AGL	38478.96973
17	Hg38_11_9685853_9690988_9710140_9716903_RF	SWAP70	39606.72308
18	Hg38_17_27705007_27714184_27875357_27879509_RF	NOS2	39888.90639
19	Hg38_5_76572657_76583168_76676513_76680170_RF	IQGAP2	42674.08273
20	Hg38_6_132703799_132711156_132757539_132761457_FF	VNN1	41891.67247
21	Hg38_4_154217720_154222054_154421614_154428471_FR	FGB	41672.67989
22	Hg38_15_98874707_98883774_99040149_99043892_FF	IGF1R	42502.98791
23	Hg38_22_25482038_25486782_25613025_25619501_RF	LRP5L	45257.16951
24	Hg38_11_93178112_93183061_93228754_93237221_FR	MTNR1B	40589.83763

25	Hg38_10_122677780_122685636_122702672_122705534_FF	DMBT1	47360.38753
26	Hg38_1_99533569_99538124_99618648_99629858_FR	AGL	45455.75237
27	Hg38_11_93198707_93202947_93228754_93237221_RR	MTNR1B	44085.15403
28	Hg38_17_27594551_27602944_27705007_27714184_FR	LGALS9	45673.11179
29	Hg38_18_42413424_42422256_42488741_42500135_RR	PIK3C3	40889.09224
30	Hg38_3_184235022_184240690_184480439_184482239_FR	EIF2B5	44523.82545
31	Hg38_11_9685853_9690988_9833988_9839719_RF	SWAP70	44637.16946
32	Hg38_3_184389484_184390857_184480439_184482239_FR	EIF2B5	46450.621
33	Hg38_17_27609054_27616846_27705007_27714184_RR	LGALS9	43991.22324
34	Hg38_7_29905017_29911792_30016613_30019069_FR	WIPF3	41863.49514
35	Hg38_8_5120591_5125403_5295149_5302540_FF	ANGPT2	46856.24945
36	Hg38_1_109341939_109348573_109359719_109366704_RR	PSMA5	48297.45591
37	Hg38_8_5115633_5120591_5295149_5302540_FF	ANGPT2	43978.91795
38	Hg38_11_9656772_9663043_9685853_9690988_FR	SWAP70	44994.92012
39	Hg38_2_223382061_223395131_223446116_223450606_FF	AP1S3	36942.13688
40	Hg38_22_34722666_34726389_34750116_34757594_RR	TOM1	35013.59465
41	Hg38_22_34696712_34700627_34750116_34757594_RR	TOM1	42265.79077
42	Hg38_11_9575436_9577203_9685853_9690988_FR	SWAP70	44448.90982
43	Hg38_3_196466940_196470869_196593741_196597691_FF	RNF168	46109.70739
44	Hg38_3_10166863_10171451_10289864_10293604_RF	IRAK2	46779.70177
45	Hg38_16_20282299_20286605_20445721_20457266_FR	UMOD	54241.62999
46	Hg38_8_47127019_47130852_47283075_47288879_FR	PRKDC	48044.37065
47	Hg38_6_46130577_46139255_46168740_46175484_FF	ENPP4	46958.78429
48	Hg38_1_241870739_241874965_242033568_242040771_FF	EXO1	47180.45513
49	Hg38_5_76400222_76402838_76572657_76583168_RR	IQGAP2	45337.39374
50	Hg38_15_34886920_34889054_34974237_34980574_FF	ACTC1	49743.84856

表8.a1

	FC:(1類/2類)	pfp	P值	CCS
1	1.432700804	0.005113164	0.005113164	免疫
2	1.432377731	0.00216811	0.002123472	免疫
3	1.261392393	0.00019327	8.52662E-05	免疫
4	1.24933454	0.000190318	6.00479E-05	心臟
5	1.248199493	0.000191193	8.21396E-05	免疫
6	1.248110436	0.000190318	4.07352E-05	免疫
7	1.244388651	0.000190318	6.08132E-05	免疫
8	1.239284032	0.000190318	2.48894E-05	免疫
9	1.238018648	0.000190318	6.60302E-05	免疫
10	1.237745489	0.000232634	0.000129254	免疫

11	1.232468734	0.000190585	6.79703E-05	心臟
12	1.230563488	0.000270694	0.000185233	免疫
13	1.228138328	0.000226279	0.000123122	免疫
14	1.227970267	0.000250933	0.000155726	免疫
15	1.227284759	0.000194259	8.66473E-05	免疫
16	1.227283877	0.000236458	0.00014024	免疫
17	1.226172597	0.000190318	1.7589E-05	免疫
18	1.223195987	0.000190318	6.32774E-05	免疫
19	1.220877422	0.000190318	2.56474E-05	免疫
20	1.220844426	0.000197577	9.24207E-05	免疫
21	1.220594126	0.000295776	0.000219223	免疫
22	1.219932467	0.000217426	0.000113829	免疫
23	1.219326086	0.000190318	3.14883E-05	免疫
24	1.218547015	0.00029559	0.000215607	心臟
25	1.218546484	0.000225914	0.000122259	免疫
26	1.217793578	0.000190585	7.27088E-05	免疫
27	1.217634455	0.000190318	5.58785E-05	心臟
28	1.214995239	0.000190318	2.61731E-05	免疫
29	1.214925448	0.000445143	0.000381491	免疫
30	1.21420253	0.000221256	0.000117135	免疫
31	1.213208971	0.000232634	0.000129317	免疫
32	1.212777042	0.000190318	6.55571E-05	免疫
33	1.212729895	0.000191193	8.04439E-05	免疫
34	1.212672171	0.000471617	0.000410584	免疫
35	1.212339076	0.000190585	7.8309E-05	免疫
36	1.211313728	0.000190318	2.73916E-05	免疫
37	1.210971319	0.000270694	0.000188689	免疫
38	1.210935714	0.000203616	0.000100216	免疫
39	1.210848175	0.001762385	0.001715734	免疫
40	1.210759976	0.003185687	0.003148208	免疫
41	1.210755417	0.000460206	0.000399296	免疫
42	1.210288615	0.000266947	0.000170375	免疫
43	1.209957577	0.000236458	0.000138509	免疫
44	1.209213182	0.000235024	0.000134793	免疫
45	1.209175245	0.000190318	2.47322E-05	免疫
46	1.20891203	0.000203616	0.00010061	免疫
47	1.208676033	0.000190318	5.85964E-05	免疫

48	1.208555322	0.000190318	6.62673E-05	免疫
49	1.207074623	0.000235024	0.000133546	免疫
50	1.204960402	0.000190585	7.84762E-05	心臟

表8.a2

	探針序列
	60 mer
1	AGGGGTCACTGTTGATTCTGGAGTGTTCTCGAGGTGACAGATTTTGTAGACACTTTATGG
2	AGGGGTCACTGTTGATTCTGGAGTGTTCTCGAAAGAGGGAGACCAATAGCAAAAGGAACA
3	ACTGAATATCTCTATCTATGAATAGAGTTCGATCTCCTGACCTCCATCATGTCCTCTCTT
4	TTAATTTTTTAATTACATTTAATCAGCATCGAACTCCTGACCTTGTAATCTGTCCACCTT
5	TTATCCAATTATAAGTCTATTGGCTCTTTCGAACTCCTGACCTCACGTAATTCTCCCACC
6	AAAAAAAAAAGGAAAAGAAAGAAGAAAGTCGATCTCCTGACCTAGTGATTGGCCCTCCTC
7	AATAAACTATGACTTTGTGAAGATTCAGTCGATCTCCTGACCTAGTGATTGGCCCTCCTC
8	TACGAGGAAATAGAATAAGATCTAGTATTCGAACTCCTGACCCTAGGTGATCCTCCTGCT
9	ATTTTTATTTTTTTGTTTGTTTTTGTTTTCGAACTCCTGACCTCAGGAGTTCCACCCACC
10	TTTTTCAGGGTGTGTTTCCATATAAAGATCGAACTCCTGACCTCAAGAAATCTACCTGCC
11	CTCAAAGACCCAAATATAGAAATACCATTCGAACTCCTGACCTTGTAATCTGTCCACCTT
12	GCATTAAAAAAAGATACCTTGTTCAGAATCGAACTCCTGACCTCACGTCAATTCATAAGT
13	CAGTCTTAAAAATCAATTCCACAAATCATCGAGACCAGCCTGACTGATATTGTGAAACCC
14	TGCTTTTGTGTCACAGGTTTTGACAACTTCGAACTCCTGACCGAAGCGATGATCCAGCCG
15	TATCATAGTCCAGATGAGATAATTTCCTTCGAACTCCTGACCTCAGGTAGTCCAACTGTC
16	ACAAAGCACTTGAACTTACATTAAGTCATCGAGACCAGCCTGACTGATATTGTGAAACCC
17	GGACCATTTCTGTAGCAGAAAGAGGAAGTCGATCTCCTGATCTCGTGATCTACCTTCCTT
18	TGTTTTTTATACTGCAAGACAGAGAGATTCGATCTCCTGACCTAGTGATTGGCCCTCCTC
19	GTTAGACATAAAGACTAATGGGATAGAATCGAACTCCTGACTTCAGGAA

	ATCTGCCCGTC
20	CATGTGTATTCAGAAAGAAGTATGTGAATCGAACTCCTGACCTCAAATA ATTCGCCCGCC
21	TAAGTGAACACGCAAGATAAAAATAGTATCGAACTCCTGACCTCAAAAA ATCCACCACCT
22	GGTGCTGAAAATAAAGATACCCTTTCTGTCGAACTCCTGACCTCAATTAA TCCACCCACC
23	GAGTAAGGAGTTTTTGTTGTCGTTGTTTTCGATCTCCTGACCTCCATCATG TCCTCTCTT
24	AACTAATAAACTTGATGCAGAAGGAATTTCGAACTCCTGACCTTGTAAT CTGTCCACCTT
25	AGTTCCTGCTATGTATAAAATGAAACTTTCGATCTCCTGTTCTCGTGATC CACCTGCCTC
26	ATACTAATTAATACGTAACCTACTAACATCGATCTCTTGACCTCATGGTC TCCCACCTCA
27	CCAAAAGCTTGCTTCATCCATTGATTCATCGAACTCCTGACCTTGTAATC TGTCCACCTT
28	AAAGGCAGAAGAAAGCCCTAGAAGAAGGTCGATCTCCTGACCTAGTGAT TGGCCCTCCTC
29	AGGAAACATACTATCAACATTATAGCTGTCGAACTCCTGACCTCACGTC AATTCATAAGT
30	CCTAGCAAGGCAATCTACTCTGTTAAAGTCGAACTCCTGACCTCTAGTGA TACACCTACC
31	TCTGAAACTGTGATGGTAGAGACAGATATCGATCTCCTGATCTCGTGATC TACCTTCCTT
32	GAAGTTATTGTCTTAGCCCATTGAAGCATCGAACTCCTGACCTCTAGTGA TACACCTACC
33	TATTGTCCCCATTTTACAGAAGAAGAAATCGATCTCCTGACCTAGTGATT GGCCCTCCTC
34	TCATGTACAAAAATTAACTCAAAATGAATCGAACTCCTGACCTCAGAAG ATTTGCCTGCC
35	TCACTCCCAAGCCATTGTGTTGTCTAAATCGAACTCCTGACCTCAACTGA TTTGTCCACC
36	AGCTTTGAGCAGCTTTTATTTTTACATGTCGAACTCCTGACCTCAGGTAA TCTTCCCACA
37	TTTCATACTTTTAATCTTACTAATGTTGTCGAACTCCTGACCTCAACTGAT TTGTCCACC
38	CGAACAGATATTAATTCAACAGCTGCAATCGATCTCCTGATCTCGTGATC TACCTTCCTT
39	TTGATTGGGATGACATTAAATGTATAGGTCGAACTCCTGACCTACCTCAA GTGATCCATC
40	CTTGATCAAGAGGGATTTAAACTGAAATTCGAGGAGTATCTTTGTGGCTT TCTCTGTATT
41	AGTCTGCCTCTTGGGAGTCATCCTGGGTTCGAGGAGTATCTTTGTGGCTT TCTCTGTATT

42	CAGTGCTTGGACAGCATTCTCATGTAGTTCGATCTCCTGATCTCGTGATC TACCTTCCTT
43	AACCCTGATTTTCTGATTTAACACTGATTCGAACTCCTGACCTCAGGTAG TCCAACTGTC
44	TTTTGTCCTAGTTGTAGCTTTTATAATTTCGAACTCCTGACCTCATGTGAT TTGGCCGCT
45	AGACTCAACCATTTGTCTAACCAATCAATCGAACTCCTGACCTCAGATGA TTCACTCACC
46	TTCCTAAACTTTATGACTGAAATTATCTTCGAACTCCTGATCTCAGGTGA TTTACTTGCG
47	GTGTCTGCATCTATTTTTATTAAGCCTTTCGAACTCCTGACTTTGTGATTC GCAAAATAT
48	ACCAGCTCCTGTATTCCACTAGAAGACTTCGAACTCCTGACCTTGTGCTC TGTCTGCCTC
49	TTTAAAATAACAGATTATATCAAGAGCATCGAACTCCTGACTTCAGGAA ATCTGCCCGTC
50	ATTCTAATATTCTTTAAAAACCATAAATTCGATCTCTTGACCTTGTGACT CACCCGCATC

表8.a3

	探針位置				
	Chr	**開始1**	**結束1**	**開始2**	**結束2**
1	1	112153186	112153215	112272447	112272476
2	1	112153186	112153215	112262817	112262846
3	22	25299532	25299561	25482040	25482069
4	11	93197090	93197119	93228756	93228785
5	12	8956668	8956697	9052194	9052223
6	17	27705009	27705038	27778036	27778065
7	17	27705009	27705038	27865683	27865712
8	19	50840717	50840746	50961393	50961422
9	1	27836402	27836431	28029816	28029845
10	10	101411215	101411244	101490107	101490136
11	11	93057518	93057547	93228756	93228785
12	18	42444490	42444519	42488743	42488772
13	1	99639845	99639874	99714372	99714401
14	19	34393710	34393739	34499920	34499949
15	3	196356745	196356774	196597660	196597689
16	1	99670351	99670380	99714372	99714401
17	11	9685855	9685884	9716872	9716901
18	17	27705009	27705038	27879478	27879507
19	5	76572659	76572688	76680139	76680168
20	6	132711125	132711154	132761426	132761455
21	4	154222023	154222052	154421616	154421645

22	15	98883743	98883772	99043861	99043890
23	22	25482040	25482069	25619470	25619499
24	11	93183030	93183059	93228756	93228785
25	10	122685605	122685634	122705503	122705532
26	1	99538093	99538122	99618650	99618679
27	11	93198709	93198738	93228756	93228785
28	17	27602913	27602942	27705009	27705038
29	18	42413426	42413455	42488743	42488772
30	3	184240659	184240688	184480441	184480470
31	11	9685855	9685884	9839688	9839717
32	3	184390826	184390855	184480441	184480470
33	17	27609056	27609085	27705009	27705038
34	7	29911761	29911790	30016615	30016644
35	8	5125372	5125401	5302509	5302538
36	1	109341941	109341970	109359721	109359750
37	8	5120560	5120589	5302509	5302538
38	11	9663012	9663041	9685855	9685884
39	2	223395100	223395129	223450575	223450604
40	22	34722668	34722697	34750118	34750147
41	22	34696714	34696743	34750118	34750147
42	11	9577172	9577201	9685855	9685884
43	3	196470838	196470867	196597660	196597689
44	3	10166865	10166894	10293573	10293602
45	16	20286574	20286603	20445723	20445752
46	8	47130821	47130850	47283077	47283106
47	6	46139224	46139253	46175453	46175482
48	1	241874934	241874963	242040740	242040769
49	5	76400224	76400253	76572659	76572688
50	15	34889023	34889052	34980543	34980572

表8.a4

	4 kb序列位置					
	Chr	**開始1**	**結束1**	**開始2**	**結束2**	**LS**
1	1	112149216	112153215	112268477	112272476	NA
2	1	112149216	112153215	112262817	112266816	NA
3	22	25295562	25299561	25482040	25486039	1
4	11	93193120	93197119	93228756	93232755	1
5	12	8956668	8960667	9048224	9052223	1
6	17	27705009	27709008	27774066	27778065	1
7	17	27705009	27709008	27861713	27865712	1
8	19	50836747	50840746	50961393	50965392	1
9	1	27832432	27836431	28029816	28033815	1

10	10	101411215	101415214	101486137	101490136	NA
11	11	93057518	93061517	93228756	93232755	1
12	18	42444490	42448489	42488743	42492742	NA
13	1	99635875	99639874	99710402	99714401	NA
14	19	34389740	34393739	34499920	34503919	NA
15	3	196352775	196356774	196593690	196597689	1
16	1	99666381	99670380	99710402	99714401	NA
17	11	9685855	9689854	9712902	9716901	1
18	17	27705009	27709008	27875508	27879507	1
19	5	76572659	76576658	76676169	76680168	1
20	6	132707155	132711154	132757456	132761455	1
21	4	154218053	154222052	154421616	154425615	NA
22	15	98879773	98883772	99039891	99043890	NA
23	22	25482040	25486039	25615500	25619499	1
24	11	93179060	93183059	93228756	93232755	NA
25	10	122681635	122685634	122701533	122705532	NA
26	1	99534123	99538122	99618650	99622649	1
27	11	93198709	93202708	93228756	93232755	1
28	17	27598943	27602942	27705009	27709008	1
29	18	42413426	42417425	42488743	42492742	NA
30	3	184236689	184240688	184480441	184484440	NA
31	11	9685855	9689854	9835718	9839717	NA
32	3	184386856	184390855	184480441	184484440	1
33	17	27609056	27613055	27705009	27709008	1
34	7	29907791	29911790	30016615	30020614	NA
35	8	5121402	5125401	5298539	5302538	1
36	1	109341941	109345940	109359721	109363720	1
37	8	5116590	5120589	5298539	5302538	NA
38	11	9659042	9663041	9685855	9689854	1
39	2	223391130	223395129	223446605	223450604	NA
40	22	34722668	34726667	34750118	34754117	NA
41	22	34696714	34700713	34750118	34754117	NA
42	11	9573202	9577201	9685855	9689854	NA
43	3	196466868	196470867	196593690	196597689	NA
44	3	10166865	10170864	10289603	10293602	NA
45	16	20282604	20286603	20445723	20449722	1
46	8	47126851	47130850	47283077	47287076	1
47	6	46135254	46139253	46171483	46175482	1
48	1	241870964	241874963	242036770	242040769	1
49	5	76400224	76404223	76572659	76576658	NA

50	15	34885053	34889052	34976573	34980572	1

表8.a5

	ICU_log	輕度_log	ICU	輕度
1	NA			
2	NA			
3	9.599447509	9.264430371	775.7497459	614.9947869
4	10.49352917	10.17236933	1441.673918	1153.953462
5	10.39444376	10.07459523	1345.982339	1078.339117
6	10.62636191	10.30661631	1580.715378	1266.486789
7	10.38661023	10.07117308	1338.693737	1075.78427
8	10.52410405	10.21459717	1472.553211	1188.228988
9	9.307071362	8.999038316	633.4431611	511.6588203
10	NA			
11	10.13229518	9.830744132	1122.34086	910.6444884
12	NA			
13	NA			
14	NA			
15	11.3551302	11.05966017	2619.598874	2134.467046
16	NA			
17	10.96040561	10.66624354	1992.557451	1625.022004
18	9.792740941	9.502085361	886.9696569	725.1247273
19	9.954154896	9.666236536	991.9715236	812.5070587
20	10.79801835	10.51013898	1780.440303	1458.367884
21	NA			
22	NA			
23	9.41281968	9.126735681	681.6180263	559.0120922
24	NA			
25	NA			
26	8.716848864	8.432579255	420.7585753	345.5089458
27	9.955695294	9.671614205	993.0312396	815.5413435
28	10.68633942	10.40538876	1647.815971	1356.232452
29	NA			
30	NA			
31	NA			
32	11.59600435	11.31769	3095.602146	2552.490721
33	10.34141121	10.06315294	1297.403219	1069.82043
34	NA			
35	10.63316233	10.35536907	1588.183975	1310.01632
36	12.02325406	11.74668149	4162.556271	3436.398165

37	NA			
38	10.71331661	10.43719433	1678.918649	1386.463896
39	NA			
40	NA			
41	NA			
42	NA			
43	NA			
44	NA			
45	11.58969784	11.31567449	3082.099758	2548.927271
46	9.657401797	9.38369253	807.546652	667.9945538
47	9.529836499	9.256408896	739.2079689	611.5848656
48	10.84187781	10.5685943	1835.398746	1518.671685
49	NA			
50	10.11684723	9.847861496	1110.387282	921.5135034

表8.a6

	巢式PCR引子集	
	探針	引子ID
1	Hg38_1_112145907_112153217_112262815_112272478_FF	OBD183-261
2	Hg38_1_112145907_112153217_112262815_112272478_FR	OBD183-189
3	Hg38_22_25290566_25299563_25482038_25486782_FR	OBD183-013
4	Hg38_11_93191458_93197121_93228754_93237221_FR	OBD183-321
5	Hg38_12_8956666_8971971_9041253_9052225_RF	OBD183-141
6	Hg38_17_27705007_27714184_27773460_27778067_RF	OBD183-093
7	Hg38_17_27705007_27714184_27860380_27865714_RF	OBD183-117
8	Hg38_19_50837203_50840748_50961391_50964466_FR	OBD183-269
9	Hg38_1_27834284_27836433_28029814_28033207_FR	OBD183-293
10	Hg38_10_101411213_101417434_101485766_101490138_RF	OBD183-025
11	Hg38_11_93057516_93069988_93228754_93237221_RR	OBD183-233
12	Hg38_18_42444488_42452373_42488741_42500135_RR	OBD183-301
13	Hg38_1_99631771_99639876_99708395_99714403_FF	OBD183-1201
14	Hg38_19_34387270_34393741_34499918_34506554_FR	OBD183-1205
15	Hg38_3_196353836_196356776_196593741_196597691_FF	OBD183-389
16	Hg38_1_99659612_99670382_99708395_99714403_FF	OBD183-1209
17	Hg38_11_9685853_9690988_9710140_9716903_RF	OBD183-381
18	Hg38_17_27705007_27714184_27875357_27879509_RF	OBD183-029
19	Hg38_5_76572657_76583168_76676513_76680170_RF	OBD183-069
20	Hg38_6_132703799_132711156_132757539_132761457_FF	OBD183-1213
21	Hg38_4_154217720_154222054_154421614_154428471_FR	OBD183-057
22	Hg38_15_98874707_98883774_99040149_99043892_FF	OBD183-205

23	Hg38_22_25482038_25486782_25613025_25619501_RF	OBD183-113
24	Hg38_11_93178112_93183061_93228754_93237221_FR	OBD183-245
25	Hg38_10_122677780_122685636_122702672_122705534_FF	OBD183-065
26	Hg38_1_99533569_99538124_99618648_99629858_FR	OBD183-273
27	Hg38_11_93198707_93202947_93228754_93237221_RR	OBD183-253
28	Hg38_17_27594551_27602944_27705007_27714184_FR	OBD183-041
29	Hg38_18_42413424_42422256_42488741_42500135_RR	OBD183-281
30	Hg38_3_184235022_184240690_184480439_184482239_FR	OBD183-053
31	Hg38_11_9685853_9690988_9833988_9839719_RF	OBD183-385
32	Hg38_3_184389484_184390857_184480439_184482239_FR	OBD183-185
33	Hg38_17_27609054_27616846_27705007_27714184_RR	OBD183-077
34	Hg38_7_29905017_29911792_30016613_30019069_FR	OBD183-1217
35	Hg38_8_5120591_5125403_5295149_5302540_FF	OBD183-1221
36	Hg38_1_109341939_109348573_109359719_109366704_RR	OBD183-1225
37	Hg38_8_5115633_5120591_5295149_5302540_FF	OBD183-1229
38	Hg38_11_9656772_9663043_9685853_9690988_FR	OBD183-397
39	Hg38_2_223382061_223395131_223446116_223450606_FF	OBD183-237
40	Hg38_22_34722666_34726389_34750116_34757594_RR	OBD183-1233
41	Hg38_22_34696712_34700627_34750116_34757594_RR	OBD183-137
42	Hg38_11_9575436_9577203_9685853_9690988_FR	OBD183-353
43	Hg38_3_196466940_196470869_196593741_196597691_FF	OBD183-349
44	Hg38_3_10166863_10171451_10289864_10293604_RF	OBD183-341
45	Hg38_16_20282299_20286605_20445721_20457266_FR	OBD183-1237
46	Hg38_8_47127019_47130852_47283075_47288879_FR	OBD183-1241
47	Hg38_6_46130577_46139255_46168740_46175484_FF	OBD183-1245
48	Hg38_1_241870739_241874965_242033568_242040771_FF	OBD183-1249
49	Hg38_5_76400222_76402838_76572657_76583168_RR	OBD183-129
50	Hg38_15_34886920_34889054_34974237_34980574_FF	OBD183-1253

表8.a7

	巢式PCR引子集		
	引子序列	引子ID	引子序列
1	GCTGCCCTGAAAATGGGAGTCTG	OBD183-263	CTCTCTCCCTTCAGCACAGCCAC
2	TGCCCTGAAAATGGGAGTCTGAGTTA	OBD183-191	GGATGAATGTGACGCTTTCGTTCCCC
3	GAATGCTTCTGGAACACTTCTTCAAG	OBD183-015	CTGTCCCATCTGCCTAAAACCGTTGG
4	GCACACAGTAAGCACGCAATAAAATG	OBD183-323	GGATAAGCCACAAGGCAACTGGTCTG
5	GAAGGTGGCATTCTCTATT	OBD183-143	ACTGCGGAACTTCAAAG

	GTGTCCA		GTCAGGTGC
6	GGGTGACCGAGTGAGATG ATGTC	OBD183-097	ACCCTGTAGTCCTGGGC TCAAGAGAT
7	GAGGAACCACCAGGCTTT GGAGC	OBD183-1171	GGTTGGGTTTTCTCAAT AATCCATAG
8	AGGGTGAGGGTATGTGGG TAGTG	OBD183-271	CAGCCAGCAGAGACAG GAAGTGC
9	GAGAGTTATTCCTCAAGTG CTCCCAC	OBD183-295	CAGAACACAGTGAACA ACCAGGCATT
10	ATTCTAAGTTTTCTCTCCC ACCCC	OBD183-027	GAACAGGGATGGGCAG AAGCAGAAAA
11	CAGGGCTACAGATGCTGG CAAAGTTG	OBD183-235	CACAAGGCAACTGGTCT GAATGTTTC
12	CTCTGGCATTGGTCAAGGT CAAAGTA	OBD183-303	ATAGGGCTGGAGAGGA GTAGGCAGAT
13	AGAGCGCACGGAGATCAC CGAGCGA	OBD183-1203	GAGGTACTGGAGCCGAG AGGTAAC
14	TCTATCAGATCGGCGACCA TTTGT	OBD183-1207	TACGATGCCGCTAAGAA CCTCTC
15	GAAGGAAGGTGACTTGCT TGCCCAAC	OBD183-391	ATGAAATCACACCCAAG TCCCTCACT
16	GGTCGTCGCTGACGTTTAC ACTC	OBD183-1211	TAGTCTCATTATAATCG TTCGCTA
17	GGGAGGAAGACTGTAGTT GGAGACAT	OBD183-383	TGGAGGGCTTGCTATGG TCTGAATGT
18	AGGAGCCTCTGGAGCAAG GTCAG	OBD183-031	GCCATCCCCTACACAGG TTCTCA
19	GTAATCAAGACAGTGCTA TGCTGGCA	OBD183-073	CCTGACCCACCAAGACT GAACCA
20	TTCAGGGATTGACCAACA CCGGAA	OBD183-1215	AACATCTCACTTGAAGT AATGTAT
21	CTTTACTCTTATGCTCTGC TCTGTGC	OBD183-059	AAACACAGATGAGTTCG GGCGTGGTG
22	TAGGCTGTCCTCCTCCTGT GCCA	OBD183-207	TGGAGACCCCAGGCTAA TACAGC
23	GATGGGCTGAGGTGGAGT CTACC	OBD183-1131	CCGCCCATCTGTAAGCC CATCTC
24	TTACCTCAGACATAGAAA GTGACTGC	OBD183-247	GCCACAAGGCAACTGGT CTGAATGTT
25	TCTGTCTTGCTCGTGATAG TAGTTGG	OBD183-067	GTAGGCGTTCATCTTCA CGGTAAGGC
26	CCTCAAATCTTGTCGGGAG TTCCTCA	OBD183-275	ACTGTGACCAAAGGAAG GAAAGCCAT
27	GCAACCCCACTGAATGAA ACGGACAC	OBD183-255	CACAAGGCAACTGGTCT GAATGTTTC

28	GGTCCCAGAGATGTTGACAGCCTG	OBD183-043	GCCATCCCCTACACAGGTTCTCA
29	GAGTTCTACCTAAGTCAGAGGAGGAA	OBD183-283	ATAGGGCTGGAGAGGAGTAGGCAGAT
30	GGCTCTTGCTCTGCTATGGGTTG	OBD183-055	GGCGATGCCCAGCAAGAGTGAAG
31	TGTTCCATTGTAGACTTCTCGGAGGC	OBD183-387	TGGAGGGCTTGCTATGGTCTGAATGT
32	CCCCTCCCTCATTCCTACCATCA	OBD183-187	GGCGATGCCCAGCAAGAGTGAAG
33	GTGCCACCCTGGGCTGGATGATT	OBD183-081	GCCTCTGGTGCCCTTTTGGGTTG
34	ACGACAGAGTCCGTGCACCTACCA	OBD183-1219	CTGACGCTGCAAAATTTGCAACCAG
35	AACCTCTTTAGTCTAAGTTCAGACT	OBD183-1223	GCAGTCTTCGCGGTAGGTCCTAGTG
36	AGTTGGAAGTTTGTCTAGATCTCAG	OBD183-1227	AGATATCTTTGATGTCGTGATTGG
37	ATTTTGTCACTAGAGGACGCACGCT	OBD183-1231	CTCGAGAGGAGGAGACGTCAGTCC
38	TCAAGTGACCATTGTGACCACCGC	OBD183-399	GGTGGAGGGCTTGCTATGGTCTG
39	CGCATTCTTTTGCCAACACCACATCA	OBD183-239	CTGACCCAGGAAAACCACCCTCATTC
40	AAGGACCCTTGGCCCTCCACCCTT	OBD183-1235	AGGCAGTGTATACTCTTCCATAAA
41	GCCCTCTACTTACCAACTTCTGCCTT	OBD183-139	GCATTCCTGATTGCCTGATTTCAAGT
42	TAGGCAGAACGCTTTGAGAGAAGTAT	OBD183-355	GTGGAGGGCTTGCTATGGTCTGAATG
43	TCAGTCACCCCATCCAGCCTCAT	OBD183-351	TAAGAGGACCTACGCACCCGCAG
44	TCTGTTGCGGGTCTCTTGAGGGC	OBD183-343	TAGTGAAGCCAGGTCCAGGAGCA
45	CGGGCTATTAGTTATGAGGTCCGAA	OBD183-1239	CCGTTACTGTTGGTCGTAGAGCCCA
46	GATTGAAAAAGGTGAGGGAACTCGG	OBD183-1243	GAACGGGTTGGCCAGATGTGCGACA
47	CCGAACGGGAAAGACGGACATCTAG	OBD183-1247	ATATCGCTTAGTCGCTCTTGGGCCG
48	GCAACCTGACCACGGTTGCGCGTCC	OBD183-1251	CGGTGCGCTACCTTGCAGGAATTGA
49	TTACTTTGCCATCTGATTGTGCTTGC	OBD183-131	GACCTCCAGCGAGACCACTCCTAAAT
50	GACCGTCCGTTAATTTCCC	OBD183-1255	AACCGCTCTCTTAGAAG

	TTGCAT		AGAGACAG

表8.a8

51	Hg38_11_59844932_59849082_59873751_59881156_FF	TCN1	47867.7306
52	Hg38_2_68140822_68144419_68359452_68365969_FR	PLEK	51605.70057
53	Hg38_2_223296739_223307566_223446116_223450606_FF	AP1S3	49372.04609
54	Hg38_3_2993519_3002201_3121830_3126033_FF	IL5RA	48427.09125
55	Hg38_8_47239740_47247017_47283075_47288879_FR	PRKDC	47376.87168
56	Hg38_19_55428737_55436084_55609240_55610480_RR	SSC5D	47009.69299
57	Hg38_19_50907981_50915866_50961391_50964466_RR	KLK5	51087.9601
58	Hg38_6_13822111_13826619_14070076_14075830_RF	CD83	51551.70406
59	Hg38_2_215168332_215174922_215339857_215344488_FF	FN1	48345.93731
60	Hg38_9_83691585_83699524_83785514_83789572_FF	UBQLN1	48416.43058
61	Hg38_5_76572657_76583168_76717099_76725306_RF	IQGAP2	52489.5729
62	Hg38_1_27966549_27971202_28029814_28033207_FR	SMPDL3B	51485.31893
63	Hg38_2_227820023_227824564_227868226_227874758_RR	CCL20	46004.21086
64	Hg38_12_25200007_25206998_25256673_25260057_FR	KRAS	52498.54024
65	Hg38_7_66298919_66305803_66392051_66398673_FF	CRCP	54136.9225
66	Hg38_10_67952694_67960415_68133244_68143089_FR	SIRT1	54837.31692
67	Hg38_11_78974904_78976508_79134716_79152601_RF	GAB2	41989.93216
68	Hg38_16_20348272_20352389_20445721_20457266_RR	UMOD	55380.96235
69	Hg38_4_70243444_70255254_70475197_70476584_FF	MUC7	52402.38034
70	Hg38_12_45013447_45019401_45077155_45087147_FF	ANO6	51383.90016
71	Hg38_16_12325962_12334419_12372790_12375829_FF	CPPED1	52699.22445
72	Hg38_17_39781052_39789227_39819888_39822803_RR	GRB7	55019.10601
73	Hg38_3_157551093_157568769_157606016_157614360_FF	PTX3	53401.93153
74	Hg38_20_32234511_32238066_32285519_32290180_FF	KIF3B	48801.16551
75	Hg38_5_139327785_139331530_139355652_139356681_FF	MATR3	53797.60168
76	Hg38_6_13822111_13826619_14011144_14016925_RF	CD83	58355.99643
77	Hg38_5_55874716_55883166_56069488_56074299_FR	IL31RA	53914.7156
78	Hg38_1_109359719_109366704_109611657_109614647_RF	PSMA5	54950.53026
79	Hg38_19_50732808_50735232_50961391_50964466_RR	GPR32	56016.13008
80	Hg38_8_55800026_55805370_55942582_55947045_FF	LYN	55621.8783
81	Hg38_11_93115381_93124900_93228754_93237221_FR	MTNR1B	52689.14086
82	Hg38_X_70952076_70955538_71213839_71218089_FF	IL2RG	56885.39132
83	Hg38_11_93057516_93069988_93228754_93237221_FR	MTNR1B	55446.12937
84	Hg38_5_76572657_76583168_76637173_76639966_RF	IQGAP2	58308.47106
85	Hg38_20_4763308_4769930_4885862_4890450_FF	RASSF2	59927.43482
86	Hg38_3_105278351_105281788_105425156_105431103_RF	ALCAM	56327.14698
87	Hg38_19_42642158_42648993_42697457_42701566_RR	CEACAM8	55006.12013

88	Hg38_5_76400222_76402838_76572657_76583168_FR	IQGAP2	53090.77575
89	Hg38_2_223203554_223212132_223446116_223450606_FF	SCG2	58337.7325
90	Hg38_19_38895868_38902769_39089148_39091382_FR	SIRT2	57992.17317
91	Hg38_1_17044824_17050263_17192218_17198113_FF	PADI2	57847.82668
92	Hg38_5_76420596_76423340_76572657_76583168_FR	IQGAP2	58745.04935
93	Hg38_20_34791262_34795203_34932162_34933974_FF	NCOA6	60708.3298
94	Hg38_12_8119443_8124985_8341969_8343630_FF	CLEC4A	60019.25444
95	Hg38_17_1287026_1289930_1411117_1412617_FR	CRK	53984.44619
96	Hg38_1_109359719_109366704_109385998_109391476_RF	PSMA5	56576.1692
97	Hg38_1_187499122_187506399_187600952_187612332_FF	PTGS2	59637.75783
98	Hg38_11_72469497_72474813_72726299_72730494_FF	ARAP1	58295.92687
99	Hg38_15_34813171_34816916_34974237_34980574_FF	ACTC1	61960.99999
100	Hg38_12_32741504_32743146_32986666_32993216_RF	PKP2	66693.25

表8.b1

51	1.204466691	0.000270694	0.000186333	免疫
52	1.204265587	0.000198471	9.45656E-05	免疫
53	1.203832699	0.000377016	0.000308266	免疫
54	1.20361951	0.000203616	9.86734E-05	免疫
55	1.203047691	0.000323677	0.000248469	免疫
56	1.202678261	0.000386009	0.000316755	免疫
57	1.202676692	0.000190318	3.69637E-05	免疫
58	1.202099372	0.000190318	3.79683E-05	免疫
59	1.201468439	0.000309338	0.000232913	免疫
60	1.201216095	0.000398896	0.000329676	免疫
61	1.201051522	0.000190585	7.80929E-05	免疫
62	1.200030214	0.000205013	0.00010311	免疫
63	1.198654468	0.000208559	0.000105506	免疫
64	1.198534797	0.000190318	5.24934E-05	免疫
65	1.19847735	0.000424345	0.000356949	免疫
66	1.198308347	0.000190318	5.88163E-05	免疫
67	1.1980759	0.003159364	0.003112902	免疫
68	1.198072413	0.000190318	2.38385E-05	免疫
69	1.197988929	0.000331089	0.000256107	免疫
70	1.197718744	0.000436269	0.000370828	免疫
71	1.197394377	0.000267757	0.000174042	免疫
72	1.19677388	0.000190585	7.78741E-05	免疫
73	1.196698463	0.000236458	0.000138568	免疫

74	1.196661797	0.00035878	0.000285969	免疫
75	1.196248355	0.000270694	0.000187911	免疫
76	1.195984218	0.000190318	1.12567E-05	免疫
77	1.195682592	0.000190318	6.19733E-05	免疫
78	1.194986266	0.000190318	2.4109E-05	免疫
79	1.194608978	0.000190318	4.85841E-05	免疫
80	1.194497412	0.000190318	4.73235E-05	免疫
81	1.194332622	0.000370996	0.000298257	心臟
82	1.194295196	0.000190318	4.47041E-05	免疫
83	1.193750964	0.000220747	0.000116217	心臟
84	1.193449221	0.000190318	2.06378E-05	免疫
85	1.1931546	0.000190318	3.53671E-05	免疫
86	1.19304865	0.000241232	0.000148287	免疫
87	1.192289525	0.000211794	0.000109015	免疫
88	1.19220398	0.000269965	0.0001777	免疫
89	1.192155643	0.000203616	9.92034E-05	免疫
90	1.191812951	0.000190318	3.70888E-05	免疫
91	1.191782438	0.000190318	3.95164E-05	免疫
92	1.191324001	0.000190318	5.82141E-05	免疫
93	1.190714179	0.000190318	2.03084E-05	免疫
94	1.190702538	0.000190318	5.73893E-05	免疫
95	1.190499917	0.000367955	0.000294364	免疫
96	1.190008843	0.000190585	7.12243E-05	免疫
97	1.188655157	0.000190318	4.90378E-05	心臟
98	1.187152176	0.000296454	0.000221468	心臟
99	1.184047821	0.000211794	0.000108871	心臟
100	1.181070726	0.000190318	2.9096E-05	心臟

表8.b2

51	TGCCACCTCTAGAAGGAACACAGCTCCTTCGATCTCCTGACCTCATGACGTGTCCGCCTT
52	TCTCAAAATAGCCAAAAGTCTGAAACAATCGAACTCCCGACCTCCAGTGGAAGTTCACAC
53	ATACACTTCTATCTTGGAACTATTGAGATCGAACTCCTGACCTACCTCAAGTGATCCATC
54	CTAATTTTTATGAATATTTTTAATTGATTCGAACTCCTGACCTCGTGTTCCCCAGGCCTC
55	ATTTTGTTAAATCCTTTCTCTGCATCAATCGAACTCCTGATCTCAGGTGATTTACTTGCG

56	TTTTTGGAATAAATAGACATTTTCCTGATCGAACTCCTGACTATAGTTGATCCACCCACC
57	CGGGGAGCCTTACCAATAACATAAATAGTCGAACTCCTGACCCTAGGTGATCCTCCTGCT
58	AATAAAAATAGAAAACAATCCTTCAAAATCGATCTCCTTACCTCGTAATCTGCCTGCATA
59	TTGTAAAATCTAGTCTTCTGCTTCCAAGTCGAACTCCTGAGCTCAAGTCATCTACGTGCC
60	TTTTTATTTTTTTGTAGACAGGCTGGTCTCGAGGAAGGGATTCTGGACAGATAAAAACAA
61	ATTTAAACTATTTAATAATTTGCTGTATTCGAACTCCTGACTTCAGGAAATCTGCCCGTC
62	TGATGCTAAGGCACAGTCAGTTTTACATTCGAACTCCTGACCTCAGGAGTTCCACCCACC
63	GAGTTGGGCAGATCATGAGGTCAGGAGTTCGATCTCCTGACCTTATGATCTGCCCACCTT
64	ATGAAGTGATTTACATAAAGTAGCTTGATCGAACTCCAGACCTCAGGAGATCTGCAGTCC
65	GATAATATTTAGTGAATATAGGGCTATTTCGAACTCCTGACTTGAGGTGATTCACCTGCC
66	CTAAAATTTTTTTTTTTGAGACGGAGCTTCGAACTCCTGACCTTATGCAATCCACTTGCC
67	TACAACAATTTATTTTTGGTTTAAAAGCTCGAACTCCTGACCTTATATAATCTGCCCACC
68	GGAGTGCAGTATAGACGAGGACTGCAAATCGAACTCCTGACCTCAGATGATTCACTCACC
69	GGTGGTCACCCATAGTCATTTACTTCTGTCGAACTCCTGACCTCACATTCCTGTATTTTC
70	CACGTTCTGGTAGTTAGGAAAATTCAAATCGAACTCCTGACCTCATTACCCACCCACCTT
71	TGGGGAAAAAAATCATCCCCGGGTGCATTCGAACTCCTGACCTCAAATGCACCCCCACCT
72	TTTACAACTGCTGGTCAGCCAGAGTCAGTCGAACTCCTGACCTCCAGAAAAATCCGCCCA
73	ATTTTTTTATGTGATGTGAGGTAAGAGTTCGATCTCCTGACCTCAGATGATCCATCTGCC
74	TAAATGCTCTTAATTATAAAAAATTCTGTCGAATTCCTGACCTCAGGTGTTCTACCTGCC
75	CTGTTAGTGATAAATCTGTAACAGCCCTTCGAACTCCTGACATCAAATAATCCACTCGCC
76	TTCCTATATGCCTGGAATAATGCCTTAGTCGATCTCCTTACCTCGTAATCTGCCTGCATA
77	CTGTTTCATCTGATTTAAAATACACACTTCGAACTCCTGACCTCAGGCAGTCACCTTCTT
78	GTACAGCCAAGGTGGAGAACTACTGAGGTCGAACTCCTGACCTCAG

	GTAATCTTCCCACA
79	ATCTTCTTTTCTTCCCCCATCCATTTCATCGAACTCCTGACCCTAGGT GATCCTCCTGCT
80	CAGATGAATCCCTTGTAACCTAGATACATCGAACTCCTGACCACAGG TGATCTACCTAAC
81	TGTCATTCAGCAATATTCAGTTTTTTGATCGAACTCCTGACCTTGTAA TCTGTCCACCTT
82	TTGATCTACAGACTTAGAGCAACAGCCATCGAAGTCCTGACCTCAGG TAATCCTGCTGCC
83	GAATCCTAATCATAAAAGGGAAGTTTTATCGAACTCCTGACCTTGTA ATCTGTCCACCTT
84	AGATGTATCAAACTATAAAGCAGCAGCATCGAACTCCTGACTTCAGG AAATCTGCCCGTC
85	TATAAGGCTTAAGATCTCTTAGAGTCTATCGAACTCATGACCTCAGG TTATCCTCCTGCC
86	ATAGAAAGTATATTCTATTAAGAGGTACTCGAGACCAGACTGGATAA CAAGGCAAAACCC
87	CCTGGAAATCAGCTAGGAGGCCATTCCTTCGATCTCCTGACCTCGTG CGCAAGAGCAATG
88	TGTAGACAAAAAGTGACAGAAGCAACTTTCGAACTCCTGACTTCAGG AAATCTGCCCGTC
89	GAAAGGTGGAGAATGAGGTGAAAAGAAGTCGAACTCCTGACCTACC TCAAGTGATCCATC
90	TGGCTGCTTTTGCACTGACACAGCAGAGTCGAACTCCTGACCTCAAG TAATCTACCCACC
91	CCAGGATGTACTACACTGAATATCTAAGTCGAACTCCTGACCTCAGG TTATCCATCTGCC
92	TGGTACCCGCTATTAAAATGGTGCTTGGTCGAACTCCTGACTTCAGG AAATCTGCCCGTC
93	CAGGTTGCTAAAAATCATTTTTGCATGATCGAACTCCTGACCTTACG ATCCACCCACCTT
94	CCCCCATCATTTGACAAAATATCATAACTCGAACTCCTGACCTCATG ATTTCCTGCCTCA
95	GCACCCAAGCTGGGAACCTGGGAATCATTCGATCTCCTGACCTCGTG ATTACAGGTGTGA
96	CAAAACTTCTTGTGCTGTAGATGAGGAATCGAACTCCTGACCTCAGG TAATCTTCCCACA
97	GTGATAAGTTATACAGAGATAAAATAAGTCGAACTCCTGGACTTATG TGATCTGCCCCCC
98	CAGAAAGGCTATTAGAATGCTTTGACCTTCGAATTCCTGACCTCAAG TGTTGGGATTACA
99	TAACAAAACATTTAAGAAGTAAATAATATCGATCTCTTGACCTTGTG ACTCACCCGCATC
100	TCACATTTGAATTATTCACCCAAATGAATCGAACTCCTGACGTCAGG TGATCTACCTGTC

表8.b3

51	11	59849051	59849080	59881125	59881154
52	2	68144388	68144417	68359454	68359483
53	2	223307535	223307564	223450575	223450604
54	3	3002170	3002199	3126002	3126031
55	8	47246986	47247015	47283077	47283106
56	19	55428739	55428768	55609242	55609271
57	19	50907983	50908012	50961393	50961422
58	6	13822113	13822142	14075799	14075828
59	2	215174891	215174920	215344457	215344486
60	9	83699493	83699522	83789541	83789570
61	5	76572659	76572688	76725275	76725304
62	1	27971171	27971200	28029816	28029845
63	2	227820025	227820054	227868228	227868257
64	12	25206967	25206996	25256675	25256704
65	7	66305772	66305801	66398642	66398671
66	10	67960384	67960413	68133246	68133275
67	11	78974906	78974935	79152570	79152599
68	16	20348274	20348303	20445723	20445752
69	4	70255223	70255252	70476553	70476582
70	12	45019370	45019399	45087116	45087145
71	16	12334388	12334417	12375798	12375827
72	17	39781054	39781083	39819890	39819919
73	3	157568738	157568767	157614329	157614358
74	20	32238035	32238064	32290149	32290178
75	5	139331499	139331528	139356650	139356679
76	6	13822113	13822142	14016894	14016923
77	5	55883135	55883164	56069490	56069519
78	1	109359721	109359750	109614616	109614645
79	19	50732810	50732839	50961393	50961422
80	8	55805339	55805368	55947014	55947043
81	11	93124869	93124898	93228756	93228785
82	X	70955507	70955536	71218058	71218087
83	11	93069957	93069986	93228756	93228785
84	5	76572659	76572688	76639935	76639964
85	20	4769899	4769928	4890419	4890448
86	3	105278353	105278382	105431072	105431101
87	19	42642160	42642189	42697459	42697488
88	5	76402807	76402836	76572659	76572688

89	2	223212101	223212130	223450575	223450604
90	19	38902738	38902767	39089150	39089179
91	1	17050232	17050261	17198082	17198111
92	5	76423309	76423338	76572659	76572688
93	20	34795172	34795201	34933943	34933972
94	12	8124954	8124983	8343599	8343628
95	17	1289899	1289928	1411119	1411148
96	1	109359721	109359750	109391445	109391474
97	1	187506368	187506397	187612301	187612330
98	11	72474782	72474811	72730463	72730492
99	15	34816885	34816914	34980543	34980572
100	12	32741506	32741535	32993185	32993214

表8.b4

51	11	59845081	59849080	59877155	59881154	NA
52	2	68140418	68144417	68359454	68363453	1
53	2	223303565	223307564	223446605	223450604	NA
54	3	2998200	3002199	3122032	3126031	1
55	8	47243016	47247015	47283077	47287076	NA
56	19	55428739	55432738	55609242	55613241	NA
57	19	50907983	50911982	50961393	50965392	1
58	6	13822113	13826112	14071829	14075828	1
59	2	215170921	215174920	215340487	215344486	NA
60	9	83695523	83699522	83785571	83789570	NA
61	5	76572659	76576658	76721305	76725304	1
62	1	27967201	27971200	28029816	28033815	1
63	2	227820025	227824024	227868228	227872227	1
64	12	25202997	25206996	25256675	25260674	1
65	7	66301802	66305801	66394672	66398671	NA
66	10	67956414	67960413	68133246	68137245	1
67	11	78974906	78978905	79148600	79152599	NA
68	16	20348274	20352273	20445723	20449722	1
69	4	70251253	70255252	70472583	70476582	NA
70	12	45015400	45019399	45083146	45087145	NA
71	16	12330418	12334417	12371828	12375827	NA
72	17	39781054	39785053	39819890	39823889	1
73	3	157564768	157568767	157610359	157614358	NA
74	20	32234065	32238064	32286179	32290178	NA
75	5	139327529	139331528	139352680	139356679	NA
76	6	13822113	13826112	14012924	14016923	1
77	5	55879165	55883164	56069490	56073489	1
78	1	109359721	109363720	109610646	109614645	1

79	19	50732810	50736809	50961393	50965392	1
80	8	55801369	55805368	55943044	55947043	1
81	11	93120899	93124898	93228756	93232755	NA
82	X	70951537	70955536	71214088	71218087	1
83	11	93065987	93069986	93228756	93232755	NA
84	5	76572659	76576658	76635965	76639964	1
85	20	4765929	4769928	4886449	4890448	1
86	3	105278353	105282352	105427102	105431101	NA
87	19	42642160	42646159	42697459	42701458	NA
88	5	76398837	76402836	76572659	76576658	NA
89	2	223208131	223212130	223446605	223450604	1
90	19	38898768	38902767	39089150	39093149	1
91	1	17046262	17050261	17194112	17198111	1
92	5	76419339	76423338	76572659	76576658	1
93	20	34791202	34795201	34929973	34933972	1
94	12	8120984	8124983	8339629	8343628	1
95	17	1285929	1289928	1411119	1415118	NA
96	1	109359721	109363720	109387475	109391474	1
97	1	187502398	187506397	187608331	187612330	1
98	11	72470812	72474811	72726493	72730492	NA
99	15	34812915	34816914	34976573	34980572	NA
100	12	32741506	32745505	32989215	32993214	1

表8.b5

51	NA			
52	9.611985094	9.343831497	782.5206937	649.7907953
53	NA			
54	11.56145265	11.29407325	3022.345021	2511.046886
55	NA			
56	NA			
57	11.06302246	10.7967736	2139.447352	1778.90481
58	8.68134752	8.415791358	410.5310464	341.5117386
59	NA			
60	NA			
61	9.625287484	9.360989444	789.7693035	657.5648829
62	9.331358904	9.068288175	644.1973449	536.8176048
63	9.200494854	8.939079016	588.3353263	490.8297945
64	9.675485522	9.414213727	817.7326997	682.2769785
65	NA			
66	9.316046476	9.055047287	637.3961417	531.9132952
67	NA			
68	11.77410961	11.5133945	3502.355003	2923.324971
69	NA			

70	NA			
71	NA			
72	10.43825323	10.17910264	1387.481898	1159.351755
73	NA			
74	NA			
75	NA			
76	9.120786627	8.862588275	556.7117131	465.4841633
77	11.98951547	11.73168101	4066.340952	3400.853187
78	10.94222614	10.6852321	1967.606678	1646.551709
79	10.92643826	10.6698998	1946.191912	1629.14556
80	11.42624079	11.16983706	2751.954283	2303.859561
81	NA			
82	10.06832279	9.812163313	1073.660968	898.9912807
83	NA			
84	10.74240639	10.48726921	1713.115125	1435.431935
85	9.018633738	8.76385275	518.6558433	434.6929085
86	NA			
87	NA			
88	NA			
89	9.815255083	9.561682483	900.9199315	755.7066367
90	12.17670502	11.92354719	4629.706498	3884.591532
91	12.08219348	11.82907258	4336.133547	3638.359996
92	10.59553275	10.34296692	1547.295201	1298.803012
93	11.00656056	10.75473341	2057.33435	1727.815445
94	11.59214401	11.34033097	3087.330064	2592.864267
95	NA			
96	12.037335	11.7863627	4203.382404	3532.227873
97	10.4350455	10.18571527	1384.400353	1164.677868
98	NA			
99	NA			
100	9.07291504	8.832819681	538.5419955	455.9777699

表8.b6

51	Hg38_11_59844932_59849082_59873751_59881156_FF	OBD183-033
52	Hg38_2_68140822_68144419_68359452_68365969_FR	OBD183-145
53	Hg38_2_223296739_223307566_223446116_223450606_FF	OBD183-229
54	Hg38_3_2993519_3002201_3121830_3126033_FF	OBD183-125
55	Hg38_8_47239740_47247017_47283075_47288879_FR	OBD183-369
56	Hg38_19_55428737_55436084_55609240_55610480_RR	OBD183-221
57	Hg38_19_50907981_50915866_50961391_50964466_RR	OBD183-225
58	Hg38_6_13822111_13826619_14070076_14075830_RF	OBD183-1257
59	Hg38_2_215168332_215174922_215339857_215344488_FF	OBD183-153

60	Hg38_9_83691585_83699524_83785514_83789572_FF	OBD183-089
61	Hg38_5_76572657_76583168_76717099_76725306_RF	OBD183-201
62	Hg38_1_27966549_27971202_28029814_28033207_FR	OBD183-1261
63	Hg38_2_227820023_227824564_227868226_227874758_RR	OBD183-197
64	Hg38_12_25200007_25206998_25256673_25260057_FR	OBD183-061
65	Hg38_7_66298919_66305803_66392051_66398673_FF	OBD183-1265
66	Hg38_10_67952694_67960415_68133244_68143089_FR	OBD183-309
67	Hg38_11_78974904_78976508_79134716_79152601_RF	OBD183-345
68	Hg38_16_20348272_20352389_20445721_20457266_RR	OBD183-297
69	Hg38_4_70243444_70255254_70475197_70476584_FF	OBD183-045
70	Hg38_12_45013447_45019401_45077155_45087147_FF	OBD183-1269
71	Hg38_16_12325962_12334419_12372790_12375829_FF	OBD183-1273
72	Hg38_17_39781052_39789227_39819888_39822803_RR	OBD183-265
73	Hg38_3_157551093_157568769_157606016_157614360_FF	OBD183-1277
74	Hg38_20_32234511_32238066_32285519_32290180_FF	OBD183-177
75	Hg38_5_139327785_139331530_139355652_139356681_FF	OBD183-133
76	Hg38_6_13822111_13826619_14011144_14016925_RF	OBD183-1281
77	Hg38_5_55874716_55883166_56069488_56074299_FR	OBD183-1285
78	Hg38_1_109359719_109366704_109611657_109614647_RF	OBD183-1289
79	Hg38_19_50732808_50735232_50961391_50964466_RR	OBD183-1293
80	Hg38_8_55800026_55805370_55942582_55947045_FF	OBD183-1297
81	Hg38_11_93115381_93124900_93228754_93237221_FR	OBD183-249
82	Hg38_X_70952076_70955538_71213839_71218089_FF	OBD183-1301
83	Hg38_11_93057516_93069988_93228754_93237221_FR	OBD183-1305
84	Hg38_5_76572657_76583168_76637173_76639966_RF	OBD183-157
85	Hg38_20_4763308_4769930_4885862_4890450_FF	OBD183-1309
86	Hg38_3_105278351_105281788_105425156_105431103_RF	OBD183-305
87	Hg38_19_42642158_42648993_42697457_42701566_RR	OBD183-049
88	Hg38_5_76400222_76402838_76572657_76583168_FR	OBD183-209
89	Hg38_2_223203554_223212132_223446116_223450606_FF	OBD183-317
90	Hg38_19_38895868_38902769_39089148_39091382_FR	OBD183-1313
91	Hg38_1_17044824_17050263_17192218_17198113_FF	OBD183-1317
92	Hg38_5_76420596_76423340_76572657_76583168_FR	OBD183-1321
93	Hg38_20_34791262_34795203_34932162_34933974_FF	OBD183-1325
94	Hg38_12_8119443_8124985_8341969_8343630_FF	OBD183-1329
95	Hg38_17_1287026_1289930_1411117_1412617_FR	OBD183-241
96	Hg38_1_109359719_109366704_109385998_109391476_RF	OBD183-1333
97	Hg38_1_187499122_187506399_187600952_187612332_FF	OBD183-1337
98	Hg38_11_72469497_72474813_72726299_72730494_FF	OBD183-109
99	Hg38_15_34813171_34816916_34974237_34980574_FF	OBD183-103

100	Hg38_12_32741504_32743146_32986666_32993216_RF	OBD183-009

表8.b7

51	AGGGAAAGAACTTGGTTTACTGCTGC	OBD183-035	GAGGTGGAGGTGGATTTGCTCGTATG
52	CAGAGGAAACCATCATTGTTAGTAGC	OBD183-147	CCCAGAACAGAGAAAGGGCATTAGGG
53	GGTGGTGTGGGTGTCATTAGTAAACT	OBD183-231	CTGACCCAGGAAAACCACCCTCATTC
54	ACTTCTTTCTCTCTCTGCTGACTGGG	OBD183-127	GGGCTGAAAAGTTTGGGAAGAACAGG
55	CTTGTCCTGTTCCCAGTTTCTGAGGG	OBD183-371	TTACAATCGCCTCAAAGTGCTCAAGC
56	GCCTCCCTCCTCATCACTTCCTC	OBD183-223	CCAGCCCAGCACTCTTGTAACTC
57	CCTCCACCCAACAGAAAATCCTCTTA	OBD183-227	AGACACAGCCAGCAGAGACAGGAAGT
58	ATAGCTTCTTACCGGTGCGCCACCG	OBD183-1259	TAGGCAGTACGATCGCACGCCCCAT
59	CCTAAGGTGAGTAATGTTGACTGGCT	OBD183-155	CACCTGTTGTAATCCTGGCACTCTGG
60	CCTGGGCTCAACCTTGCTGGACT	OBD183-093	GGGTGACCGAGTGAGATGATGTC
61	TCACCCCTCTGCTTCCAGGACAG	OBD183-203	CCTCCAGCGAGACCACTCCTAAA
62	GTGAACGATTGGTAAACCCAGTGTC	OBD183-1263	CTGTGAGCGACAAAAGCTTAAATGG
63	TTTACTGTCTTGAAGGAGGCAGGGTT	OBD183-199	GCACTGAAGAGAACACAGCAAAGCCG
64	GTCCTAAAAGAATCACAGTTATGCCA	OBD183-063	GCAGCGAAGAAGTTGAGAAGTGGACA
65	GAAATACGCGCCCATAACTTGGTGC	OBD183-1267	GAATACGGGTCGTAGCAATGTTCGT
66	CCCTGTGTGTTTCTTCCCTTGGCTGA	OBD183-311	CCCACAAAACTTGACTCTCTTCCATC
67	AGAGGTTCATCGTCTCCAGGTCATAG	OBD183-347	TTCACACAGAGAGGTTGCCTGGATGT
68	TGTCTGTCTGTCCCTGTGACCCCT	OBD183-299	CAACTCACCCAGAGACCCCTTGC
69	CCAGGTAGAAGTGGTTTGTTACACAT	OBD183-047	CTCCCTCAAATCCAGACACCTAAAGA
70	CTGACTATGATCTACATATTACAGG	OBD183-1271	CGGTACGTCTGCTTTGGTCAGCCTC
71	TAATGGCTCGTAAGATAGTGCAGCC	OBD183-1275	GCTGGTGATCACTCGATGACCTCGG

72	GTCTTGTGGCTGAAGTGCCCGTT	OBD183-267	CTCTCCTTCCAGCCTTCTTGGGC
73	CTCCCCATTGCAACTACGGGGATTC	OBD183-1279	TTGGAGAGCCAGCTGCGTTCGCTAA
74	GTTTTCCCTGTTGGTATGTAGCCTGG	OBD183-179	ACTACGAATGATAGGCTGGGCACAGT
75	CTTCAGTGTTTCCTTTCAGTGATGGC	OBD183-135	ATGACATTTCGGGCTGGGCACGG
76	TGTGAGGACAGTGTAGTATTAGCAA	OBD183-1283	ACGATAAGTCCCGAACTGGTTGTGA
77	CCTAACGAAAAGTGAACTTCATAAT	OBD183-1287	TCGAATGCAGTGATCTCCCAGGTGC
78	ACGTGCTGTCCCACGCACATGGTAG	OBD183-1291	GAATCAAAAATACTAGGTAACTAGA
79	ATTTGGACAAAATTGAATGGAGTCT	OBD183-1295	GGATTTGCGACGTTCTAAGCGTTGG
80	GATCAACCTTCACACCGATCTAGAA	OBD183-1299	TCCATGTGAATCGCCATCCAGGATC
81	GCCAATGAGCACCACATCACTATTTG	OBD183-251	GGATAAGCCACAAGGCAACTGGTCTG
82	GCAACTCTCCTCCTCAGCAGTCTGG	OBD183-1303	TCCTAGCAACCGGGGGCTGGGAATC
83	TCTATGGAAACTACAGGACTAACCT	OBD183-1307	TGTGACATGAGTCAAGATATTTGCT
84	GACTCATTTCAGTTGTTCAGAGGTCG	OBD183-159	GACCTCCAGCGAGACCACTCCTAAAT
85	CGGTAATCTATGCTCTAGGCATCTA	OBD183-1311	AGGACTCGTGTCAACGCGCAGGCTT
86	GCACAATGCCAGAAACATAGTAGACG	OBD183-307	GGGAAGAATGAATGACGCCGAAGGAC
87	GCCCAGGACATACCACACACCAA	OBD183-051	GCCCTCACTAAAGCCCACAGCGT
88	CCTCCAGCACACACACACTCAGT	OBD183-211	GACCTCCAGCGAGACCACTCCTA
89	TTAGAATGATAGTTACCTGAGACCAG	OBD183-319	CCCAGGAAAACCACCCTCATTCAAAC
90	TGCGAGACAATGCTACCTTACCGGT	OBD183-1315	CATTCCCTCATCACAATTGAACTAA
91	CGGAACTCGATCGGTTGAACTCTAT	OBD183-1319	AGGGCGCGAGACGTATTCCCCGGTT
92	CACGCCTGGTCTTCGAAGTTAGCAC	OBD183-1323	GCTGCTTGGGACCATAAAACCTCAT
93	ATCGAGCGGGCAATATGTACATATT	OBD183-1327	TCACCGCGGAACCCGACTATGCGAC
94	TACCTCTACAATGGATGC	OBD183-1331	TGGACGGCCTATTTACCGA

	GCAAAAA		GAGCTG
95	GGAAGGGCACCTCCACTC ATCCA	OBD183-243	CTGGCTGTCATCCAACCAC CACT
96	TTCGAAGGCTGGTTGAAT ACATGGC	OBD183-1335	AGAAGATTGAGGTGTCCTA AACTTA
97	CGCGGCCATAACACCTTA GCCGTCT	OBD183-1339	CGGGGGAATAAGTGACCTA TGCACC
98	TATGTGGACCTGATGGGC ACCCC	OBD183-1091	TGCTATTATCTGGTGACTG GACTGGG
99	TTTGAAAAGACCGTCGGG TGCGG	OBD183-1031	TGAAGTGGCATCTCTCTCC CGCC
100	CACAAGAAAATAAGTCTC CCAACCTG	OBD183-011	TGACTAAAATGTTATGTGG TGCGTGA

表8.b8

101	Hg38_8_30141432_30150688_30174555_30176773_FR	DCTN6	55692.9615
102	Hg38_12_8705594_8710071_8956666_8971971_RR	KLRG1	58603.68516
103	Hg38_4_146421995_146434783_146576248_146581867_RR	POU4F2	49274.49382
104	Hg38_20_31418840_31431664_31617243_31621976_RR	DEFB123	59083.38395
105	Hg38_5_76380998_76384783_76572657_76583168_FR	IQGAP2	54851.10909
106	Hg38_1_150618429_150622168_150754333_150760976_FF	CTSS	64127.37577
107	Hg38_8_47283075_47288879_47486518_47496230_RF	PRKDC	57314.15933
108	Hg38_8_47250090_47257109_47283075_47288879_FR	PRKDC	50064.97609
109	Hg38_20_46117565_46123196_46312844_46316630_FF	CD40	59459.05109
110	Hg38_11_59836753_59842056_59873751_59881156_FF	TCN1	53784.52324
111	Hg38_17_75812204_75816321_75950756_75954014_FF	UNC13D	60099.77655
112	Hg38_19_51712234_51719472_51826457_51831790_RF	FPR1	65123.51909
113	Hg38_4_146576248_146581867_146648355_146653240_RF	POU4F2	57957.39948
114	Hg38_4_151824476_151828586_151939544_151951330_RF	FBXW7	56112.04376
115	Hg38_6_136360365_136366092_136470425_136479842_RF	MAP3K5	56877.63053
116	Hg38_3_10094056_10097375_10166863_10171451_RR	BRK1	57233.48463
117	Hg38_3_30527627_30532055_30652453_30660274_FR	TGFBR2	60126.87115
118	Hg38_2_74566692_74568044_74592023_74597081_FR	LOXL3	57121.13507
119	Hg38_7_29859712_29867302_30016613_30019069_RR	WIPF3	60565.65705
120	Hg38_10_26740932_26742560_26959699_26967983_RR	ABI1	59888.31329
121	Hg38_14_94590755_94595046_94660913_94670434_FF	SERPINA3	51602.36278
122	Hg38_2_68146585_68154467_68359452_68365969_RR	PLEK	60673.0528
123	Hg38_19_29696989_29701188_29727590_29730932_FF	PLEKHF1	52817.5742
124	Hg38_10_67996987_68002098_68133244_68143089_FR	SIRT1	65629.85778
125	Hg38_3_172498977_172504898_172612668_172616740_RR	TNFSF10	58221.03427
126	Hg38_11_66660876_66666332_66795521_66799004_FR	SPTBN2	57312.99458
127	Hg38_1_11722709_11729599_11945928_11948525_FF	NPPA	56411.9319

128	Hg38_12_69485433_69494790_69582845_69586465_FF	CCT2	57383.41886
129	Hg38_6_92733887_92741450_92775882_92789490_FF	BACH2	59527.59812
130	Hg38_1_64986326_64990105_65229466_65234378_RF	JAK1	63746.32604
131	Hg38_9_83554932_83574455_83691585_83699524_RF	UBQLN1	61891.82036
132	Hg38_19_50878674_50885130_50961391_50964466_FR	KLK5	62845.36841
133	Hg38_12_8849992_8853563_8956666_8971971_RR	KLRG1	62618.39393
134	Hg38_13_27943964_27948276_28172854_28181281_RR	FLT3	59041.48761
135	Hg38_5_31659980_31666153_31910749_31916612_RR	DROSHA	59449.15028
136	Hg38_3_2897600_2903984_3121830_3126033_FF	IL5RA	57800.99656
137	Hg38_3_170416234_170418115_170607532_170615844_RR	SKIL	63920.31015
138	Hg38_18_55916670_55920381_56075450_56084543_FR	TCF4	64853.46274
139	Hg38_5_76572657_76583168_76698020_76702533_RF	IQGAP2	57619.86752
140	Hg38_12_8913809_8922295_8956666_8971971_RR	KLRG1	61465.60317
141	Hg38_5_74537627_74543794_74656276_74660840_RF	HEXB	62777.03507
142	Hg38_7_37143709_37150477_37190622_37192292_FF	ELMO1	58975.8291
143	Hg38_9_131690419_131696896_131751071_131753768_FR	RAPGEF1	56194.47425
144	Hg38_6_26425345_26428181_26579344_26586907_RR	BTN1A1	61428.23451
145	Hg38_22_28560976_28565084_28753634_28758538_FF	TTC28	62272.87774
146	Hg38_3_187141583_187148120_187202075_187212711_RF	MASP1	68339.73699
147	Hg38_1_193519461_193528788_193673926_193687017_FR	CDC73	59191.22135
148	Hg38_4_154421614_154428471_154600623_154609665_RF	FGA	60226.98349
149	Hg38_16_75703703_75711017_75770470_75776868_RF	KARS	64545.47619
150	Hg38_10_101411213_101417434_101602840_101605496_RF	POLL	57537.34386

表8.c1

101	1.189894605	0.000267757	0.000173585	免疫
102	1.189574098	0.000241232	0.00014759	免疫
103	1.189341371	0.001503703	0.001455054	免疫
104	1.189054381	0.000197577	9.1207E-05	免疫
105	1.188958993	0.000349576	0.000274341	免疫
106	1.188853014	0.000190318	2.07508E-05	免疫
107	1.188487932	0.000296454	0.000221421	免疫
108	1.18834688	0.000953713	0.000903222	免疫
109	1.187993343	0.0002561	0.000160439	免疫
110	1.187956606	0.000386774	0.00031852	免疫
111	1.187782434	0.000281289	0.000199385	免疫
112	1.187618829	0.000190318	1.95822E-05	免疫
113	1.187303761	0.000374876	0.000305414	免疫
114	1.187272836	0.000270662	0.000183891	免疫

115	1.18719651	0.000309944	0.000234281	免疫
116	1.186853935	0.000270451	0.000180566	免疫
117	1.186778182	0.000190318	4.44105E-05	免疫
118	1.186672454	0.000211794	0.000108212	免疫
119	1.186560703	0.000270662	0.000181532	免疫
120	1.186285074	0.000197577	9.13432E-05	免疫
121	1.186276015	0.000899575	0.000844013	免疫
122	1.186160032	0.000270451	0.000179402	免疫
123	1.186098691	0.00093254	0.000880427	免疫
124	1.185853274	0.000190318	3.99447E-05	免疫
125	1.18551634	0.000349576	0.000274843	免疫
126	1.184920048	0.000436269	0.000370491	免疫
127	1.184745946	0.000561947	0.0005041	免疫
128	1.184546219	0.000320976	0.000244508	免疫
129	1.1845323	0.000327812	0.000252608	免疫
130	1.184035394	0.000190318	5.4065E-05	免疫
131	1.183997916	0.000291919	0.000207777	免疫
132	1.183983245	0.000190318	5.26589E-05	免疫
133	1.183850689	0.000197577	9.04588E-05	免疫
134	1.183834593	0.000269965	0.000177859	免疫
135	1.183509166	0.000374731	0.000303169	免疫
136	1.183397205	0.000349576	0.000273026	免疫
137	1.183347956	0.000190318	9.84044E-06	免疫
138	1.183297504	0.000191193	8.22707E-05	免疫
139	1.182991993	0.000423881	0.000355312	免疫
140	1.182982506	0.000294063	0.000210766	免疫
141	1.182858758	0.000191193	8.17229E-05	免疫
142	1.18268215	0.003600958	0.003569185	免疫
143	1.182551034	0.00098659	0.000937261	免疫
144	1.182494488	0.000269965	0.000177167	免疫
145	1.182491457	0.000294063	0.000211778	免疫
146	1.182489201	0.000190318	9.42584E-06	免疫
147	1.182342728	0.000456106	0.000393056	免疫
148	1.182263907	0.000459663	0.000397474	免疫
149	1.182179987	0.000190318	6.46828E-05	免疫
150	1.181917431	0.001090883	0.001042756	免疫

表8.c2

101	GTAAGAAGTGAGTGGGAATTAGACCAGCTCGATCTCCTGACCTTAAGC GATCTCCCCGCC
102	ACTGATATACCTATCCTTATTAAGGCACTCGAACTCCTGACCTCACGTA ATTCTCCCACC
103	GATACAATTTCTGTTTAAGAGAGTGTAATCGAACTCCTGACCTCACTCA GGTGATCCCCC
104	ATATTGGAAATTATTTTACTCTAGACTTTCGAACTCCTTGACCTCAGGT GATCTACCTGC
105	ACTTTTCTTTTATGCCAATTAGAATAAGTCGAACTCCTGACTTCAGGAA ATCTGCCCGTC
106	TTTTTCATGGGTTTTTGTTTTGTTTATTTCGAACTTCTGACCTCATGATC AACCCATCTT
107	TTCCCTGACTGGAACCTCTAGTACAATGTCGAACTCCTGATCTCAGGTG ATTTACTTGCG
108	AACCCCTTTTATTTCCTATACATCTATTTCGAACTCCTGATCTCAGGTG ATTTACTTGCG
109	GGCTTCTTCTCCAATGTGTCATCTGCTTTCGAACTCCTGACCTCAATGT GACTCACCTGC
110	GGATATTTGGATGTAATGAGGAGAAGCATCGATCTCCTGACCTCATGA CGTGTCCGCCTT
111	TATCTCTGAGATGAGAATGGAAAATAAATCGAATTCCTGACCTCTTGA TCTGTCTGCCTT
112	ATGGTCTTCCTCAACAGTTTTTCTTTCATCGAACTCGTGACCTCAAGTG GTCTCCCTGCC
113	AACTGTTGGGGCTCTAATTTATATCTGATCGAACTCCTGACCTCACTCA GGTGATCCCCC
114	AAGACAGATCTGGTTTTTTTTTGAAATGTCGATTTCCTGACCTTGTGAT CCAATGCCAGG
115	TAAAACTGTAAAACACTGATGCCAGAAATCGAACTCCTGACTTCGGTG ATCTACCTGCCG
116	TAGGCAGACTTACCTACCACAGATACAGTCGAACTCCTGACCTCATGT GATTTGGCCGCT
117	TATTGTCTTTCTTCAGATGTGGGCTACATCGAACTCCTGACCTCAGGTG AATAACCTGCC
118	AATTTGAAAAGTTACACAACATTTATAGTCGAACTACTGACCTAAGTG ATCCACCCACCT
119	TCAGCTGGGGTTTCCCAAGCCCTTGAGATCGAACTCCTGACCTCAGAA GATTTGCCTGCC
120	ATAGGTAAAAAAGGAACTGAAGGTAAAATCGAACTCCTGACCTCAAG AGATCTGTCCTCC
121	TGATTCAAGCTTGATTCTGGAGCTTGAATCGAACTCCTGATCTTAGGTG ATCCATCCACC
122	TTAGTTCTTAGATGCTTTGTCATATGCTTCGAACTCCCGACCTCCAGTG GAAGTTCACAC
123	TGGCTTTTTAGAAAAACATTTATTGTAATCGAACTCCTGACCACAAATT

	ATCCACCAGAC
124	AATGCAAATAATCTCAAGGTCTACAGTTTCGAACTCCTGACCTTATGCAATCCACTTGCC
125	ATTCATGTTAGAACTACATGTAGACATTTCGATCTCGTGACCTCTTGATCCTCCCACCTC
126	GCCAAATCTTGGTCTTGATCTGTGCCAATCGAACTCCTGACCTCAGGTAATTAGCCCACC
127	AGGCACTGTGCCACTCATTTAGGACCCATCGAACTCCTGACCTCAGTGGATCATCAGACT
128	GCTTCTAGATTTTTGTTTTGTTTTGTTTTCGAACTCCTGACCTCAGTTCATCCGCCTACC
129	TTTTATTTCAATGATTGTATATTATTAGTCGAACTCCTGACTTTAAGTAATCTGCCCACC
130	GCCTTAACAACAACAAAATGGAGAGTTATCGAACTCCTGACTTCAGGTGACTCACCCACC
131	TTTTTATTTTTTTGTAGACAGGCTGGTCTCGAGGTATCACAAGTGAATGCTGCAAAATGA
132	GTTAGCCAGACATCCTTGATAGATATTATCGAACTCCTGACCCTAGGTGATCCTCCTGCT
133	AAGAGGAACTAACTAGTCACAAAGGCCATCGAACTCCTGACCTCACGTAATTCTCCCACC
134	TTCTGCAGAAAAAGTGTCAACAATGTAGTCGAGACCAGCCTGAGGATCATAACAAAATCG
135	ATCCTCTGAGCTTTTGGTTCTTCTCAATTCGAACTCCTGACCTCAAGCTATCCATCTGCC
136	TGGATTAATAGATTAGGTCAGTAAAGAATCGAACTCCTGACCTCGTGTTCCCCAGGCCTC
137	CTCTTATGCCTCCATTAGAATTTGACATTCGATCTCCTGACTTCGTGATCTGTCCACCTT
138	AAATGTAAACTGAGTGTCTATTGTACACTCGAGACCAGCCTGAACAATATAGTGAGACCC
139	ATCATAGCTACTGAAGATGTAGGCATTTTCGAACTCCTGACTTCAGGAAATCTGCCCGTC
140	TTTGTCATTTCAGGGATTTGTGTGTGCTTCGAACTCCTGACCTCACGTAATTCTCCCACC
141	TGATCCCTGGGGATACACAAATTGCCATTCGAACTCCTGACCTCAGTCAATCTGCCCACC
142	AAAAAATTGTTAACTACATGATGGAAAATCGATCTCTTGACTTCATGATCCACCTGCCTT
143	CTATAATAACATTAACAGCTGAAATTTATCGAACTCCTGACCTCAGGTTACCCCCTGCCT
144	GCAATTTTCTTATAGTGCTTTGAGAACATCGAACTCCTAACCTCAAGTAATCCACACACT
145	CTGCCAAAAGTGAAGATCCCTACTATATTCGAACTCCTGACCTCAGGTAATCTATCCGCC
146	TGTCCCTTGCATGGGACACATTGTTTCATCGAACTCCTGACCTTTGGTC

	ATCCACCTGCC
147	TTAGGCTTCTCTTCAGAGTTATCTCTGTTCGATCTCTTGACCTCGTACTCTGCCTGCCTT
148	AAACACAGTCCATCCATTTCCAGACCCATCGAACTCCTGACCTCAAAAAATCCACCACCT
149	CTTAACAAACCAATGATAAGTAATGAGATCGAACTCCTGGCCTCAGATGATACATCTGCT
150	TCAAGTTCATCTAGTGCAGCTCTTTTATTCGAACTCCTGACCTCAAGAAATCTACCTGCC

表8.c3

101	8	30150657	30150686	30174557	30174586
102	12	8705596	8705625	8956668	8956697
103	4	146421997	146422026	146576250	146576279
104	20	31418842	31418871	31617245	31617274
105	5	76384752	76384781	76572659	76572688
106	1	150622137	150622166	150760945	150760974
107	8	47283077	47283106	47496199	47496228
108	8	47257078	47257107	47283077	47283106
109	20	46123165	46123194	46316599	46316628
110	11	59842025	59842054	59881125	59881154
111	17	75816290	75816319	75953983	75954012
112	19	51712236	51712265	51831759	51831788
113	4	146576250	146576279	146653209	146653238
114	4	151824478	151824507	151951299	151951328
115	6	136360367	136360396	136479811	136479840
116	3	10094058	10094087	10166865	10166894
117	3	30532024	30532053	30652455	30652484
118	2	74568013	74568042	74592025	74592054
119	7	29859714	29859743	30016615	30016644
120	10	26740934	26740963	26959701	26959730
121	14	94595015	94595044	94670403	94670432
122	2	68146587	68146616	68359454	68359483
123	19	29701157	29701186	29730901	29730930
124	10	68002067	68002096	68133246	68133275
125	3	172498979	172499008	172612670	172612699
126	11	66666301	66666330	66795523	66795552
127	1	11729568	11729597	11948494	11948523
128	12	69494759	69494788	69586434	69586463
129	6	92741419	92741448	92789459	92789488
130	1	64986328	64986357	65234347	65234376
131	9	83554934	83554963	83699493	83699522
132	19	50885099	50885128	50961393	50961422

133	12	8849994	8850023	8956668	8956697
134	13	27943966	27943995	28172856	28172885
135	5	31659982	31660011	31910751	31910780
136	3	2903953	2903982	3126002	3126031
137	3	170416236	170416265	170607534	170607563
138	18	55920350	55920379	56075452	56075481
139	5	76572659	76572688	76702502	76702531
140	12	8913811	8913840	8956668	8956697
141	5	74537629	74537658	74660809	74660838
142	7	37150446	37150475	37192261	37192290
143	9	131696865	131696894	131751073	131751102
144	6	26425347	26425376	26579346	26579375
145	22	28565053	28565082	28758507	28758536
146	3	187141585	187141614	187212680	187212709
147	1	193528757	193528786	193673928	193673957
148	4	154421616	154421645	154609634	154609663
149	16	75703705	75703734	75776837	75776866
150	10	101411215	101411244	101605465	101605494

表8.c4

101	8	30146687	30150686	30174557	30178556	NA
102	12	8705596	8709595	8956668	8960667	NA
103	4	146421997	146425996	146576250	146580249	NA
104	20	31418842	31422841	31617245	31621244	1
105	5	76380782	76384781	76572659	76576658	NA
106	1	150618167	150622166	150756975	150760974	1
107	8	47283077	47287076	47492229	47496228	NA
108	8	47253108	47257107	47283077	47287076	NA
109	20	46119195	46123194	46312629	46316628	NA
110	11	59838055	59842054	59877155	59881154	NA
111	17	75812320	75816319	75950013	75954012	NA
112	19	51712236	51716235	51827789	51831788	1
113	4	146576250	146580249	146649239	146653238	NA
114	4	151824478	151828477	151947329	151951328	NA
115	6	136360367	136364366	136475841	136479840	NA
116	3	10094058	10098057	10166865	10170864	NA
117	3	30528054	30532053	30652455	30656454	1
118	2	74564043	74568042	74592025	74596024	NA
119	7	29859714	29863713	30016615	30020614	NA
120	10	26740934	26744933	26959701	26963700	1
121	14	94591045	94595044	94666433	94670432	NA
122	2	68146587	68150586	68359454	68363453	NA
123	19	29697187	29701186	29726931	29730930	NA

124	10	67998097	68002096	68133246	68137245	1
125	3	172498979	172502978	172612670	172616669	NA
126	11	66662331	66666330	66795523	66799522	NA
127	1	11725598	11729597	11944524	11948523	NA
128	12	69490789	69494788	69582464	69586463	NA
129	6	92737449	92741448	92785489	92789488	NA
130	1	64986328	64990327	65230377	65234376	1
131	9	83554934	83558933	83695523	83699522	NA
132	19	50881129	50885128	50961393	50965392	1
133	12	8849994	8853993	8956668	8960667	1
134	13	27943966	27947965	28172856	28176855	NA
135	5	31659982	31663981	31910751	31914750	NA
136	3	2899983	2903982	3122032	3126031	NA
137	3	170416236	170420235	170607534	170611533	1
138	18	55916380	55920379	56075452	56079451	1
139	5	76572659	76576658	76698532	76702531	NA
140	12	8913811	8917810	8956668	8960667	NA
141	5	74537629	74541628	74656839	74660838	1
142	7	37146476	37150475	37188291	37192290	NA
143	9	131692895	131696894	131751073	131755072	NA
144	6	26425347	26429346	26579346	26583345	NA
145	22	28561083	28565082	28754537	28758536	NA
146	3	187141585	187145584	187208710	187212709	1
147	1	193524787	193528786	193673928	193677927	NA
148	4	154421616	154425615	154605664	154609663	NA
149	16	75703705	75707704	75772867	75776866	1
150	10	101411215	101415214	101601495	101605494	NA

表8.c5

101	NA			
102	NA			
103	NA			
104	11.2653241	11.0155094	2461.503536	2070.135374
105	NA			
106	8.743406573	8.493836218	428.5757984	360.4951945
107	NA			
108	NA			
109	NA			
110	NA			
111	NA			
112	9.549135201	9.301063329	749.1626689	630.8107034
113	NA			

114	NA			
115	NA			
116	NA			
117	12.44731269	12.20026238	5584.888214	4705.92424
118	NA			
119	NA			
120	11.636792	11.39034125	3184.369416	2684.320562
121	NA			
122	NA			
123	NA			
124	9.006228668	8.760303152	514.215279	433.6247075
125	NA			
126	NA			
127	NA			
128	NA			
129	NA			
130	10.30481335	10.06110114	1264.905023	1068.30001
131	NA			
132	10.55811799	10.31446932	1507.683603	1273.399442
133	11.99043762	11.74695049	4068.940936	3437.038957
134	NA			
135	NA			
136	NA			
137	11.89228799	11.64941363	3801.328495	3212.350581
138	10.4161041	10.17329126	1366.343114	1154.691115
139	NA			
140	NA			
141	11.94554115	11.70326334	3944.266053	3334.519889
142	NA			
143	NA			
144	NA			
145	NA			
146	9.083400882	8.841573873	542.4705027	458.753029
147	NA			
148	NA			
149	10.70568414	10.46423444	1670.059908	1412.695127
150	NA			

表8.c6

101	Hg38_8_30141432_30150688_30174555_30176773_FR	OBD183-121

102	Hg38_12_8705594_8710071_8956666_8971971_RR	OBD183-1341
103	Hg38_4_146421995_146434783_146576248_146581867_RR	OBD183-017
104	Hg38_20_31418840_31431664_31617243_31621976_RR	OBD183-213
105	Hg38_5_76380998_76384783_76572657_76583168_FR	OBD183-169
106	Hg38_1_150618429_150622168_150754333_150760976_FF	OBD183-1345
107	Hg38_8_47283075_47288879_47486518_47496230_RF	OBD183-361
108	Hg38_8_47250090_47257109_47283075_47288879_FR	OBD183-1349
109	Hg38_20_46117565_46123196_46312844_46316630_FF	OBD183-393
110	Hg38_11_59836753_59842056_59873751_59881156_FF	OBD183-173
111	Hg38_17_75812204_75816321_75950756_75954014_FF	OBD183-333
112	Hg38_19_51712234_51719472_51826457_51831790_RF	OBD183-365
113	Hg38_4_146576248_146581867_146648355_146653240_RF	OBD183-1353
114	Hg38_4_151824476_151828586_151939544_151951330_RF	OBD183-1357
115	Hg38_6_136360365_136366092_136470425_136479842_RF	OBD183-1361
116	Hg38_3_10094056_10097375_10166863_10171451_RR	OBD183-373
117	Hg38_3_30527627_30532055_30652453_30660274_FR	OBD183-005
118	Hg38_2_74566692_74568044_74592023_74597081_FR	OBD183-313
119	Hg38_7_29859712_29867302_30016613_30019069_RR	OBD183-1365
120	Hg38_10_26740932_26742560_26959699_26967983_RR	OBD183-1369
121	Hg38_14_94590755_94595046_94660913_94670434_FF	OBD183-181
122	Hg38_2_68146585_68154467_68359452_68365969_RR	OBD183-021
123	Hg38_19_29696989_29701188_29727590_29730932_FF	OBD183-1373
124	Hg38_10_67996987_68002098_68133244_68143089_FR	OBD183-285
125	Hg38_3_172498977_172504898_172612668_172616740_RR	OBD183-1377
126	Hg38_11_66660876_66666332_66795521_66799004_FR	OBD183-149
127	Hg38_1_11722709_11729599_11945928_11948525_FF	OBD183-325
128	Hg38_12_69485433_69494790_69582845_69586465_FF	OBD183-161
129	Hg38_6_92733887_92741450_92775882_92789490_FF	OBD183-037
130	Hg38_1_64986326_64990105_65229466_65234378_RF	OBD183-377
131	Hg38_9_83554932_83574455_83691585_83699524_RF	OBD183-1381
132	Hg38_19_50878674_50885130_50961391_50964466_FR	OBD183-289
133	Hg38_12_8849992_8853563_8956666_8971971_RR	OBD183-337
134	Hg38_13_27943964_27948276_28172854_28181281_RR	OBD183-193
135	Hg38_5_31659980_31666153_31910749_31916612_RR	OBD183-001
136	Hg38_3_2897600_2903984_3121830_3126033_FF	OBD183-1385
137	Hg38_3_170416234_170418115_170607532_170615844_RR	OBD183-1389
138	Hg38_18_55916670_55920381_56075450_56084543_FR	OBD183-1393
139	Hg38_5_76572657_76583168_76698020_76702533_RF	OBD183-329
140	Hg38_12_8913809_8922295_8956666_8971971_RR	OBD183-357
141	Hg38_5_74537627_74543794_74656276_74660840_RF	OBD183-277

142	Hg38_7_37143709_37150477_37190622_37192292_FF	OBD183-257
143	Hg38_9_131690419_131696896_131751071_131753768_FR	OBD183-1397
144	Hg38_6_26425345_26428181_26579344_26586907_RR	OBD183-097
145	Hg38_22_28560976_28565084_28753634_28758538_FF	OBD183-165
146	Hg38_3_187141583_187148120_187202075_187212711_RF	OBD183-085
147	Hg38_1_193519461_193528788_193673926_193687017_FR	OBD183-217
148	Hg38_4_154421614_154428471_154600623_154609665_RF	OBD183-105
149	Hg38_16_75703703_75711017_75770470_75776868_RF	OBD183-073
150	Hg38_10_101411213_101417434_101602840_101605496_RF	OBD183-081

表8.c7

101	GGGTGTTGCGAGCAGCCTGAATG	OBD183-123	GGGCGATAATGCTGGAGACACAG
102	AGACGCCGCTTGCGATTTCGACCAA	OBD183-1343	CAGCGGGAACGGCTGTGCAGTCACA
103	GACTTTGTATGCTTGGCTCTTTTCAA	OBD183-019	CTGCGTGAAGATTGGGAAAATACTCT
104	TGGACAGAGCACCTCCTGATAGC	OBD183-215	CAGTGAGATGATGGGCACCAGGG
105	CTCAGTAGTGGCTCTCCTTCCCC	OBD183-171	CCTCCAGCGAGACCACTCCTAAA
106	CCGCTGTGTAGCGGACAGTCTGAGC	OBD183-1347	TACCCTCTCAAGCACGAGATCTACA
107	CTTCTTGCTTTTCAATCAGGATGCCT	OBD183-363	CCTCCATCTCTTGCCTTCTCCTTAGG
108	GGGCGGGGTAGAAGCCGTCGCTTCG	OBD183-1351	GGTCCATGCGGGGGGTAAAACCCTG
109	TTTCTGATACCATCTGCGAGCCCTGC	OBD183-395	AGTCAGGGAAATAACTCACTGGGAAG
110	CAAGGTGGTCCCCGAGTTGCCAT	OBD183-175	GAGGTGGAGGTGGATTTGCTCGT
111	CCAAGATACTGCCCTGGGTCTCC	OBD183-335	CCCCACCCTGACCAACTGAATCA
112	TCTGGCTTTTGCCTGTCCTTCTGATG	OBD183-367	CCACTCTTGACCTCAGTTTCCCTGTA
113	TTTAAGAGGTCCGGGCAGCATACGC	OBD183-1355	TGTGGTTTATGTGCTACTGTGGAGA
114	GCGGCACCCATCTCTCTTCATTCGC	OBD183-1359	GGGTTTGTGAATCTAGGAGCACAAA
115	TTATTGTGAACGTTCGAAAGCACAA	OBD183-1363	AAAGCGGCGCACTTCAGGCATAAAA
116	GGCAGAATAGTCTCATCCAGCCC	OBD183-375	TGAAGCCAGGTCCAGGAGCAGTG
117	GGTTTCACAGTATGGAT	OBD183-007	GCCTGGGTATTCTACTGTCA

	TTGGTGTTC		GAGATT
118	CATTTACGGGAGTGGTG GACAACACA	OBD183-315	TTAGGTCTGGGCTCAGTGAC TTATGC
119	GGATGGATTTTTGACAA TCCCCGAT	OBD183-1367	AATGCTAGGGAGCAATAAA CATAAC
120	GTCCAAGCTATGGTCCC TTAACAGC	OBD183-1371	CATCCACAGTGAATTGATCC GAAGG
121	GCCAAAACAAAGTGTCC TCATCTGGG	OBD183-183	AAGGGTATGGGAAAACAGG CATCTGC
122	GAGTCTCACTTAGAACC TGCTACTGT	OBD183-023	CCCAGAACAGAGAAAGGGC ATTAGGG
123	GGGTCGGCATCGGAAGC TTGAAATT	OBD183-1375	GAGAAGCGGGGAGTTACCG GTCAAT
124	AACACCAACTCCTTCCC CATTCTAAT	OBD183-287	GGACCCACAAAACTTGACT CTCTTCC
125	ACGAGCATACAGACAAT CGTCGTCG	OBD183-1379	ATACTCTCCAGCCGACTGA AAACGG
126	ATGGGAACTCCAGACAC CAATGGCTG	OBD183-151	AAACCTACCGCTTTGACCTC ACAGAA
127	TCTCACCCCTACTCCCA CCTCAC	OBD183-327	GAAGACACAGCAGAGGACA CAGC
128	CCAGAGTGAGTCAAGGA GGCACG	OBD183-163	TTTCAGGCGTCCCTTTCCCT TGC
129	CTGACCCATTTTCCCTCT CCTGTGAT	OBD183-039	GCAGGAACAACAGAAAGTA GAAACAG
130	AGGGATGGTGGCTCAAT GCTGCC	OBD183-379	CCTGGAGAAAACTTGCTGC CGAG
131	GAGAAAAAACCACTGG AAATGGCAG	OBD183-1383	TACCAGCTCGACATTCGCGT GCCCC
132	TCCTGGACAGTCAGCAA ACCTGC	OBD183-291	CAGCCAGCAGAGACAGGAA GTGC
133	GTCAGAGGCAAGGAGG AAGGACC	OBD183-339	GCGGAACTTCAAAGGTCAG GTGC
134	TCAGACAGCCTTCCCAA GCCCTG	OBD183-195	ACACACTTTCACTCCCTGTC CCC
135	TCTGTAACACCAAGTGG AAAGCAGTG	OBD183-003	TAAAAGCAGGAACTGGCTG GGCGTG
136	CGGCCAACCGTTCATTG GAGCAATA	OBD183-1387	GCTAGGCAACAGCTGGATC TACAGA
137	AGTGGATGGATGAGCGC CACATGTA	OBD183-1391	AGCGCGATTGTCGGGCACA TTAGAT
138	TTGCCTAATGGGCCTCT TTGGTCAT	OBD183-1395	TAAGTCACAGTGACAGCTT CTACTT
139	CCTTAGGATTTTCTCAA CAAGCCATT	OBD183-331	CCTCCAGCGAGACCACTCCT AAATAA

140	CACCTCAACTCCAAGAAGGCGGG	OBD183-359	GCGGAACTTCAAAGGTCAGGTGC
141	CCAGATGCTCCCAATCCCAGTCA	OBD183-279	TAGTGGATTCCTGGCTGGGCACG
142	AACCCAACCGTCCAGAGTCCACG	OBD183-259	CCTGTGGAAGGTGGGACTATGAG
143	GGCTAGGTCGTCGTGCGCTCCGTCT	OBD183-1399	GTACGCAGGGGACCAGTCGATAGCT
144	ACCCTGTAGTCCTGGGCTCAAGAGAT	OBD183-099	TGCCCAATAAAAGAAACCATCAAGGG
145	GGGAGGCACAGGAAGGGAAGTTG	OBD183-167	GCTGCCTAAGGGTCTCTTTGGTC
146	GAGCAGAGTGAGGACTGGAATCC	OBD183-089	CCTGGGCTCAACCTTGCTGGACT
147	GTATCAGAGGTAATCAAGTAACCAAG	OBD183-219	ATTACCTCATTTATGCCTCACACCAT
148	GCTACGGTTCACAAGGTGCTTAGAAA	OBD183-1051	GGGAAGGAAAAGAGGGCAAGTCC
149	CCTGACCCACCAAGACTGAACCA	OBD183-077	GTGCCACCCTGGGCTGGATGATT
150	GCCTCTGGTGCCCTTTTGGGTTG	OBD183-085	GAGCAGAGTGAGGACTGGAATCC

表8.c8

151	Hg38_19_7668688_7670794_7738421_7741267_FR	CD209	68536.88075
152	Hg38_2_223262711_223267419_223446116_223450606_FF	AP1S3	64453.33777
153	Hg38_22_25253412_25258650_25482038_25486782_FR	LRP5L	62341.8788
154	Hg38_2_68188547_68193452_68359452_68365969_FR	PLEK	61203.76528
155	Hg38_2_68188547_68193452_68359452_68365969_RR	PLEK	71929.28683
156	Hg38_1_229073105_229082983_229284318_229294264_FR	RAB4A	64881.66358
157	Hg38_9_83554932_83574455_83691585_83699524_FF	UBQLN1	63600.61525
158	Hg38_22_25264413_25271942_25482038_25486782_RR	LRP5L	59608.34156
159	Hg38_1_99618648_99629858_99759006_99763111_RF	AGL	62129.00664
160	Hg38_18_55921930_55924182_56075450_56084543_FR	TCF4	64843.45614
161	Hg38_17_74584319_74586652_74671518_74675232_FF	CD300E	62299.89556
162	Hg38_1_109359719_109366704_109566782_109570200_RF	PSMA5	61137.98638
163	Hg38_1_27834284_27836433_28029814_28033207_RR	SMPDL3B	56542.18928
164	Hg38_5_76572657_76583168_76654480_76657126_RF	IQGAP2	54976.37824
165	Hg38_4_109733192_109734599_109791099_109801176_RF	CFI	62515.30852
166	Hg38_1_70054091_70068840_70318902_70321099_RR	LRRC7	66114.54819
167	Hg38_1_229261740_229263861_229284318_229294264_RR	RAB4A	66865.24279
168	Hg38_14_60530277_60542106_60741580_60746311_FF	SIX1	66165.21408
169	Hg38_11_93198707_93202947_93228754_93237221_FR	MTNR1B	37933.34162

170	Hg38_12_34029969_34035740_34074510_34080992_RF	PKP2	55267.19406
171	Hg38_3_192827117_192831683_192941417_192949607_FR	FGF12	62148.98347
172	Hg38_1_112145907_112153217_112230261_112242505_FR	WNT2B	7382.521556
173	Hg38_5_30065209_30068365_30144494_30156052_FR	DROSHA	29882.79129
174	Hg38_4_177311798_177314753_177426344_177434196_FF	AGA	22347.51822
175	Hg38_8_8573974_8579178_8694304_8696852_RR	MFHAS1	35948.26439
176	Hg38_19_15474784_15476319_15596057_15603844_RR	PGLYRP2	31090.69115
177	Hg38_3_57432399_57444809_57467336_57470926_FR	PDE12	26664.51749
178	Hg38_11_9685853_9690988_9860564_9866955_RF	SWAP70	36242.64198
179	Hg38_12_8803939_8810628_8956666_8971971_FR	KLRG1	36737.01892
180	Hg38_12_8725011_8729420_8956666_8971971_RR	KLRG1	33145.41837
181	Hg38_12_8729585_8733910_8956666_8971971_FR	KLRG1	35411.42703
182	Hg38_1_150313909_150318375_150517096_150519652_FF	ECM1	40526.16555
183	Hg38_8_129814184_129820472_129899083_129904705_RR	FAM49B	40190.71701
184	Hg38_4_70364253_70375913_70475197_70476584_FF	MUC7	39883.20945
185	Hg38_1_219996896_220002127_220133227_220135485_RR	EPRS	38850.69788
186	Hg38_2_85732323_85740233_85782915_85784976_RR	GNLY	41138.40803
187	Hg38_22_25482038_25486782_25521454_25528069_RF	LRP5L	40073.65698
188	Hg38_12_8895119_8900342_8956666_8971971_RR	KLRG1	39969.28595
189	Hg38_5_30065209_30068365_30144494_30156052_RR	DROSHA	41444.33551
190	Hg38_12_8956666_8971971_9003019_9010419_RF	KLRG1	36856.30955
191	Hg38_5_30097465_30100060_30144494_30156052_FR	DROSHA	40796.38683
192	Hg38_11_9564044_9569915_9685853_9690988_FR	SWAP70	39581.10269
193	Hg38_19_42510307_42515066_42619854_42637441_RF	CEACAM1	41746.83799
194	Hg38_3_158515927_158528644_158576893_158580745_FR	MLF1	40688.15116
195	Hg38_12_8895119_8900342_8956666_8971971_FR	KLRG1	41167.33264
196	Hg38_3_138618464_138621485_138761567_138764562_FF	PIK3CB	38579.83331
197	Hg38_7_29905017_29911792_30016613_30019069_RR	WIPF3	43551.56674
198	Hg38_3_48672113_48676996_48843153_48846436_FR	IP6K2	41154.59394
199	Hg38_1_193547269_193555526_193673926_193687017_FR	CDC73	42763.73552
200	Hg38_5_30144494_30156052_30253195_30260049_RF	DROSHA	44527.21156

表8.d1

151	1.181787026	0.000190318	2.71916E-05	免疫
152	1.181714874	0.000225914	0.000121603	免疫
153	1.181692991	0.000241232	0.000147415	免疫
154	1.181539128	0.000251226	0.000156647	免疫
155	1.181443607	0.000190318	1.87626E-05	免疫
156	1.181393821	0.000190318	3.80424E-05	免疫
157	1.181132678	0.000267133	0.000171279	免疫

158	1.181117543	0.000445143	0.000382299	免疫
159	1.181064073	0.000374731	0.000304194	免疫
160	1.180874194	0.000267643	0.000172394	免疫
161	1.180816886	0.000294308	0.00021294	免疫
162	1.180545458	0.000310163	0.000235359	免疫
163	1.180462828	0.00053371	0.000475629	免疫
164	1.180229999	0.001162913	0.001115028	免疫
165	1.180118172	0.000295776	0.000218437	免疫
166	1.180035485	0.000190318	5.29624E-06	免疫
167	1.180012151	0.000190318	3.69225E-05	免疫
168	1.179979201	0.000190318	5.13943E-05	免疫
169	1.231473592	0.000190318	4.42795E-05	心臟
170	1.185406719	0.000498619	0.000439958	心臟
171	1.182511977	0.000222743	0.000118578	心臟
172	1.407050346	0.004706404	0.004692561	免疫
173	1.316408041	0.000873288	0.000814213	免疫
174	1.288792142	0.000190585	7.74166E-05	免疫
175	1.257269632	0.002829576	0.002779642	免疫
176	1.254791316	0.000190318	2.26275E-06	免疫
177	1.254616035	0.000415275	0.000345656	免疫
178	1.238026952	0.000190318	1.54626E-05	免疫
179	1.237777926	0.000190318	1.94526E-05	免疫
180	1.234793924	0.000566158	0.000509542	免疫
181	1.233163004	0.000270694	0.000186341	免疫
182	1.226641769	0.000190318	3.33057E-05	免疫
183	1.225950683	0.000191193	8.17423E-05	免疫
184	1.224948599	0.000190318	6.4529E-06	免疫
185	1.224615055	0.000197577	8.89174E-05	免疫
186	1.224596817	0.000190585	7.64443E-05	免疫
187	1.223630226	0.000228221	0.000125122	免疫
188	1.223520931	0.000274554	0.000192995	免疫
189	1.222306449	0.000190585	7.05947E-05	免疫
190	1.222262167	0.000537737	0.0004808	免疫
191	1.222169265	0.000190585	7.57638E-05	免疫
192	1.221529554	0.000205013	0.000102709	免疫
193	1.221272906	0.000190318	5.99672E-05	免疫
194	1.221188551	0.000190585	7.4407E-05	免疫

195	1.220281543	0.000225914	0.00012208	免疫
196	1.220202701	0.000477041	0.000416709	免疫
197	1.218733777	0.000191193	8.32253E-05	免疫
198	1.218608399	0.000190318	3.31236E-05	免疫
199	1.218463012	0.000190318	5.72619E-05	免疫
200	1.218446463	0.000190318	3.88975E-05	免疫

表8.d2

151	TTCCCCCAGTCCTCATAATGAGGCTTCATCGAGACCAGCCTAGCGAATGTGGTGAAACCT
152	ATTTGTTATTACCTCAATGAGAGCCTAGTCGAACTCCTGACCTACCTCAAGTGATCCATC
153	TTAAATTGACATTTGCCAAAGGCTCCACTCGATCTCCTGACCTCCATCATGTCCTCTCTT
154	GACTAAATACTCAGTATTTACAATCTAGTCGAACTCCCGACCTCCAGTGGAAGTTCACAC
155	CCTTTAGTACAGCGAGTAATAGATATATTCGAACTCCCGACCTCCAGTGGAAGTTCACAC
156	GTATTTTTTATAGATGTTCTCCATGAAGTCGAACTCCTGACTGAGGTGATCCATCCGCCT
157	TATTTCATGGGTCACTGATAAGTTCCATTCGAGACCAGCCTGTCTACAAAAAAAATAAAAA
158	GTCAATTGCAAGTTGTGACAAACCCACTTCGATCTCCTGACCTCCATCATGTCCTCTCTT
159	GAATTATTAGATTAAGAAGCAAAGGCACTCGATCTCTTGACCTCATGGTCTCCCACCTCA
160	CGGTTTATTCATTATTTAATACATCTCATCGAGACCAGCCTGAACAATATAGTGAGACCC
161	TCCCCAGGAACACCTGGAAGCTCAGGATTCGATCTCCTGACCTCATGATTCATCCTCCTT
162	ATTAACTATTTAGTACTACCCCTGATTATCGAACTCCTGACCTCAGGTAATCTTCCCACA
163	TTGTGGCAACTCAGCACACTTAACAACATCGAACTCCTGACCTCAGGAGTTCCACCCACC
164	CCTAGTATTGATAGAGGAAATATTAAATTCGAACTCCTGACTTCAGGAAATCTGCCCGTC
165	AACTTCAATAAAATATGTCATTTCAGTTTCGAACTCCTGACCTCAAGTCATTCCCCTGCC
166	ATACCTTAAGAGGAGAATTGATGGAATGTCGATCTCTTGACATCATGATCCACCTGCCTC
167	ACAGCATTGATACCCAGGGATTATTCATTCGAACTCCTGACTGAGGTGATCCATCCGCCT
168	TTAACAAGTGAAATAAAATAGTACCAATTCGAACTCCTGACCTCGTAA

	TCTACCCGCCTC
169	TTATTAAGACAAATATCCAACAAAGTCATCGAACTCCTGACCTTGTAATCTGTCCACCTT
170	AACTATTGCTATAGCAATCAAATTGCTTTCGAACTCCTGACCTCAGGTAGTACACCCGTC
171	ATAGTGAAAAATATTCAAATTCAGACAATCGAACTCCTGACCTCAAGTTATCCAGCCGTC
172	AGGGGTCACTGTTGATTCTGGAGTGTTCTCGAGAAAAATACTTTTCTACAGATGTGTCCT
173	GACTTTTAACATTTGACTTAGAGAAGATTCGAACTCCTGACCTGATGATCCCCCTACTTG
174	CACTTTAAAATTATATTCTTTGATGACTTCGAACTCCTGACCGTTTCTACTAAAAATACA
175	AAGTATATTTTGTAGTCTTTGGTATGAATCGAGACCATCCTGGTCAACACTGTGAAAACC
176	GGAGTTTCATCATTTTATCAGGGTGGTCTCGAGGAATTTATCCATTTCTTCTAGATTTTC
177	ACTTTGGTTCATTTACATCTTTAATTGATCGAACTCCTGACCTCAGATCAGGTGATCTGC
178	CATTTCTTAAAAGAAGACATAAAAATGGTCGATCTCCTGATCTCGTGATCTACCTTCCTT
179	CACATCTAAACTCCTGAAATTCTTCTGTTCGAACTCCTGACCTCACGTAATTCTCCCACC
180	CAAAAATACATTTATCAGAGCTAAAAAATCGAACTCCTGACCTCACGTAATTCTCCCACC
181	GATAGATGATAGGTGATTGTTAGATTGATCGAACTCCTGACCTCACGTAATTCTCCCACC
182	AGGGAGATTCCGTCTAAAAAAAAAAATGTCGAACTCCTGACCTTATGATCCATCCACCTC
183	CAAGACTCTGTCTCAAGCAAAAAAAAAATCGAACTCCTGACACCTCAGGTGATCTACCTG
184	GAAAATCTAGAAGAAATGGACAAATTCCTCGAACTCCTGACCTCACATTCCTGTATTTTC
185	TAGAGTAGTCTCATCTTCTTATAAAACATCGAACTCCTGACCTCAGGATTTGCCAGCCTC
186	GGGAAAAGTTGCAAAAAAAAAAAAGCAATCGAACTCCTGACCTCAACAGATCCTCCTGCT
187	AATGCCAACTTCAGATTTTAGTCTCCTTTCGATCTCCTGACCTCCATCATGTCCTCTCTT
188	TGTCATCTGTTCATACAATGCTAAAAATTCGAACTCCTGACCTCACGTAATTCTCCCACC
189	AATTAAAACATTTTGAAAAATGTAAGCATCGAACTCCTGACCTGATGATCCCCCTACTTG
190	GCATATTAATTTCAAGATAGCAGTCAATTCGAACTCCTGACCTCACGTAATTCTCCCACC

191	GGCTTTTGATTATTCACACAAGATATGATCGAACTCCTGACCTGATGATCCCCCTACTTG
192	TCTACACATTTATTGTGAACTTACCTCTTCGATCTCCTGATCTCGTGATCTACCTTCCTT
193	AATTTATGTTATAGCGATTACATCTAGATCGATCTCCTGACCTTGTGTTTCACCTGCCTT
194	TCTTCCATCTACAGAATTTTAATTAGAGTCGAACTCCTGATCTCGTGATATGCTGGCCTC
195	TAACTCATTTCAGCATTTCTTTTTTTTTTCGAACTCCTGACCTCACGTAATTCTCCCACC
196	GTTGCTTTAAGTGACGGAGTCCACAAGATCGAACTCCTGACCTCAAGTAGTTCTTCCACC
197	TAGTATTCAGAAATGGGGAGATTATTGTTCGAACTCCTGACCTCAGAAGATTTGCCTGCC
198	AGTAGAGACCACTTTGACCAGGCTGGTCTCGAGGAATTTATCCATTTCTTCTAGATTTTC
199	CAGATAGGTAAGTTACTAAAGAGGAAAATCGATCTCTTGACCTCGTACTCTGCCTGCCTT
200	CATTCCATATCTATACCAATGTTTCACTTCGAACTCCTGACCTGATGATCCCCCTACTTG

表8.d3

151	19	7670763	7670792	7738423	7738452
152	2	223267388	223267417	223450575	223450604
153	22	25258619	25258648	25482040	25482069
154	2	68193421	68193450	68359454	68359483
155	2	68188549	68188578	68359454	68359483
156	1	229082952	229082981	229284320	229284349
157	9	83574424	83574453	83699493	83699522
158	22	25264415	25264444	25482040	25482069
159	1	99618650	99618679	99763080	99763109
160	18	55924151	55924180	56075452	56075481
161	17	74586621	74586650	74675201	74675230
162	1	109359721	109359750	109570169	109570198
163	1	27834286	27834315	28029816	28029845
164	5	76572659	76572688	76657095	76657124
165	4	109733194	109733223	109801145	109801174
166	1	70054093	70054122	70318904	70318933
167	1	229261742	229261771	229284320	229284349
168	14	60542075	60542104	60746280	60746309
169	11	93202916	93202945	93228756	93228785
170	12	34029971	34030000	34080961	34080990

171	3	192831652	192831681	192941419	192941448
172	1	112153186	112153215	112230263	112230292
173	5	30068334	30068363	30144496	30144525
174	4	177314722	177314751	177434165	177434194
175	8	8573976	8574005	8694306	8694335
176	19	15474786	15474815	15596059	15596088
177	3	57444778	57444807	57467338	57467367
178	11	9685855	9685884	9866924	9866953
179	12	8810597	8810626	8956668	8956697
180	12	8725013	8725042	8956668	8956697
181	12	8733879	8733908	8956668	8956697
182	1	150318344	150318373	150519621	150519650
183	8	129814186	129814215	129899085	129899114
184	4	70375882	70375911	70476553	70476582
185	1	219996898	219996927	220133229	220133258
186	2	85732325	85732354	85782917	85782946
187	22	25482040	25482069	25528038	25528067
188	12	8895121	8895150	8956668	8956697
189	5	30065211	30065240	30144496	30144525
190	12	8956668	8956697	9010388	9010417
191	5	30100029	30100058	30144496	30144525
192	11	9569884	9569913	9685855	9685884
193	19	42510309	42510338	42637410	42637439
194	3	158528613	158528642	158576895	158576924
195	12	8900311	8900340	8956668	8956697
196	3	138621454	138621483	138764531	138764560
197	7	29905019	29905048	30016615	30016644
198	3	48676965	48676994	48843155	48843184
199	1	193555495	193555524	193673928	193673957
200	5	30144496	30144525	30260018	30260047

表8.d4

151	19	7666793	7670792	7738423	7742422	1
152	2	223263418	223267417	223446605	223450604	NA
153	22	25254649	25258648	25482040	25486039	NA
154	2	68189451	68193450	68359454	68363453	NA
155	2	68188549	68192548	68359454	68363453	1
156	1	229078982	229082981	229284320	229288319	1
157	9	83570454	83574453	83695523	83699522	NA
158	22	25264415	25268414	25482040	25486039	NA

159	1	99618650	99622649	99759110	99763109	NA
160	18	55920181	55924180	56075452	56079451	NA
161	17	74582651	74586650	74671231	74675230	NA
162	1	109359721	109363720	109566199	109570198	NA
163	1	27834286	27838285	28029816	28033815	NA
164	5	76572659	76576658	76653125	76657124	NA
165	4	109733194	109737193	109797175	109801174	NA
166	1	70054093	70058092	70318904	70322903	1
167	1	229261742	229265741	229284320	229288319	1
168	14	60538105	60542104	60742310	60746309	NA
169	11	93198946	93202945	93228756	93232755	1
170	12	34029971	34033970	34076991	34080990	NA
171	3	192827682	192831681	192941419	192945418	NA
172	1	112149216	112153215	112230263	112234262	NA
173	5	30064364	30068363	30144496	30148495	NA
174	4	177310752	177314751	177430195	177434194	1
175	8	8573976	8577975	8694306	8698305	NA
176	19	15474786	15478785	15596059	15600058	1
177	3	57440808	57444807	57467338	57471337	NA
178	11	9685855	9689854	9862954	9866953	1
179	12	8806627	8810626	8956668	8960667	1
180	12	8725013	8729012	8956668	8960667	NA
181	12	8729909	8733908	8956668	8960667	NA
182	1	150314374	150318373	150515651	150519650	1
183	8	129814186	129818185	129899085	129903084	1
184	4	70371912	70375911	70472583	70476582	1
185	1	219996898	220000897	220133229	220137228	1
186	2	85732325	85736324	85782917	85786916	1
187	22	25482040	25486039	25524068	25528067	NA
188	12	8895121	8899120	8956668	8960667	NA
189	5	30065211	30069210	30144496	30148495	1
190	12	8956668	8960667	9006418	9010417	NA
191	5	30096059	30100058	30144496	30148495	1
192	11	9565914	9569913	9685855	9689854	1
193	19	42510309	42514308	42633440	42637439	1
194	3	158524643	158528642	158576895	158580894	1
195	12	8896341	8900340	8956668	8960667	NA
196	3	138617484	138621483	138760561	138764560	NA
197	7	29905019	29909018	30016615	30020614	1
198	3	48672995	48676994	48843155	48847154	1

199	1	193551525	193555524	193673928	193677927	1
200	5	30144496	30148495	30256048	30260047	1

表8.d5

151	9.745198813	9.504228747	858.2170855	726.2028326
152	NA			
153	NA			
154	NA			
155	9.188191698	8.94764093	583.339395	493.7513661
156	11.19470461	10.95421463	2343.915112	1984.0252
157	NA			
158	NA			
159	NA			
160	NA			
161	NA			
162	NA			
163	NA			
164	NA			
165	NA			
166	10.90151073	10.66268049	1912.853583	1621.013612
167	10.90641724	10.66761552	1919.370135	1626.56811
168	NA			
169	10.22141458	9.921028894	1193.857214	969.454174
170	NA			
171	NA			
172	NA			
173	NA			
174	9.020303555	8.654283952	519.256498	402.9016635
175	NA			
176	10.10536786	9.777920411	1101.587105	877.9046288
177	NA			
178	10.92918677	10.62114405	1949.903174	1575.008663
179	10.04649516	9.738742662	1057.539006	854.385091
180	NA			
181	NA			
182	10.60273531	10.30802133	1555.039282	1267.720798
183	9.329982987	9.036082042	643.5832582	524.9666784
184	12.81038919	12.51766797	7183.091546	5863.994255
185	11.53765213	11.24532381	2972.893641	2427.614808
186	11.14927191	10.85696507	2271.251748	1854.693493

187	NA			
188	NA			
189	10.83389196	10.54428593	1825.267204	1493.297532
190	NA			
191	10.36767831	10.0782342	1321.241349	1081.06249
192	10.11372007	9.825031299	1107.983028	907.0456176
193	9.617488259	9.329102637	785.5113215	643.1906559
194	9.364965765	9.076679796	659.3797471	539.9491721
195	NA			
196	NA			
197	10.25819848	9.97281547	1224.687952	1004.885542
198	10.05999314	9.774758552	1067.479864	875.9826906
199	9.915747672	9.630685215	965.9118156	792.7296983
200	10.43056871	10.14552585	1380.111113	1132.680964

表8.d6

151	Hg38_19_7668688_7670794_7738421_7741267_FR	OBD183-1401
152	Hg38_2_223262711_223267419_223446116_223450606_FF	OBD183-1405
153	Hg38_22_25253412_25258650_25482038_25486782_FR	OBD183-1409
154	Hg38_2_68188547_68193452_68359452_68365969_FR	OBD183-1413
155	Hg38_2_68188547_68193452_68359452_68365969_RR	OBD183-1417
156	Hg38_1_229073105_229082983_229284318_229294264_FR	OBD183-1421
157	Hg38_9_83554932_83574455_83691585_83699524_FF	OBD183-1425
158	Hg38_22_25264413_25271942_25482038_25486782_RR	OBD183-1429
159	Hg38_1_99618648_99629858_99759006_99763111_RF	OBD183-1433
160	Hg38_18_55921930_55924182_56075450_56084543_FR	OBD183-1437
161	Hg38_17_74584319_74586652_74671518_74675232_FF	OBD183-1441
162	Hg38_1_109359719_109366704_109566782_109570200_RF	OBD183-1445
163	Hg38_1_27834284_27836433_28029814_28033207_RR	OBD183-1449
164	Hg38_5_76572657_76583168_76654480_76657126_RF	OBD183-1453
165	Hg38_4_109733192_109734599_109791099_109801176_RF	OBD183-1457
166	Hg38_1_70054091_70068840_70318902_70321099_RR	OBD183-1461
167	Hg38_1_229261740_229263861_229284318_229294264_RR	OBD183-1465
168	Hg38_14_60530277_60542106_60741580_60746311_FF	OBD183-1469
169	Hg38_11_93198707_93202947_93228754_93237221_FR	OBD183-1473
170	Hg38_12_34029969_34035740_34074510_34080992_RF	OBD183-1477
171	Hg38_3_192827117_192831683_192941417_192949607_FR	OBD183-1481
172	Hg38_1_112145907_112153217_112230261_112242505_FR	OBD183-1485
173	Hg38_5_30065209_30068365_30144494_30156052_FR	OBD183-1489
174	Hg38_4_177311798_177314753_177426344_177434196_FF	OBD183-1493

175	Hg38_8_8573974_8579178_8694304_8696852_RR	OBD183-1497
176	Hg38_19_15474784_15476319_15596057_15603844_RR	OBD183-1501
177	Hg38_3_57432399_57444809_57467336_57470926_FR	OBD183-1505
178	Hg38_11_9685853_9690988_9860564_9866955_RF	OBD183-1509
179	Hg38_12_8803939_8810628_8956666_8971971_FR	OBD183-1513
180	Hg38_12_8725011_8729420_8956666_8971971_RR	OBD183-1517
181	Hg38_12_8729585_8733910_8956666_8971971_FR	OBD183-1521
182	Hg38_1_150313909_150318375_150517096_150519652_FF	OBD183-1525
183	Hg38_8_129814184_129820472_129899083_129904705_RR	OBD183-1529
184	Hg38_4_70364253_70375913_70475197_70476584_FF	OBD183-1533
185	Hg38_1_219996896_220002127_220133227_220135485_RR	OBD183-1537
186	Hg38_2_85732323_85740233_85782915_85784976_RR	OBD183-1541
187	Hg38_22_25482038_25486782_25521454_25528069_RF	OBD183-1545
188	Hg38_12_8895119_8900342_8956666_8971971_RR	OBD183-1549
189	Hg38_5_30065209_30068365_30144494_30156052_RR	OBD183-1553
190	Hg38_12_8956666_8971971_9003019_9010419_RF	OBD183-1557
191	Hg38_5_30097465_30100060_30144494_30156052_FR	OBD183-1561
192	Hg38_11_9564044_9569915_9685853_9690988_FR	OBD183-1565
193	Hg38_19_42510307_42515066_42619854_42637441_RF	OBD183-1569
194	Hg38_3_158515927_158528644_158576893_158580745_FR	OBD183-1573
195	Hg38_12_8895119_8900342_8956666_8971971_FR	OBD183-1577
196	Hg38_3_138618464_138621485_138761567_138764562_FF	OBD183-1581
197	Hg38_7_29905017_29911792_30016613_30019069_RR	OBD183-1585
198	Hg38_3_48672113_48676996_48843153_48846436_FR	OBD183-1589
199	Hg38_1_193547269_193555526_193673926_193687017_FR	OBD183-1593
200	Hg38_5_30144494_30156052_30253195_30260049_RF	OBD183-1597

表8.d7

151	AGGCTACCTTGACGCTCACCCTG	OBD183-1403	GGAGTAGGTGGAGCCCAAAGGAT
152	CACCAGGGTATTTCCCAGCAGCC	OBD183-1407	CTGACCCAGGAAAACCACCCTCA
153	GACCTTCAATACCCAAAGTAAGCCTT	OBD183-1411	CTGTCCCATCTGCCTAAAACCGTTGG
154	CATCTCCCTCCCCTCCTTTCAGC	OBD183-1415	GCTGTCACTCCCAAGAGAAGCCT
155	AATCTTGCTACTGCCCATTAGAAAGG	OBD183-1419	CCCAGAACAGAGAAAGGGCATTAGGG
156	GGGATGTCCTTGCTTGTTCCTGAT	OBD183-1423	GATTCCAAAGGTCCGAAAGCAACGGG
157	CCATCTGCTCCAGGTATGACCCT	OBD183-1427	CCTGGGCTCAACCTTGCTGGACT

158	GGACCTGAATCTTCCACTCTGTCTTT	OBD183-1431	CTGTCCCATCTGCCTAAAACCGTTGG
159	TACCTCTCCTCTCCCCGCAAAACACT	OBD183-1435	ACTGTGACCAAAGGAAGGAAAGCCAT
160	GGCAGTGAATAACCTGTGGAAAGATT	OBD183-1439	CACCCAGTCACCCAGGCTTGTGTA
161	ACAGCCCCATCTCAGGGATAGGTTC	OBD183-1443	ATAAAAGTGGTTGTATTGGCTGGGCG
162	GCATCCTAAGAAAGTCACTATGTGCT	OBD183-1447	GTCACCTTTCGTCTTTTCCATTTCCC
163	CACATCTCAGGTCTACGCCTCTCAAG	OBD183-1451	CAGAACACAGTGAACAACCAGGCATT
164	GATGTGGTCAGTTGTAGGAGCAGACT	OBD183-1455	CCTCCAGCGAGACCACTCCTAAATAA
165	GACAAGATAGTTTTGGATTGCCACCA	OBD183-1459	GGGAAGAAAAGATGGAAGTGGGTCAT
166	GGTGGTAAACATTTGGCTTTTCCCAG	OBD183-1463	AATACAGCGGAGTCAGGGAGGCAAGA
167	GTTACCAGCAAATCTTCCATCAGTTC	OBD183-1467	GATTCCAAAGGTCCGAAAGCAACGGG
168	CTCAAGTCAAGAGAGGAGACAGCCAT	OBD183-1471	CCAGAGACAGGTTGAGGAGTAGAAAG
169	TGTCAAGCGGGGGCCTCAAGTTAT	OBD183-1475	GAAGGACGGAAACCAGAATTACT
170	CGCGGCATCTAATTTTAGTGTATT	OBD183-1479	TTGACTGCGAGTTCGCTACTAGT
171	CCGACTGCCCTTGTCCAATGGTGG	OBD183-1483	ACCCGATGAGTTGCCGACTTTTAGG
172	GCTGCCCTGAAAATGGGAGTCTG	OBD183-1487	GGCAGATGGGAAGCAGCGTCCTA
173	GCGTGATAGACTATGCACTAGGGTC	OBD183-1491	ACGGCCTATTTACCGAGAGCTGTT
174	TTCAGAGCCGGTAGATGTATGGC	OBD183-1495	GAAGGCTGGTTGAATACATGGCAG
175	TACGTGTACGAGCTCCTGCAGGA	OBD183-1499	AGATTGAGGTGTCCTAAACTTAC
176	TCAAATCGCATCCGCCGTGCACA	OBD183-1503	CGGCCATAACACCTTAGCCGTCTC
177	GAGATCGGGCACAGATGTGACTTCT	OBD183-1507	GGGGAATAAGTGACCTATGCACCAG
178	GCGCACGACGTCCTGATCCACCC	OBD183-1511	CGCCGCTTGCGATTTCGACCAAC
179	ATTCCGCCTATACGGATGCGTTC	OBD183-1515	GCGGGAACGGCTGTGCAGTCACA
180	CATACCTATCCCGAATGCTTAAGT	OBD183-1519	CGCTGTGTAGCGGACAGTCTGAG

181	AGGGAGTTACAGGCTTTCAGTAA	OBD183-1523	TACCCTCTCAAGCACGAGATCTAC
182	CTTAAAGTGATGCAGGTACATCCAT	OBD183-1527	GGGCGGGGTAGAAGCCGTCGCTT
183	GTGGAGTGTTTAACACTACCTTCC	OBD183-1531	GGGTCCATGCGGGGGGTAAAACC
184	GGTGTCTCGTGCACACCCTGGTAGC	OBD183-1535	TGTTTAAGAGGTCCGGGCAGCATA
185	ACCTGGAAACCCTCCTGCTGAAATAG	OBD183-1539	AAATCTGGACTCTGCCTTCTTGGAGC
186	CCGCTCTCTCTTCTGTGTCTTGG	OBD183-1543	GGTCAGTGTGGCAAAGTGGGAGC
187	CCCTGCTACAGATGATGCTGCCTG	OBD183-1547	CAGGGTCTGTCCCATCTGCCTAA
188	CCCAGCAGCAACTGTTTATCAGCAAT	OBD183-1551	ACTGCGGAACTTCAAAGGTCAGGTGC
189	GCGCGGCACCCATCTCTCTTCATT	OBD183-1555	AAAAAAGCGGCGCACTTCAGGCAT
190	GCTTATTGTGAACGTTCGAAAGC	OBD183-1559	AAAGGATGGATTTTTGACAATCC
191	CAATGTGGTTTATGTGCTACTGT	OBD183-1563	CGATGTCCAAGCTATGGTCCCTT
192	GAGAGGGTTTGTGAATCTAGGAGCA	OBD183-1567	ACAGCAATGCTAGGGAGCAATAA
193	CCGTGCTTTGAAAATCCCCAGATGTC	OBD183-1571	ATTCTCACTCCCCTACCTTCAGTCTG
194	CGTCGATACTCTCCAGCCGACTGAA	OBD183-1575	ACAGAAGCGCGATTGTCGGGCACAT
195	ACGGGAGAAAAAACCACTGGAAA	OBD183-1579	AGATTATAGTGTTGAAAAAGTCCTT
196	GGCAGTACCAGCTCGACATTCGCGT	OBD183-1583	TTCGACGGCGTGGGGAGTCTCTCCA
197	CCCCCGGCCAACCGTTCATTGGAG	OBD183-1587	CGTGATTTACGGACGCGAATTTA
198	AATAAGTGGATGGATGAGCGCCAC	OBD183-1591	ACATAAGTCACAGTGACAGCTTC
199	TGTATTGCCTAATGGGCCTCTTT	OBD183-1595	ACTTGGCTAGGTCGTCGTGCGCTCC
200	GTCATGCTAGGCAACAGCTGGATC	OBD183-1599	TCTGTACGCAGGGGACCAGTCGATA

表8.d8

201	Hg38_22_25264413_25271942_25482038_25486782_FR	LRP5L	42055.91212
202	Hg38_1_27797543_27806064_28029814_28033207_FR	SMPDL3B	42053.26541
203	Hg38_5_30055950_30065209_30144494_30156052_RR	DROSHA	39242.5488
204	Hg38_4_177265268_177272349_177426344_177434196_RF	AGA	44566.05845

205	Hg38_17_27573633_27580584_27705007_27714184_RR	LGALS9	44463.66765
206	Hg38_X_139896828_139900158_140013151_140020699_RF	ATP11C	42988.24933
207	Hg38_1_99460537_99469579_99708395_99714403_FF	AGL	42204.62547
208	Hg38_1_193673926_193687017_193723402_193725340_RF	CDC73	43424.86092
209	Hg38_12_56314794_56317802_56415250_56418662_FR	IL23A	45342.46649
210	Hg38_17_27705007_27714184_27819635_27822792_RF	LGALS9	43050.25058
211	Hg38_1_99641071_99649469_99708395_99714403_FF	AGL	45766.87757
212	Hg38_1_35174790_35177903_35287825_35293685_FR	SFPQ	45003.4861
213	Hg38_5_30008006_30016904_30144494_30156052_RR	DROSHA	44834.65227
214	Hg38_5_67178844_67182260_67213797_67219491_FR	CD180	47184.00069
215	Hg38_1_109359719_109366704_109565116_109566579_RF	PSMA5	49493.46698
216	Hg38_1_219983690_219989585_220133227_220135485_FR	EPRS	42918.44189
217	Hg38_11_78965087_78972317_79119884_79126654_RF	GAB2	49202.3045
218	Hg38_18_539296_550050_584723_586397_RF	COLEC12	50109.23772
219	Hg38_8_8694304_8696852_8726052_8731395_RF	MFHAS1	50973.66001
220	Hg38_1_193528788_193530846_193673926_193687017_RR	CDC73	48989.93916
221	Hg38_3_70749410_70755452_70897303_70900588_FR	FOXP1	42784.88768
222	Hg38_8_24010357_24021429_24161634_24170554_FR	ADAMDEC1	40591.79728
223	Hg38_3_158576893_158580745_158781885_158789582_RF	MLF1	52695.67794
224	Hg38_17_69164151_69180522_69430124_69435332_FR	MAP2K6	47636.4474
225	Hg38_11_65101566_65105117_65228515_65232564_FR	CAPN1	49851.89096
226	Hg38_8_24161634_24170554_24298873_24305051_RF	ADAMDEC1	39385.93102
227	Hg38_13_50104086_50113860_50155566_50162889_RF	TRIM13	49629.8881
228	Hg38_8_8634577_8639077_8694304_8696852_FR	MFHAS1	46854.06025
229	Hg38_8_24119510_24130040_24161634_24170554_FR	ADAMDEC1	41567.6576
230	Hg38_6_31710695_31717311_31846792_31848234_FR	C6orf48	52074.92239
231	Hg38_22_38808896_38820306_38970835_38973283_RF	APOBEC3A	50041.44307
232	Hg38_21_46072387_46079344_46279083_46281797_FF	MCM3AP	49734.38802
233	Hg38_3_105082976_105093952_105278351_105281788_FR	ALCAM	54246.45493
234	Hg38_22_38707803_38709080_38808896_38820306_RR	GTPBP1	48887.48828
235	Hg38_4_154421614_154428471_154574662_154583311_RF	FGA	48300.52211
236	Hg38_20_4736115_4737739_4885862_4890450_FF	RASSF2	52691.03985
237	Hg38_19_55395028_55396801_55609240_55610480_RR	SSC5D	55587.02385
238	Hg38_5_76475531_76481400_76572657_76583168_FR	IQGAP2	55578.78572
239	Hg38_4_163153577_163160533_163215420_163222992_FF	NPY5R	37333.89774
240	Hg38_X_2456239_2461258_2530520_2531841_FR	CD99	51560.88544
241	Hg38_1_238263911_238275028_238361690_238365165_FF	ZP4	48737.12973
242	Hg38_18_60381033_60390027_60592857_60596411_FF	PMAIP1	51696.53899
243	Hg38_22_38732684_38735694_38808896_38820306_RR	GTPBP1	51041.21585
244	Hg38_8_8653178_8657570_8694304_8696852_FR	MFHAS1	53321.30992

245	Hg38_11_102793985_102796912_102892680_102896888_FF	MMP1	51501.90071
246	Hg38_1_193673926_193687017_193848403_193851226_FR	CDC73	55872.3905
247	Hg38_19_42434303_42437498_42510307_42515066_FR	CEACAM1	53501.44381
248	Hg38_8_129814184_129820472_129899083_129904705_FR	FAM49B	55342.69733
249	Hg38_19_41359498_41360630_41453565_41456813_RF	ATP5SL	56454.72932
250	Hg38_1_193673926_193687017_193926526_193929941_RF	CDC73	52504.51484

表8.e1

201	1.217980671	0.000270451	0.000180173	免疫
202	1.21732084	0.000190318	6.7117E-05	免疫
203	1.217307806	0.000349576	0.000275548	免疫
204	1.217145751	0.000266211	0.00016834	免疫
205	1.216632744	0.000190318	3.93869E-05	免疫
206	1.215123981	0.000236458	0.000138114	免疫
207	1.215110028	0.000295776	0.00021803	免疫
208	1.214128695	0.000190585	7.22446E-05	免疫
209	1.213994593	0.000190318	6.32828E-05	免疫
210	1.211680597	0.000239248	0.000142845	免疫
211	1.210787095	0.000241232	0.000146519	免疫
212	1.209605762	0.000266673	0.000169416	免疫
213	1.209227903	0.000241232	0.000147551	免疫
214	1.20869455	0.000190318	2.08852E-05	免疫
215	1.20814936	0.000190318	1.93974E-05	免疫
216	1.20795849	0.000416908	0.000348241	免疫
217	1.207439156	0.000190318	3.57235E-05	免疫
218	1.206960097	0.000190318	3.04807E-06	免疫
219	1.206874718	0.000190318	4.50806E-05	免疫
220	1.206787146	0.000190318	3.40624E-05	免疫
221	1.206542696	0.000646854	0.000591681	免疫
222	1.205959387	0.000841008	0.000781643	免疫
223	1.205560226	0.000190318	2.78556E-05	免疫
224	1.205304475	0.000205013	0.000102815	免疫
225	1.204318622	0.000197577	9.32259E-05	免疫
226	1.204255307	0.001260137	0.001215661	免疫
227	1.204213124	0.000190318	5.14896E-05	免疫
228	1.203802599	0.000370996	0.000298979	免疫
229	1.203738557	0.000667821	0.000614788	免疫
230	1.203390916	0.000190318	5.57817E-05	免疫

231	1.202416682	0.000190585	7.03711E-05	免疫
232	1.202330306	0.000322087	0.000246301	免疫
233	1.201814636	0.000190318	3.40317E-05	免疫
234	1.200186232	0.000294063	0.000211898	免疫
235	1.199963105	0.000445143	0.000380385	免疫
236	1.199818633	0.000190318	6.21786E-05	免疫
237	1.199815298	0.000190318	6.67805E-05	免疫
238	1.199650396	0.000190318	5.8028E-05	免疫
239	1.199628952	0.004213528	0.004188743	免疫
240	1.199599769	0.000235024	0.000134691	免疫
241	1.199199629	0.000272499	0.00019075	免疫
242	1.198713718	0.000190318	6.53657E-05	免疫
243	1.19837051	0.000270662	0.000183447	免疫
244	1.197935801	0.000190318	6.08052E-05	免疫
245	1.197701976	0.000190318	6.71712E-05	免疫
246	1.197665727	0.000190318	4.42672E-05	免疫
247	1.197042331	0.000236458	0.000140484	免疫
248	1.196532286	0.000211794	0.000110258	免疫
249	1.195802366	0.000190318	3.17828E-05	免疫
250	1.195754196	0.000241232	0.000148167	免疫

表8.e2

201	AACACCAACTTCAGATTTTAGTCTGCTTTCGATCTCCTGACCTCCATCATGTCCTCTCTT
202	TCCCTGAGTTATGCAGCTCTTCCAAATGTCGAACTCCTGACCTCAGGAGTTCCACCCACC
203	TTTATTCTTTCTTTGTGTTATAAGCAATTCGAACTCCTGACCTGATGATCCCCCTACTTG
204	TGTATTTTTAGTAGAAACGGTCAGGAGTTCGATGGCATATAGTTGTACACTACAGTGATT
205	AGCTACCTTTCAGGGGAAATTATTTTTTTCGATCTCCTGACCTAGTGATTGGCCCTCCTC
206	TCATTAGTTGCCTGGAGACAAATTTGAGTCGAACTCCTGACCTCAAGGCCCAGTCAGCCT
207	TATTTATATTCCTTAATGATGTAACTTCTCGAGACCAGCCTGACTGATATTGTGAAACCC
208	CAAAGGCTCTAGGTGGCTGATTAAAGCATCGATCTCTTGACCTCGTACTCTGCCTGCCTT
209	AAGAGGAAGTTATAGTTAATGGAGAGTTTCGATCTCCTGACCTTGTCATTCTCCCATCTC

210	AGGTGTAAAAAATTATAAAAGTATTAATTCGATCTCCTGACCTAGTGA TTGGCCCTCCTC
211	ACTGAGGATACCAATGACTCCAGCATTCTCGAGACCAGCCTGACTGA TATTGTGAAACCC
212	ATCTTAGAAACGGTAAACATCTCAAATATCGAACTCCTGACCTCGCG GTCTACCAGCCTT
213	AAAATAAATTAATCCCAAACTTGGTTAGTCGAACTCCTGACCTGATGA TCCCCCTACTTG
214	GACCTAAGGATTAAGAAGATTAATGGAGTCGATCTCCTGACATCGTG ATCTATCCGCCTC
215	GAATGAAATGTCATTCTTTTTTGTTTGTTCGAACTCCTGACCTCAGGTA ATCTTCCCACA
216	TCACCCTATCCAATTTTTACTGCTACATTCGAACTCCTGACCTCAGGA TTTGCCAGCCTC
217	TAATTTATACAAGTAGAAAAATTCTAGGTCGAACTCCTGACCTCAAAA GATCTGCTCGCT
218	GTCTTTTGCCATATTAGTCTGTCTGGTCTCGATGCAAAAATCCTCAAT AAAATACTGGCA
219	CTAGCACCAAACTTCTCATTTCAGACTTTCGAGACCATCCTGGTCAAC ACTGTGAAAACC
220	TTCACAACTATTCACTGCAGAAAACAAGTCGATCTCTTGACCTCGTAC TCTGCCTGCCTT
221	ACATCTTTTTGCTTTTTTGCATTTAGTGTCGAGGAGTATCTTTGTGATG TTCTCTGTATT
222	AGTAATAGACTTAAAGATGAAAAGTCATTCGATTTTAGATCTTTCCTG CTTTCTCTGGTA
223	TCCTGTTAAGCATATTATTGATGGGCTTTCGAACTCCTGATCTCGTGAT ATGCTGGCCTC
224	ATTGATTAAAAAAAAAGGGAAGACAACATCGAGACCAGCCTGTCCAC CATGGTGGAACCC
225	CTCATAATTGGTTAACAATGAGGTTTTTTCGAACTCCTGACCTGAAGG GATCTGTCTGCC
226	ATAAACCTTTATTTTAAAATTCTTCTTTTCGATTTTAGATCTTTCCTGCT TTCTCTGGTA
227	AAATTAATGGATATTTTCCTTTGAAGGGTCGAACTCCTGAGCTCAAGA CCTCCCAAAGTG
228	CCATCCATAAGGTTTTTAGGAAAAAAACTCGAGACCATCCTGGTCAA CACTGTGAAAACC
229	GTTTTGTCACAGTAATAAATCAATCAGTTCGATTTTAGATCTTTCCTGC TTTCTCTGGTA
230	TACTAAAAATTATTTTATAGAATGTCCCTCGAGACCAGCCTGGGTAAT ATTGCAAGACAC
231	TGAGATTTTGTCTCAAAAAAAAAAAAAGTCGAACTCCTGACCTCAGA TGATTCATCTGCC
232	TTCAGGCCACGTGGTCCCAGATGTGAAGTCGAACTCCTGACCTCAGTG

	TTCCACGCACCT
233	CTTTAGAAGCTACTCTTTATATACTCGCTCGAGACCAGACTGGATAACAAGGCAAAACCC
234	ACACCATCACTTTTTCTTTTTGATATCATCGAACTCCTGACCTCAGATGATTCATCTGCC
235	AGCATAGATCATACTTAGTGAGAGGCTTTCGAACTCCTGACCTCAAAAAATCCACCACCT
236	AGCAGAAGAAAATAAGTGAAGTCTAACATCGAACTCATGACCTCAGGTTATCCTCCTGCC
237	TTTGCATATTGTGACTATCCAGAGGCATTCGAACTCCTGACTATAGTTGATCCACCCACC
238	CAATGTACAAAAAAAGTTTTTTTTTTTTTCGAACTCCTGACTTCAGGAAATCTGCCCGTC
239	TGCATTGTACATAGTTAGATCGCAGAGATCGAACTCCTGACCTCATCATTCACCCACCTC
240	ACACAAATAAAATAGGAGTCCGGTGACCTCGAGACCATCCTGGCTAATTTGGTGAAACCC
241	TTTAATGGGCAACTCTGAAGGATTATGTTCGAACTCCTGACCTTGTGTTCAACCCACCTC
242	ATAAAAATTAAATTTAGTCACAGTACATTCGAACTCCTGACCTCAGGTGCTTCACCTGCT
243	AAAAAGAAAAAGAAAAACAGAACAAACATCGAACTCCTGACCTCAGATGATTCATCTGCC
244	ATGATGGGGGAAATAATTCAAAACTGACTCGAGACCATCCTGGTCAACACTGTGAAAACC
245	TCCATCAACTGTGATGCAGTTTCCCTCTTCGATCTCCTGACCTCAAGATCCACCAACCTC
246	GGAACACTTCTCTAAGAACCTGAATTATTCGATCTCTTGGCCTCATGATCCATCAGCCTT
247	GTCAGCTACTGGCTCTGTCACTTAACTGTCGATCTCCTGACCTTGTGTTTCACCTGCCTT
248	GCCTCTGCTGTGTAACTTCAGAGGAAATTCGAACTCCTGACACCTCAGGTGATCTACCTG
249	ATTAGGCACTGTAGAATCTAGCAGCATCTCGAGACCATCCTGGCCAACATTCTGAAACCC
250	CCTTAATAAAATAAACTTTCTAAATTGATCGATCTCTTGACCTCGTACTCTGCCTGCCTT

表8.e3

201	22	25271911	25271940	25482040	25482069
202	1	27806033	27806062	28029816	28029845
203	5	30055952	30055981	30144496	30144525
204	4	177265270	177265299	177434165	177434194
205	17	27573635	27573664	27705009	27705038

206	X	139896830	139896859	140020668	140020697
207	1	99469548	99469577	99714372	99714401
208	1	193673928	193673957	193725309	193725338
209	12	56317771	56317800	56415252	56415281
210	17	27705009	27705038	27822761	27822790
211	1	99649438	99649467	99714372	99714401
212	1	35177872	35177901	35287827	35287856
213	5	30008008	30008037	30144496	30144525
214	5	67182229	67182258	67213799	67213828
215	1	109359721	109359750	109566548	109566577
216	1	219989554	219989583	220133229	220133258
217	11	78965089	78965118	79126623	79126652
218	18	539298	539327	586366	586395
219	8	8694306	8694335	8731364	8731393
220	1	193528790	193528819	193673928	193673957
221	3	70755421	70755450	70897305	70897334
222	8	24021398	24021427	24161636	24161665
223	3	158576895	158576924	158789551	158789580
224	17	69180491	69180520	69430126	69430155
225	11	65105086	65105115	65228517	65228546
226	8	24161636	24161665	24305020	24305049
227	13	50104088	50104117	50162858	50162887
228	8	8639046	8639075	8694306	8694335
229	8	24130009	24130038	24161636	24161665
230	6	31717280	31717309	31846794	31846823
231	22	38808898	38808927	38973252	38973281
232	21	46079313	46079342	46281766	46281795
233	3	105093921	105093950	105278353	105278382
234	22	38707805	38707834	38808898	38808927
235	4	154421616	154421645	154583280	154583309
236	20	4737708	4737737	4890419	4890448
237	19	55395030	55395059	55609242	55609271
238	5	76481369	76481398	76572659	76572688
239	4	163160502	163160531	163222961	163222990
240	X	2461227	2461256	2530522	2530551
241	1	238274997	238275026	238365134	238365163
242	18	60389996	60390025	60596380	60596409
243	22	38732686	38732715	38808898	38808927
244	8	8657539	8657568	8694306	8694335
245	11	102796881	102796910	102896857	102896886

246	1	193686986	193687015	193848405	193848434
247	19	42437467	42437496	42510309	42510338
248	8	129820441	129820470	129899085	129899114
249	19	41359500	41359529	41456782	41456811
250	1	193673928	193673957	193929910	193929939

表8.e4

201	22	25267941	25271940	25482040	25486039	NA
202	1	27802063	27806062	28029816	28033815	1
203	5	30055952	30059951	30144496	30148495	NA
204	4	177265270	177269269	177430195	177434194	NA
205	17	27573635	27577634	27705009	27709008	1
206	X	139896830	139900829	140016698	140020697	NA
207	1	99465578	99469577	99710402	99714401	NA
208	1	193673928	193677927	193721339	193725338	1
209	12	56313801	56317800	56415252	56419251	1
210	17	27705009	27709008	27818791	27822790	NA
211	1	99645468	99649467	99710402	99714401	NA
212	1	35173902	35177901	35287827	35291826	NA
213	5	30008008	30012007	30144496	30148495	NA
214	5	67178259	67182258	67213799	67217798	1
215	1	109359721	109363720	109562578	109566577	1
216	1	219985584	219989583	220133229	220137228	NA
217	11	78965089	78969088	79122653	79126652	1
218	18	539298	543297	582396	586395	1
219	8	8694306	8698305	8727394	8731393	1
220	1	193528790	193532789	193673928	193677927	1
221	3	70751451	70755450	70897305	70901304	NA
222	8	24017428	24021427	24161636	24165635	NA
223	3	158576895	158580894	158785581	158789580	1
224	17	69176521	69180520	69430126	69434125	1
225	11	65101116	65105115	65228517	65232516	1
226	8	24161636	24165635	24301050	24305049	NA
227	13	50104088	50108087	50158888	50162887	1
228	8	8635076	8639075	8694306	8698305	NA
229	8	24126039	24130038	24161636	24165635	NA
230	6	31713310	31717309	31846794	31850793	1
231	22	38808898	38812897	38969282	38973281	1
232	21	46075343	46079342	46277796	46281795	NA
233	3	105089951	105093950	105278353	105282352	1

234	22	38707805	38711804	38808898	38812897	NA
235	4	154421616	154425615	154579310	154583309	NA
236	20	4733738	4737737	4886449	4890448	1
237	19	55395030	55399029	55609242	55613241	1
238	5	76477399	76481398	76572659	76576658	1
239	4	163156532	163160531	163218991	163222990	NA
240	X	2457257	2461256	2530522	2534521	NA
241	1	238271027	238275026	238361164	238365163	NA
242	18	60386026	60390025	60592410	60596409	1
243	22	38732686	38736685	38808898	38812897	NA
244	8	8653569	8657568	8694306	8698305	1
245	11	102792911	102796910	102892887	102896886	1
246	1	193683016	193687015	193848405	193852404	1
247	19	42433497	42437496	42510309	42514308	NA
248	8	129816471	129820470	129899085	129903084	NA
249	19	41359500	41363499	41452812	41456811	1
250	1	193673928	193677927	193925940	193929939	NA

表8.e5

201	NA			
202	9.856034856	9.572325397	926.7490081	761.302179
203	NA			
204	NA			
205	9.788722457	9.505828718	884.5025284	727.0086495
206	NA			
207	NA			
208	10.28022963	10.00030828	1243.533477	1024.218835
209	9.03422448	8.754462483	524.291185	431.8727513
210	NA			
211	NA			
212	NA			
213	NA			
214	10.94283311	10.6693834	1968.434662	1628.562536
215	11.15039873	10.87759991	2273.026414	1881.41176
216	NA			
217	11.16388225	10.89193176	2294.369841	1900.194994
218	11.11006248	10.8386845	2210.355149	1831.340701
219	9.363274334	9.091998412	658.6071364	545.7129283
220	10.38999991	10.11882867	1341.842759	1111.913367
221	NA			

222	NA			
223	9.731248047	9.461544321	849.9581788	705.0317025
224	10.80641554	10.5370179	1790.833553	1485.793499
225	9.762290707	9.494073576	868.4450201	721.109019
226	NA			
227	9.639375905	9.371285159	797.5194561	662.2743435
228	NA			
229	NA			
230	11.83928058	11.57217521	3664.195043	3044.891726
231	11.63915089	11.37321396	3189.580322	2652.641443
232	NA			
233	9.381403003	9.116188606	666.9353009	554.9402386
234	NA			
235	NA			
236	9.485484999	9.222668657	716.828903	597.4477167
237	8.998787677	8.735975346	511.5699377	426.3739083
238	9.475879036	9.213265001	712.0718625	593.5661463
239	NA			
240	NA			
241	NA			
242	12.32877198	12.06728484	5144.346073	4291.555188
243	NA			
244	10.28679249	10.02624189	1249.203229	1042.796473
245	11.4461966	11.18592763	2790.284673	2329.698646
246	8.741107218	8.480881915	427.8932819	357.2727115
247	NA			
248	NA			
249	13.31992647	13.0619475	10225.80265	8551.415305
250	NA			

表8.e6

201	Hg38_22_25264413_25271942_25482038_25486782_FR	OBD183-1601
202	Hg38_1_27797543_27806064_28029814_28033207_FR	OBD183-1605
203	Hg38_5_30055950_30065209_30144494_30156052_RR	OBD183-1609
204	Hg38_4_177265268_177272349_177426344_177434196_RF	OBD183-1613
205	Hg38_17_27573633_27580584_27705007_27714184_RR	OBD183-1617
206	Hg38_X_139896828_139900158_140013151_140020699_RF	OBD183-1621
207	Hg38_1_99460537_99469579_99708395_99714403_FF	OBD183-1625
208	Hg38_1_193673926_193687017_193723402_193725340_RF	OBD183-1629
209	Hg38_12_56314794_56317802_56415250_56418662_FR	OBD183-1633

210	Hg38_17_27705007_27714184_27819635_27822792_RF	OBD183-1637
211	Hg38_1_99641071_99649469_99708395_99714403_FF	OBD183-1641
212	Hg38_1_35174790_35177903_35287825_35293685_FR	OBD183-1645
213	Hg38_5_30008006_30016904_30144494_30156052_RR	OBD183-1649
214	Hg38_5_67178844_67182260_67213797_67219491_FR	OBD183-1653
215	Hg38_1_109359719_109366704_109565116_109566579_RF	OBD183-1657
216	Hg38_1_219983690_219989585_220133227_220135485_FR	OBD183-1661
217	Hg38_11_78965087_78972317_79119884_79126654_RF	OBD183-1665
218	Hg38_18_539296_550050_584723_586397_RF	OBD183-1669
219	Hg38_8_8694304_8696852_8726052_8731395_RF	OBD183-1673
220	Hg38_1_193528788_193530846_193673926_193687017_RR	OBD183-1677
221	Hg38_3_70749410_70755452_70897303_70900588_FR	OBD183-1681
222	Hg38_8_24010357_24021429_24161634_24170554_FR	OBD183-1685
223	Hg38_3_158576893_158580745_158781885_158789582_RF	OBD183-1689
224	Hg38_17_69164151_69180522_69430124_69435332_FR	OBD183-1693
225	Hg38_11_65101566_65105117_65228515_65232564_FR	OBD183-1697
226	Hg38_8_24161634_24170554_24298873_24305051_RF	OBD183-1701
227	Hg38_13_50104086_50113860_50155566_50162889_RF	OBD183-1705
228	Hg38_8_8634577_8639077_8694304_8696852_FR	OBD183-1709
229	Hg38_8_24119510_24130040_24161634_24170554_FR	OBD183-1713
230	Hg38_6_31710695_31717311_31846792_31848234_FR	OBD183-1717
231	Hg38_22_38808896_38820306_38970835_38973283_RF	OBD183-1721
232	Hg38_21_46072387_46079344_46279083_46281797_FF	OBD183-1725
233	Hg38_3_105082976_105093952_105278351_105281788_FR	OBD183-1729
234	Hg38_22_38707803_38709080_38808896_38820306_RR	OBD183-1733
235	Hg38_4_154421614_154428471_154574662_154583311_RF	OBD183-1737
236	Hg38_20_4736115_4737739_4885862_4890450_FF	OBD183-1741
237	Hg38_19_55395028_55396801_55609240_55610480_RR	OBD183-1745
238	Hg38_5_76475531_76481400_76572657_76583168_FR	OBD183-1749
239	Hg38_4_163153577_163160533_163215420_163222992_FF	OBD183-1753
240	Hg38_X_2456239_2461258_2530520_2531841_FR	OBD183-1757
241	Hg38_1_238263911_238275028_238361690_238365165_FF	OBD183-1761
242	Hg38_18_60381033_60390027_60592857_60596411_FF	OBD183-1765
243	Hg38_22_38732684_38735694_38808896_38820306_RR	OBD183-1769
244	Hg38_8_8653178_8657570_8694304_8696852_FR	OBD183-1773
245	Hg38_11_102793985_102796912_102892680_102896888_FF	OBD183-1777
246	Hg38_1_193673926_193687017_193848403_193851226_FR	OBD183-1781
247	Hg38_19_42434303_42437498_42510307_42515066_FR	OBD183-1785
248	Hg38_8_129814184_129820472_129899083_129904705_FR	OBD183-1789
249	Hg38_19_41359498_41360630_41453565_41456813_RF	OBD183-1793

250	Hg38_1_193673926_193687017_193926526_193929941_RF	OBD183-1797

表8.e7

201	CCCTGCTACAGATGATGCTGCCTG	OBD183-1603	CAGGGTCTGTCCCATCTGCCTAA
202	CTGCTCCTATAGGGCGTAATGACA	OBD183-1607	CTTCTTGTTGGGACGGCTTTCGTT
203	CCACATATCACGTGGTACAAGGT	OBD183-1611	AGACGTTCTCTTTCCATTTGGATCA
204	ATTCGTGTCCGCGGGCACCTTGAA	OBD183-1615	TTCGGACCGCTTCCGTGGCCGTGAG
205	CCTGGCAAAGCCTTGGGATACAGC	OBD183-1619	GCCATCCCCTACACAGGTTCTCA
206	CATCACCGGCCGGTGCTAAAACCA	OBD183-1623	CGCAGCTTCAGTTACGGGGGCGAAT
207	AAGTTGTGGCCCATACTCGTTTAC	OBD183-1627	GTAACTCCACCACAGAGTACGAC
208	GGGTGACCTGGGCGGAGGCTGCCCT	OBD183-1631	ATTTGCGATGGAACTTGGAGTCTA
209	CGTTGACGCAATATAGGAGAGGAAA	OBD183-1635	GAGGGTTTCCTAACGTGCCTTGC
210	CTGGTATAGAGATTTTGCAGGTA	OBD183-1639	TGTAGCTACCTGACAGGAACTGA
211	GATGCTGCTGGGCAGTCACCCTCC	OBD183-1643	TCCTCGGTCGTAGCCCTTATATT
212	ACACCCCACGATACAAAAACAAGT	OBD183-1647	GCTCAGTACGATTGACGTTTGCTC
213	ACCGCACAATCTTAGGGGATACTTC	OBD183-1651	CGGTTTGTAACGGTGCGGATACC
214	GTTGCTCTAGGACACCGAGCAAA	OBD183-1655	GACAACTCCATCTGCTTCTTCCGT
215	TTGACAACGGGCCGTTGGGAGCAAA	OBD183-1659	CGTGGCAAACATGAAACAAGCTCCA
216	CCCCACCGAGACACTTGTGACTC	OBD183-1663	TCTGGACTCTGCCTTCTTGGAGC
217	AGATTTCAAGTCCGTAGGCTCAG	OBD183-1667	CGTATTCCGGGTCCTGTCGGTAGG
218	CTTTAAAGACTGCACTACTAGTCA	OBD183-1671	TTCTAGCCTACCCTTAAGCTTGT
219	TGTATCCATGGTATCTGTACGTTTG	OBD183-1675	GTGTGCGTACTCGTTGAAGGTGGG
220	TATCAGAAGCCCCCGAAACTAGGT	OBD183-1679	TGAGGATCAACAGACCTCTGTAT
221	CCGCTTGCGACCGTTTAGATGTTTC	OBD183-1683	ACCGAGGGCAGCACCGTGTAACTTC

222	GAACAGGGCTGTTCGCGTGATAC	OBD183-1687	AGGACATCTATGGGGATACATAGG
223	TCGTAAACCTAGATAGTCAACCATG	OBD183-1691	TATGGAGGTCAAGTGCTGTAATTT
224	CTAGTATTTGTCACGTCCTGTATGA	OBD183-1695	ATTCACTTGGCGTCCCCGTTGCG
225	CAGTTTTGATTTCCTTTTCTGACCTC	OBD183-1699	GTTCTGTTTCTTGACCAGTGTGTTGA
226	AAAGATGTCGTGCTACTCCATAC	OBD183-1703	AGGCCTCCACCTACCGATACATGAG
227	CGGGAGATCTAGTAAAGGATGAAAT	OBD183-1707	TGTCCCCTCCCGCATGCAAGCGAT
228	AAATGGGGCGAAATTACGCTGCC	OBD183-1711	ATAGGAATTCAGAGGCTTTAAGGTG
229	TGCTCGTCCTACGAGTGGTAGAGTT	OBD183-1715	GTGGCGCGTTTTTAAACACCGTCC
230	CGTGTAACCCCGACCCAGCAACGT	OBD183-1719	CAGTCGGCCTACCGTCCGCTCCCAA
231	TATTTAGCAGGAGTCGCACTCAG	OBD183-1723	TATGTTACTGTCAGAGGGGCACA
232	GGTTAATGATGGGTTCAGCTCTAA	OBD183-1727	TAATAATATACGGGGCATAGTATA
233	CTTGACAGCCCTCTTTGTGGTTACTC	OBD183-1731	GAATGACGCCGAAGGACTTTGTATCC
234	TAGTCTGTTACGCTGGCCTCTATAT	OBD183-1735	TGACTTCTAGCGCACGACGTCCTGA
235	GAAGTATTCGCATGCGCAACCCCAC	OBD183-1739	CCACCCCATTCCGCCTATACGGATG
236	AGCCAAGCGTGGTTGTACTTCGCCA	OBD183-1743	GTTCCCATACCTATCCCGAATGC
237	ACCTGTCCTTGTGGTTTGCCTAAC	OBD183-1747	TAAGTAAGGGAGTTACAGGCTTTCA
238	AGTACCTGCAGTTTAGTATTAACT	OBD183-1751	TAATCTTAAAGTGATGCAGGTACAT
239	CGAATGCTACGCCGTTACCTCAGC	OBD183-1755	CATCGTGGAGTGTTTAACACTACC
240	TTGGTACATGCAGCAAACACTCAGT	OBD183-1759	TCCTGGTGTCTCGTGCACACCCTGG
241	AAAGCGGGGTGTCAAGCGGGGGCC	OBD183-1763	AGCCGTAGTACCTGCGGCAGGCACA
242	CAAGTTATGCGCGGCATCTAATTTT	OBD183-1767	TCACTATCCATATACGAGGTGGC
243	GTGTATTGCCGACTGCCCTTGTC	OBD183-1771	GATGTTCCGTTTGGTCTATAGCA
244	AATGGTGGAGAAGGACG	OBD183-1775	GTGTGTTGTCTCTCATTTCT

	GAAACCA		GCTTA
245	AATTACTATTGACTGCGAGTTCGCT	OBD183-1779	ACCTTGGTGGCGCCCCGTACGCCGT
246	CTAGTGACCCGATGAGTTGCCGA	OBD183-1783	CAGGTAGCTGCCCTCACGGGACT
247	TTTTAGGTGCGTGATAGACTATG	OBD183-1787	GCACTTTACACTGGTATAGGGAC
248	ACTAGGGTCCTTCAGAGCCGGTAG	OBD183-1791	GTGTGTAGCCGAGCTAATAAAACG
249	TGTATGGCATACGTGTACGAGCT	OBD183-1795	TGCGTGCTAACGGAACGCTTCAGGC
250	CTGCAGGAATCAAATCGCATCCGC	OBD183-1799	ATCGAAATTATGGTACCGAGAGGC

表8.e8

251	Hg38_12_46821759_46827269_46865284_46879162_FF	PCED1B	52444.49409
252	Hg38_22_28598306_28600429_28753634_28758538_FF	TTC28	53389.05472
253	Hg38_11_9477640_9482033_9685853_9690988_RR	SWAP70	50697.26673
254	Hg38_22_28554668_28559386_28753634_28758538_FF	TTC28	53965.86326
255	Hg38_17_1411117_1412617_1634184_1635993_RF	CRK	53185.52889
256	Hg38_5_74325511_74329920_74537627_74543794_FR	HEXB	58046.45799
257	Hg38_12_14611683_14620949_14668390_14673240_FR	HIST4H4	59701.44705
258	Hg38_X_2345279_2349126_2530520_2531841_FR	CD99	54408.43105
259	Hg38_18_56075450_56084543_56148926_56154674_RF	TCF4	50818.57391
260	Hg38_19_17318586_17321060_17372677_17376287_RR	PLVAP	50867.38498
261	Hg38_12_122518390_122523625_122683979_122688903_FF	HCAR2	67212.53389
262	Hg38_4_4146074_4152493_4280585_4285296_FF	LYAR	54078.12648
263	Hg38_11_118323848_118335396_118462783_118464333_RR	CD3D	57954.67302
264	Hg38_15_72172047_72177812_72350397_72358464_RF	PKM	53340.62932
265	Hg38_12_8956666_8971971_9052225_9059010_RF	A2M	58456.59878
266	Hg38_1_160202241_160208034_160387699_160390980_FR	NCSTN	54296.30822
267	Hg38_22_34722666_34726389_34750116_34757594_FR	TOM1	44837.84123
268	Hg38_18_8623206_8633807_8834563_8839858_RR	RAB12	57961.35429
269	Hg38_3_10166863_10171451_10267732_10269649_RF	IRAK2	58264.83493
270	Hg38_22_37732067_37737457_37944696_37945909_FF	ANKRD54	54981.71707
271	Hg38_11_47310703_47316087_47405431_47407603_RF	SPI1	59891.07706
272	Hg38_10_73661598_73666900_73900120_73903402_RF	CAMK2G	59699.3964
273	Hg38_11_78798294_78806874_78965087_78972317_RR	GAB2	55159.38443
274	Hg38_15_65465777_65469194_65573794_65596385_RF	DPP8	58682.0863
275	Hg38_1_193655980_193663241_193673926_193687017_FR	CDC73	57777.81756
276	Hg38_5_30107211_30110692_30144494_30156052_RR	DROSHA	58365.69232
277	Hg38_18_427721_433761_539296_550050_FR	COLEC12	58064.51858

278	Hg38_12_15684229_15699647_15801742_15806686_FF	EPS8	56946.45375
279	Hg38_19_33180896_33182661_33328178_33332893_FF	CEBPA	61202.44274
280	Hg38_11_78848038_78857286_78965087_78972317_FR	GAB2	58769.84406
281	Hg38_Y_20386719_20398884_20504300_20520750_FR	KDM5D	48417.46255
282	Hg38_20_31369843_31372347_31617243_31621976_RR	DEFB118	59843.41938
283	Hg38_1_147709076_147716288_147799500_147802923_RF	ACP6	53821.33874
284	Hg38_17_30923923_30926868_31150085_31156746_RF	NF1	57251.74647
285	Hg38_9_94033256_94043963_94058786_94067185_FF	BARX1	59735.75802
286	Hg38_5_31866962_31870685_31910749_31916612_RR	GOLPH3	60050.7893
287	Hg38_10_114529344_114531737_114712352_114726311_RF	ABLIM1	55746.96154
288	Hg38_12_64438849_64448996_64463496_64470612_RF	TBK1	61881.88104
289	Hg38_17_35998435_36002770_36030367_36035489_FR	CCL15	65006.71327
290	Hg38_3_154848097_154855651_154966860_154974838_FR	MME	56265.31231
291	Hg38_1_193673926_193687017_193882412_193889924_RF	CDC73	60988.03841
292	Hg38_3_158501077_158507758_158576893_158580745_FR	MLF1	57524.99311
293	Hg38_17_63801674_63804028_64026936_64033184_FF	CD79B	64531.91532
294	Hg38_17_31302844_31307239_31324781_31330350_RR	EVI2B	64284.82246
295	Hg38_17_31224131_31234469_31324781_31330350_RR	EVI2B	60367.16409
296	Hg38_19_42697457_42701566_42762015_42770764_RF	CEACAM8	58661.04435
297	Hg38_8_8422737_8427114_8694304_8696852_RR	MFHAS1	59120.0054
298	Hg38_2_9540565_9545891_9601867_9603721_FR	ADAM17	61151.65322
299	Hg38_6_136360365_136366092_136518089_136523843_RF	MAP3K5	62837.60702
300	Hg38_X_70970170_70972174_71213839_71218089_FF	IL2RG	55780.88443

表8.f1

251	1.195236301	0.000190318	5.82936E-05	免疫
252	1.195155906	0.000211794	0.000109982	免疫
253	1.195084632	0.000412196	0.00034188	免疫
254	1.19473551	0.000262232	0.000165052	免疫
255	1.194662754	0.000270694	0.000188378	免疫
256	1.194570441	0.000190318	2.12317E-05	免疫
257	1.194388741	0.000190318	3.06672E-06	免疫
258	1.194096109	0.000339175	0.000263359	免疫
259	1.194065862	0.000190585	7.47758E-05	免疫
260	1.19390711	0.000236458	0.000140202	免疫
261	1.193203867	0.000595529	0.000538726	免疫
262	1.193183504	0.000203616	9.94699E-05	免疫
263	1.193086823	0.000190318	1.03911E-05	免疫
264	1.193068914	0.00053272	0.000473181	免疫
265	1.192890687	0.000194259	8.6845E-05	免疫

266	1.192862248	0.000190585	7.07744E-05	免疫
267	1.191959549	0.001980022	0.001933434	免疫
268	1.191727576	0.000190318	3.59458E-05	免疫
269	1.19169403	0.000190318	3.35943E-05	免疫
270	1.191457327	0.000190318	1.58474E-05	免疫
271	1.190917338	0.000190318	3.2688E-05	免疫
272	1.19084303	0.000197577	9.35587E-05	免疫
273	1.190744302	0.000275396	0.000194397	免疫
274	1.190504767	0.000190318	4.37089E-05	免疫
275	1.190493985	0.000190318	5.63296E-05	免疫
276	1.19047063	0.000197577	9.26462E-05	免疫
277	1.190369905	0.00103073	0.000982226	免疫
278	1.190186142	0.000190318	5.1042E-05	免疫
279	1.189884825	0.000190318	2.93967E-05	免疫
280	1.189598135	0.000190318	4.56676E-05	免疫
281	1.189191627	0.000915634	0.000861773	免疫
282	1.188928982	0.000190318	3.12731E-05	免疫
283	1.188579442	0.000236458	0.000136615	免疫
284	1.188149935	0.00035878	0.000285442	免疫
285	1.188067975	0.000190585	7.48475E-05	免疫
286	1.187779274	0.000235024	0.000132037	免疫
287	1.187507007	0.000249741	0.000154252	免疫
288	1.187477184	0.000190318	8.80731E-06	免疫
289	1.18733157	0.000190318	8.7159E-06	免疫
290	1.187294832	0.000190318	3.14804E-05	免疫
291	1.187269786	0.000190585	7.42594E-05	免疫
292	1.18676595	0.000508992	0.000450607	免疫
293	1.186090957	0.000190318	2.59098E-05	免疫
294	1.185876603	0.000190318	1.4985E-05	免疫
295	1.185799969	0.000235024	0.000131543	免疫
296	1.185573628	0.000270662	0.000182572	免疫
297	1.185403394	0.000295776	0.000218048	免疫
298	1.185337077	0.000190318	2.75867E-05	免疫
299	1.185296999	0.000190318	6.49959E-05	免疫
300	1.185190065	0.000595824	0.000541499	免疫

表8.f2

251	TTTAGTTATGATAGAGGAAATCACGCTATCGACTTCTTCCTGGTTTAGTCTTAGGAGGGT

252	GCTTCAAAAAATAAAACTAAAAATATGTTCGAACTCCTGACCTCAGGTAATCTATCCGCC
253	GGTATTGATATAAAATAGTGATTTTATATCGATCTCCTGATCTCGTGATCTACCTTCCTT
254	CAGTAACTTCAGTTTTTTATTTACTCATTCGAACTCCTGACCTCAGGTAATCTATCCGCC
255	GTCACACTCTTACCAAGCTAAAACTCTTTCGATCTCCTGACCTCGTGATTACAGGTGTGA
256	TTCCAAAATTCTGAGATTCTTAATTATGTCGAACTCCTGACCTCAGTCAATCTGCCCACC
257	AAGAATTAAGAGTAAAAATTATGTGAGGTCGAACTGCTGACCTCGTTATCCACCCACTTC
258	TCCTCAAAAAAATTAAAAATAGAACTACTCGAGACCATCCTGGCTAATTTGGTGAAACCC
259	AATTTTAGACCAACATCCCTGATGAACATCGAGACCAGCCTGAACAATATAGTGAGACCC
260	GGTGGGTGGATCACTTCAAGTCAGGAGTTCGATCTCCTGACCTAGTGATCCACCCACCTC
261	ACGGAATCTGGATTGAATAAATAGGGAATCGATCTCTTGACCTCGTGATCCAATCACCTT
262	AATAGAGACCATATTGGCCAGGATGGTCTCGAGGGTAGTCATGTTTTCCTTCCTGAGGAT
263	TACCAGGGATGTCTGAAGGAACTAAGAGTCGATCTCCTGACTTTGTGATCCTCCCACGTC
264	CTTGGAAGACAGAAAAATACCTAATCTTTCGAACTCCTGACCTTATAATCCCCCTGCCTT
265	AGCTGGGGTTAAATTCATTTAAATGAGTTCGAACTCCTGACCTCACGTAATTCTCCCACC
266	AGCAACTCTTAATCTTCAGGCTTCCTTCTCGATTTTAGATCTTTCCTGCTTTCTCTTGTG
267	CCTTACAAAAAGTTCTAAAGGGAGTTGTTCGAGGAGTATCTTTGTGGCTTTCTCTGTATT
268	TCTCTAAACATAAATTGTGAAGATTCCATCGAACTCCCGACCTCAGAGGATCTGTCTGCC
269	GAGCCCAGTAGTTCAAGGTTTCAGTGAGTCGAACTCCTGACCTCATGTGATTTGGCCGCT
270	GAGGCAGGCAAATCACGAGCTCAGGAGATCGAACTCCTGACCTCATGATTTGCCTGCCTC
271	TGGCTGATTTCCAGAGAAGAATACAAACTCGAGACCAGCCTTGACCAATATGGTGAAATC
272	TGAGAACAGATTCTCTAGAAAAGTCGCCTCGAGACCAGCCTAGATAACTTGGTGAAACTC
273	AAAGCCCTGTTATCAAATTAGGTCACAATCGAACTCCTGACCTCAAAAGATCTGCTCGCT
274	ATGTTGTAACCAAAAGAACTTAAACATTTCGATCTCCTGACCTTGTCAT

	CCACCTACCTC
275	TTTTCCCTTCTCACAGGTATTGTGTTGTTCGATCTCTTGACCTCGTACTCTGCCTGCCTT
276	CTCCTTACTTCATTATGACTGGATTTGATCGAACTCCTGACCTGATGATCCCCCTACTTG
277	GAAAGCCAAGCTGGGTGGACTCAGGAGTTCGATGCAAAAATCCTCAATAAAATACTGGCA
278	AGTCACACATACAACTTTAGTGTACCATTCGATCTCCAGACCTTGTGATTTGCCTGCCTT
279	TTAATACAAAAAACTAATTAAAATTTAATCGAACTCCTGACCCCAGGTGTTCTACCCGCC
280	AGCGGTTTTTTTGTGATGTTAGAGATGTTCGAACTCCTGACCTCAAAAGATCTGCTCGCT
281	GTGGAGACCCTAACTGCTTTTAGGGAGATCGAGGAATTTATCCATTTCTTCTAGATTTTC
282	TGTACAAGCATATTCATTGATGTCTTGTTCGAACTCCTTGACCTCAGGTGATCTACCTGC
283	TGGATCATGGGAGGCCTAGGTCGGGAGTTCGATGGTCTTTACAATTTGGCTTGTTTTTGC
284	ATTTCTTTCTTCTTCCCATTTTCTAAAATCGAACTCCTGACCTTGGGTAATCCACCCTCC
285	TTGTCTTTGCACCTTTTTCAAAAATTAGTCGAACTCCTGATCTTATGATCCACCCACCTC
286	CCTGAACCTTTTGGGCTGAACTTCACCTTCGAACTCCTGACCTCAAGCTATCCATCTGCC
287	CTATTCTTGCATTGCTACAAAGAAACATTCGATCTCTTGAACTCATGATCGCCTGCCTCA
288	AAATACTTTGTTATATATAAAATGGAGTTCGAACTCTTGACCTCAAGTGATCACCCATCT
289	GGTGTTCACCATATTAGTCAGGTTGGTCTCGAGGCTTCTCTGGGTTCATTTCCTTTAAAT
290	AATTTTAGACCAATATGCCTGATGAACATCGAACTCCTGACCTGGGCCTTCCAAAGTGCT
291	GAGAGTATAAGTGTTATGATTGGCCACTTCGATCTCTTGACCTCGTACTCTGCCTGCCTT
292	ATTTTCACCAAAACCTTTTAATAAGAATTCGAACTCCTGATCTCGTGATATGCTGGCCTC
293	AATTTGAATATAGTAGGAGCTATTTAAGTCGAACCCCTGACCTCATGATCTTCCCACCTT
294	ATGTATTCTTCAAAGTTAGTACTTTTGTTCGAACTCCTGGCCTTATGTAACCCACCTGCC
295	TCAAGAGGTGAAACCCTTATTGGAGGAATCGAACTCCTGGCCTTATGTAACCCACCTGCC
296	CCATTTGTTTGTATCCTCTTTTATTTCATCGATCTCCTGACCTCGTGCGCAAGAGCAATG

297	AACTGAAGGAGCTCTTAATGGCCAAAACTCGAGACCATCCTGGTCAACACTGTGAAAACC
298	GGTGAGAGAATTGCTTGACCCAAGGAGTTCGATCTCCTGACCTCAGATGATTTGCCTGCC
299	CAAAAATTGCCAAAAATAAGTAGGTTTTTCGAACTCCTGACTTCGGTGATCTACCTGCCG
300	CTCAAAGAACTTAAAACAAAATTACCATTCGAAGTCCTGACCTCAGGTAATCCTGCTGCC

表8.f3

251	12	46827238	46827267	46879131	46879160
252	22	28600398	28600427	28758507	28758536
253	11	9477642	9477671	9685855	9685884
254	22	28559355	28559384	28758507	28758536
255	17	1411119	1411148	1635962	1635991
256	5	74329889	74329918	74537629	74537658
257	12	14620918	14620947	14668392	14668421
258	X	2349095	2349124	2530522	2530551
259	18	56075452	56075481	56154643	56154672
260	19	17318588	17318617	17372679	17372708
261	12	122523594	122523623	122688872	122688901
262	4	4152462	4152491	4285265	4285294
263	11	118323850	118323879	118462785	118462814
264	15	72172049	72172078	72358433	72358462
265	12	8956668	8956697	9058979	9059008
266	1	160208003	160208032	160387701	160387730
267	22	34726358	34726387	34750118	34750147
268	18	8623208	8623237	8834565	8834594
269	3	10166865	10166894	10269618	10269647
270	22	37737426	37737455	37945878	37945907
271	11	47310705	47310734	47407572	47407601
272	10	73661600	73661629	73903371	73903400
273	11	78798296	78798325	78965089	78965118
274	15	65465779	65465808	65596354	65596383
275	1	193663210	193663239	193673928	193673957
276	5	30107213	30107242	30144496	30144525
277	18	433730	433759	539298	539327
278	12	15699616	15699645	15806655	15806684
279	19	33182630	33182659	33332862	33332891
280	11	78857255	78857284	78965089	78965118
281	Y	20398853	20398882	20504302	20504331

282	20	31369845	31369874	31617245	31617274
283	1	147709078	147709107	147802892	147802921
284	17	30923925	30923954	31156715	31156744
285	9	94043932	94043961	94067154	94067183
286	5	31866964	31866993	31910751	31910780
287	10	114529346	114529375	114726280	114726309
288	12	64438851	64438880	64470581	64470610
289	17	36002739	36002768	36030369	36030398
290	3	154855620	154855649	154966862	154966891
291	1	193673928	193673957	193889893	193889922
292	3	158507727	158507756	158576895	158576924
293	17	63803997	63804026	64033153	64033182
294	17	31302846	31302875	31324783	31324812
295	17	31224133	31224162	31324783	31324812
296	19	42697459	42697488	42770733	42770762
297	8	8422739	8422768	8694306	8694335
298	2	9545860	9545889	9601869	9601898
299	6	136360367	136360396	136523812	136523841
300	X	70972143	70972172	71218058	71218087

表8.f4

251	12	46823268	46827267	46875161	46879160	1
252	22	28596428	28600427	28754537	28758536	NA
253	11	9477642	9481641	9685855	9689854	NA
254	22	28555385	28559384	28754537	28758536	NA
255	17	1411119	1415118	1631992	1635991	NA
256	5	74325919	74329918	74537629	74541628	1
257	12	14616948	14620947	14668392	14672391	1
258	X	2345125	2349124	2530522	2534521	NA
259	18	56075452	56079451	56150673	56154672	1
260	19	17318588	17322587	17372679	17376678	NA
261	12	122519624	122523623	122684902	122688901	NA
262	4	4148492	4152491	4281295	4285294	1
263	11	118323850	118327849	118462785	118466784	1
264	15	72172049	72176048	72354463	72358462	NA
265	12	8956668	8960667	9055009	9059008	1
266	1	160204033	160208032	160387701	160391700	1
267	22	34722388	34726387	34750118	34754117	NA
268	18	8623208	8627207	8834565	8838564	1
269	3	10166865	10170864	10265648	10269647	1

270	22	37733456	37737455	37941908	37945907	1
271	11	47310705	47314704	47403602	47407601	1
272	10	73661600	73665599	73899401	73903400	1
273	11	78798296	78802295	78965089	78969088	NA
274	15	65465779	65469778	65592384	65596383	1
275	1	193659240	193663239	193673928	193677927	1
276	5	30107213	30111212	30144496	30148495	1
277	18	429760	433759	539298	543297	NA
278	12	15695646	15699645	15802685	15806684	1
279	19	33178660	33182659	33328892	33332891	1
280	11	78853285	78857284	78965089	78969088	1
281	Y	20394883	20398882	20504302	20508301	NA
282	20	31369845	31373844	31617245	31621244	1
283	1	147709078	147713077	147798922	147802921	NA
284	17	30923925	30927924	31152745	31156744	NA
285	9	94039962	94043961	94063184	94067183	1
286	5	31866964	31870963	31910751	31914750	NA
287	10	114529346	114533345	114722310	114726309	NA
288	12	64438851	64442850	64466611	64470610	1
289	17	35998769	36002768	36030369	36034368	1
290	3	154851650	154855649	154966862	154970861	1
291	1	193673928	193677927	193885923	193889922	1
292	3	158503757	158507756	158576895	158580894	NA
293	17	63800027	63804026	64029183	64033182	1
294	17	31302846	31306845	31324783	31328782	1
295	17	31224133	31228132	31324783	31328782	NA
296	19	42697459	42701458	42766763	42770762	NA
297	8	8422739	8426738	8694306	8698305	NA
298	2	9541890	9545889	9601869	9605868	1
299	6	136360367	136364366	136519842	136523841	1
300	X	70968173	70972172	71214088	71218087	NA

表8.f5

251	9.261492616	9.004196745	613.7437493	513.4915569
252	NA			
253	NA			
254	NA			
255	NA			
256	11.76159151	11.50509958	3472.096936	2906.565252
257	9.808161043	9.551888572	896.5007891	750.5938044
258	NA			

259	12.74848001	12.4925976	6881.369583	5762.973217
260	NA			
261	NA			
262	10.86784306	10.61302713	1868.730827	1566.172195
263	11.38390481	11.12920578	2672.371408	2239.880079
264	NA			
265	8.51769591	8.263234065	366.5067376	307.2425173
266	9.376431103	9.122003653	664.6408256	557.1815411
267	NA			
268	10.75771082	10.50465634	1731.384963	1452.8362
269	11.81117631	11.55816244	3593.505825	3015.460122
270	10.34582431	10.09309703	1301.377959	1092.257296
271	10.76109087	10.50901759	1735.446128	1457.234749
272	9.791897887	9.539914629	886.4514984	744.3898785
273	NA			
274	10.20339011	9.951816717	1179.034415	990.3651355
275	10.09625577	9.844695441	1094.651386	919.4934205
276	10.36334483	10.1118128	1317.27864	1106.519226
277	NA			
278	10.15172368	9.900536452	1137.557438	955.7811153
279	10.17251702	9.921695087	1154.071603	969.9019422
280	10.28586021	10.03538592	1248.396245	1049.426869
281	NA			
282	11.04901568	10.79935314	2118.776472	1782.088337
283	NA			
284	NA			
285	9.696657759	9.448040378	829.8218065	698.4632396
286	NA			
287	NA			
288	9.300962164	9.05306237	630.7664708	531.1819707
289	9.351949998	9.104227125	653.4576811	550.3582132
290	12.59587528	12.34819705	6190.650419	5214.080155
291	10.27490953	10.02726173	1238.95625	1043.533883
292	NA			
293	10.19282148	9.946606833	1170.428819	986.7951626
294	8.270976292	8.025022395	308.8957673	260.4788446
295	NA			
296	NA			
297	NA			
298	11.37072493	11.12542755	2648.068866	2234.021796
299	10.15948714	9.914238539	1143.695387	964.9019506
300	NA			

表8.f6

251	Hg38_12_46821759_46827269_46865284_46879162_FF	OBD183-1801
252	Hg38_22_28598306_28600429_28753634_28758538_FF	OBD183-1805
253	Hg38_11_9477640_9482033_9685853_9690988_RR	OBD183-1809
254	Hg38_22_28554668_28559386_28753634_28758538_FF	OBD183-1813
255	Hg38_17_1411117_1412617_1634184_1635993_RF	OBD183-1817
256	Hg38_5_74325511_74329920_74537627_74543794_FR	OBD183-1821
257	Hg38_12_14611683_14620949_14668390_14673240_FR	OBD183-1825
258	Hg38_X_2345279_2349126_2530520_2531841_FR	OBD183-1829
259	Hg38_18_56075450_56084543_56148926_56154674_RF	OBD183-1833
260	Hg38_19_17318586_17321060_17372677_17376287_RR	OBD183-1837
261	Hg38_12_122518390_122523625_122683979_122688903_FF	OBD183-1841
262	Hg38_4_4146074_4152493_4280585_4285296_FF	OBD183-1845
263	Hg38_11_118323848_118335396_118462783_118464333_RR	OBD183-1849
264	Hg38_15_72172047_72177812_72350397_72358464_RF	OBD183-1853
265	Hg38_12_8956666_8971971_9052225_9059010_RF	OBD183-1857
266	Hg38_1_160202241_160208034_160387699_160390980_FR	OBD183-1861
267	Hg38_22_34722666_34726389_34750116_34757594_FR	OBD183-1865
268	Hg38_18_8623206_8633807_8834563_8839858_RR	OBD183-1869
269	Hg38_3_10166863_10171451_10267732_10269649_RF	OBD183-1873
270	Hg38_22_37732067_37737457_37944696_37945909_FF	OBD183-1877
271	Hg38_11_47310703_47316087_47405431_47407603_RF	OBD183-1881
272	Hg38_10_73661598_73666900_73900120_73903402_RF	OBD183-1885
273	Hg38_11_78798294_78806874_78965087_78972317_RR	OBD183-1889
274	Hg38_15_65465777_65469194_65573794_65596385_RF	OBD183-1893
275	Hg38_1_193655980_193663241_193673926_193687017_FR	OBD183-1897
276	Hg38_5_30107211_30110692_30144494_30156052_RR	OBD183-1901
277	Hg38_18_427721_433761_539296_550050_FR	OBD183-1905
278	Hg38_12_15684229_15699647_15801742_15806686_FF	OBD183-1909
279	Hg38_19_33180896_33182661_33328178_33332893_FF	OBD183-1913
280	Hg38_11_78848038_78857286_78965087_78972317_FR	OBD183-1917
281	Hg38_Y_20386719_20398884_20504300_20520750_FR	OBD183-1921
282	Hg38_20_31369843_31372347_31617243_31621976_RR	OBD183-1925
283	Hg38_1_147709076_147716288_147799500_147802923_RF	OBD183-1929
284	Hg38_17_30923923_30926868_31150085_31156746_RF	OBD183-1933
285	Hg38_9_94033256_94043963_94058786_94067185_FF	OBD183-1937
286	Hg38_5_31866962_31870685_31910749_31916612_RR	OBD183-1941
287	Hg38_10_114529344_114531737_114712352_114726311_RF	OBD183-1945
288	Hg38_12_64438849_64448996_64463496_64470612_RF	OBD183-1949
289	Hg38_17_35998435_36002770_36030367_36035489_FR	OBD183-1953

290	Hg38_3_154848097_154855651_154966860_154974838_FR	OBD183-1957
291	Hg38_1_193673926_193687017_193882412_193889924_RF	OBD183-1961
292	Hg38_3_158501077_158507758_158576893_158580745_FR	OBD183-1965
293	Hg38_17_63801674_63804028_64026936_64033184_FF	OBD183-1969
294	Hg38_17_31302844_31307239_31324781_31330350_RR	OBD183-1973
295	Hg38_17_31224131_31234469_31324781_31330350_RR	OBD183-1977
296	Hg38_19_42697457_42701566_42762015_42770764_RF	OBD183-1981
297	Hg38_8_8422737_8427114_8694304_8696852_RR	OBD183-1985
298	Hg38_2_9540565_9545891_9601867_9603721_FR	OBD183-1989
299	Hg38_6_136360365_136366092_136518089_136523843_RF	OBD183-1993
300	Hg38_X_70970170_70972174_71213839_71218089_FF	OBD183-1997

表8.f7

251	GTGCACATGAGATCGGGC ACAGAT	OBD183-1803	AGCACCAGGCATTCGTT TCATAAC
252	CCCCGCTACCTAAGAGGCT AAGG	OBD183-1807	GCTGCCTAAGGGTCTCT TTGGTC
253	GGTGATGCCCCAAACAGTT TGTTAT	OBD183-1811	GAACAGTCGGGCTTTCT AGGGCG
254	CTCAGTCTCCAAAGAATCC GAAAGTA	OBD183-1815	GGCTGCCTAAGGGTCTC TTTGGTCTA
255	GAGGAGAGTGGCAGAAGG ACCAA	OBD183-1819	CCTGGCTGTCATCCAAC CACCAC
256	GCCTCACAGAGCCTCATTT CCAC	OBD183-1823	TAGTGGATTCCTGGCTG GGCACG
257	AATCCTTTAACGGTCCTCG TGCGAT	OBD183-1827	ACTTATACCCACGTACC CAACATGT
258	CTCCAGAAGCCGTCTTATG TGGGC	OBD183-1831	GATGTCGATGAGCAAAA GTGGGTGG
259	ACGCGACGTTACTCTGATG GCAA	OBD183-1835	GCTCGGGAACTGCCTGG ACGCCCTC
260	GTATTCATCATGATAATGC GTAGG	OBD183-1839	CGTGTATACATAAAGAC TGTACGGT
261	GCACTACCAGTTGCCGTTA CACTA	OBD183-1843	CATTTACACTGGGGTGA GATACG
262	GCCTTGCGAGGGCCATCCT ATTT	OBD183-1847	TGAGAGGAAAAATATAT CGTTAGT
263	CTCGGTGGGTTAAATATGA TTTGG	OBD183-1851	AAGAACTTAGTTTTGAG ATTATCCC
264	GGACGAGACGCGCATGGG GTGAC	OBD183-1855	GCGTAAGTTCAACTATG ATTCTATT
265	GCCCCACCTGGTCCACAGA AATC	OBD183-1859	GCGGAACTTCAAAGGTC AGGTGC

266	CAGCCTGTCCTGCAATGAGGAATAT	OBD183-1863	ATCTACGAGCTGCCCTCCCTATAC
267	ACAGAATTCGAAACATCTGGGGATT	OBD183-1867	CGCAGGGCCGTAAGTTACGCTCAGA
268	TTTATGACTTACATCTCTATAGG	OBD183-1871	TCAACTGCCCTTGGGAGACCAATGC
269	ATACAACTAGGACTAGGGCGCACG	OBD183-1875	AACCTCCATGTGTTCGGCTAAAAG
270	TTAGGCCCGTATGTACAGTCACCG	OBD183-1879	CCATGCATTTCTTAATCCTTTGTC
271	CTTGAGCTCGGAGAAATTACAGTC	OBD183-1883	CCGAAATTGTTTATGACTTAGTA
272	CAGTGACAAATTCTTGCCACGCGGT	OBD183-1887	CACCCTCCAAAAGAGCAGCAGAT
273	CGAGAGTCCAATTCACTTGTTAG	OBD183-1891	TTTGGGCGTAGCTGTGTCGAGTGC
274	CCGCAGCAACTACACTCAGCCTT	OBD183-1895	ATAATGGACTGGGCTGGGCGTGG
275	ATAGGGCCGTGTAGAGGATCTCAAA	OBD183-1899	CCGTCTCGCTGTACTAACTCGCA
276	AAAAAGGAAACAGCCGTCGCCTTGA	OBD183-1903	TCAAGCGAGCACGTTTTTTGCAGT
277	GCCGAGAACATTCACCGCTTTCC	OBD183-1907	TACCAGCTCGAGGTGTTAATACC
278	AAGTCAATGCGTCGATGACGTGGGT	OBD183-1911	ATTGCAGAAACGTCACGTCCTGGCC
279	CGCACCACATTTTATTTCCTACAGTC	OBD183-1915	TGTGACTGTGCTACCACCAACTACGG
280	CCCGGGCCCACTTGTTTTTACCCAT	OBD183-1919	TCGAATATCGAGCTCCATCAGGCT
281	AAGCACATTAGGCTCAATGTGTACA	OBD183-1923	CGCAGTATGCAACGCTTGCGGACCG
282	CAATGAGGGCAGAGGAATAGAGGAAT	OBD183-1927	TGAGATGATGGGCACCAGGGTAATGG
283	CATTCCTGGGATTATTAGGCGTGGC	OBD183-1931	CGTCCGCAGACATGTCTCTTCGGTA
284	GTTGTCCCAGCCCTAAGTAGATGATA	OBD183-1935	AGTGCTGTGACATTGGTGGTAGTGGC
285	TAAGCTTTCTAGGAGTCATCAAG	OBD183-1939	CGGCCCTATCCTGAGATTGGTATT
286	CCACGGCATTTACTGTGCTCCAG	OBD183-1943	AAAGCAGGAACTGGCTGGGCGTG
287	GATAGTTCTTTAGTAGCGCACTC	OBD183-1947	ACACACGTCGTTGTATCATCAATGT
288	TTATTCGCTCAGCGTCATC	OBD183-1951	GTCTTCATAGCGAGGAC

	GAAA		TACGCTGA
289	CCGTTCAGACGGCTAGACTCAGCAG	OBD183-1955	TGTTTAAAAAGGTGCCCGAGTGCG
290	AAAACTGACGGGTCGAACTCTGCT	OBD183-1959	ATGCTACCAAGAGCCTAATGGGAT
291	TCCTGCTCTCGTCCATGGTATTCGC	OBD183-1963	GCAGGAATACTTGTGGGTGCGCAC
292	AGGTCACCTAAGAAGGGTTGCAT	OBD183-1967	CCTGCACCGGTTATATGAACTACA
293	TGAAAAGAGTGCTCCTGCGATAAAT	OBD183-1971	AGAGAGCCTTTAGAAACACACCG
294	GTTCTCTATGCGCAGGTCCCCTTCG	OBD183-1975	CTGTAAGGAAGTTAGTCAAGACGTA
295	CTTCTCTATCTTCCACAACCTCACCA	OBD183-1979	TAAATGGGAGCAGCCACAGTGAGGAC
296	TTGAATCGTAGAATACCAGTAGTTT	OBD183-1983	GGGTCCATGCGAAGGGTGGCAGACC
297	GTGTTTACCAATGTTCCACCCCC	OBD183-1987	GTTTTATAAAGTGAGGACGGACCG
298	CGCGCCTTTTGGGAAGCTCACGT	OBD183-1991	GTAGTGGCCACCCTCTTCAAGCT
299	AATACCTACCCTTGCCCTTCCCACCA	OBD183-1995	AATCTCTCTCGGTGTTTTAGCCGTCA
300	AGTGCCTTCAAGACCCCCAAGATC	OBD183-1999	GGAAAGTGAGTATATTGCTAGGG

表8.f8

301	Hg38_5_111518564_111524189_111570082_111578257_FR	CAMK4	53895.56742
302	Hg38_3_87150717_87152334_87167991_87177284_FF	POU1F1	64124.1068
303	Hg38_5_74394031_74404922_74537627_74543794_RR	HEXB	65086.74306
304	Hg38_16_57311821_57315910_57359852_57364698_FR	CCL22	65988.63889
305	Hg38_X_2530520_2531841_2565626_2568771_RF	CD99	59592.42497
306	Hg38_4_104772558_104786165_104802495_104808042_FR	TET2	62339.16643
307	Hg38_16_57156886_57158385_57359852_57364698_RR	CCL22	62836.77792
308	Hg38_14_30757124_30766270_31037033_31039641_RR	COCH	59487.29689
309	Hg38_2_68135773_68139581_68359452_68365969_RR	PLEK	64241.20036
310	Hg38_16_2330922_2335048_2522663_2525074_RF	ATP6V0C	57154.64158
311	Hg38_15_63964667_63969673_64105032_64108785_FF	DAPK2	61998.74552
312	Hg38_22_38681470_38688482_38808896_38820306_RR	GTPBP1	65196.99376
313	Hg38_7_100032804_100034042_100078292_100082051_FR	ZNF3	59483.99451
314	Hg38_3_70698156_70700092_70796347_70803301_FR	FOXP1	50093.92319
315	Hg38_2_120597115_120611528_120697175_120701136_RR	GLI2	64773.43449
316	Hg38_19_48331809_48333020_48561743_48564039_FF	KDELR1	63102.10432

317	Hg38_3_70698156_70700092_70796347_70803301_RR	FOXP1	50518.81561
318	Hg38_5_58504296_58515741_58568633_58574449_FF	GAPT	64526.10527
319	Hg38_1_7824282_7826917_7994232_7998947_FF	PARK7	66312.10271
320	Hg38_X_77765454_77772092_77954363_77959007_RR	ATP7A	65901.89086
321	Hg38_3_158501077_158507758_158576893_158580745_RR	MLF1	64995.94624
322	Hg38_1_193673926_193687017_193851226_193858598_RF	CDC73	67151.59303
323	Hg38_12_116931027_116934300_116959223_116967078_RF	TESC	67895.68024
324	Hg38_17_7665587_7668453_7811362_7813705_FF	EFNB3	68021.43322
325	Hg38_12_87675372_87683936_87811804_87814408_FF	C12orf29	59072.48374
326	Hg38_12_46746378_46756718_46865284_46879162_FF	PCED1B	56348.34876
327	Hg38_12_56269538_56273851_56415250_56418662_FR	IL23A	58735.67365
328	Hg38_7_26158147_26166959_26344790_26347647_FF	SNX10	67515.79006
329	Hg38_4_40800075_40804237_41041101_41047221_RR	RBM47	63952.65387
330	Hg38_5_101857205_101863977_102113262_102119968_RR	SLCO4C1	54021.35936
331	Hg38_22_38970835_38973283_39095838_39099483_FR	APOBEC3A	65531.89713
332	Hg38_5_55874716_55883166_56069488_56074299_RR	IL31RA	62997.34802
333	Hg38_5_30097465_30100060_30144494_30156052_RR	DROSHA	62532.2281
334	Hg38_3_30481415_30486448_30652453_30660274_RR	TGFBR2	62959.29829
335	Hg38_19_49754688_49759950_49902219_49904931_RR	AKT1S1	64821.01619
336	Hg38_10_26780453_26788708_26959699_26967983_RR	ABI1	54431.98717
337	Hg38_8_129796093_129803717_129899083_129904705_RR	FAM49B	57906.95109
338	Hg38_5_30008006_30016904_30144494_30156052_FR	DROSHA	65273.34565
339	Hg38_11_65076105_65079526_65228515_65232564_RR	CAPN1	64028.9213
340	Hg38_19_51523072_51524696_51712234_51719472_FR	SIGLEC14	64127.44789

表8.g1

301	1.184813122	0.000595529	0.00053948	免疫
302	1.184689343	0.000190318	4.54574E-05	免疫
303	1.184668406	0.000190318	3.06628E-05	免疫
304	1.18465428	0.000190318	1.14318E-05	免疫
305	1.184410724	0.000435221	0.000367378	免疫
306	1.184302874	0.000836477	0.000774971	免疫
307	1.18428889	0.000190318	4.23498E-05	免疫
308	1.184242905	0.000190318	6.18658E-05	免疫
309	1.18418235	0.000190585	7.59141E-05	免疫
310	1.184026398	0.00061716	0.000562705	免疫
311	1.183975176	0.000190318	2.49364E-05	免疫
312	1.183284508	0.000197577	9.11215E-05	免疫
313	1.183113527	0.000193014	8.45857E-05	免疫

314	1.183036403	0.000781416	0.00072166	免疫
315	1.183020166	0.000191193	8.1694E-05	免疫
316	1.18279674	0.000190318	4.91079E-05	免疫
317	1.182516616	0.000877054	0.000820303	免疫
318	1.182098422	0.000190318	2.6743E-05	免疫
319	1.181843928	0.000190318	5.45416E-06	免疫
320	1.181837185	0.000190318	1.47871E-05	免疫
321	1.18179292	0.000191193	8.2668E-05	免疫
322	1.181711187	0.000190318	3.11695E-05	免疫
323	1.181481439	0.000190318	4.55554E-05	免疫
324	1.181451408	0.000190318	1.56118E-05	免疫
325	1.181422328	0.000349894	0.000276828	免疫
326	1.181382308	0.000492539	0.000433145	免疫
327	1.181296054	0.001179304	0.001134213	免疫
328	1.181133151	0.000190318	2.00708E-05	免疫
329	1.181131206	0.000480329	0.000420995	免疫
330	1.181018432	0.001509728	0.001465324	免疫
331	1.181002423	0.000190318	3.1194E-05	免疫
332	1.18088206	0.000235024	0.000134191	免疫
333	1.180627075	0.0002944	0.000213873	免疫
334	1.180573942	0.000190318	6.57555E-05	免疫
335	1.180542127	0.000190318	5.55389E-05	免疫
336	1.180416072	0.000656661	0.000602583	免疫
337	1.180322929	0.000298508	0.000223881	免疫
338	1.180072895	0.000228221	0.000125521	免疫
339	1.180011257	0.000190585	7.63618E-05	免疫
340	1.179876337	0.000203616	9.81568E-05	免疫

表8.g2

301	CTAAACCAGTAAATGTTTAATAAAAAGATCGAGGGGTATCTTTGTGGCATTCTCTGTATT
302	TGTTTTCATTTTAAGATGAAGACAGCCTTCGAGACCATCCTGGCTAACATGATGAAATCC
303	ATGTGTTGTTCTCAATTTTGCACTTGCTTCGAACTCCTGACCTCAGTCAATCTGCCCACC
304	GATGGGCAGATTACTTGAAGTCAAGAGTTCGAACTCCTGACCTCAAGTGAAACTCCCATC
305	ATACAAGAGTCATGTACAAGACCTTGCTTCGAGACCATCCTGGCTAATTTGGTGAAACCC

306	CCAAGTAAAATGTTGTTCACTTTTGTGCTCGATGCAAAAATCCTCAA TAAAATACTGGCA
307	AATGTTCTCTTATGAACATCATTTAAGTTCGAACTCCTGACCTCAAG TGAAACTCCCATC
308	ACCTGAAGAAACATTGTTTTCTTAAAAATCGATCTCTTGACCTTCTG ATCTGCCTGCCTC
309	AGAAGTTTAAGCTACAAAATAAAATGTTTCGAACTCCCGACCTCCAG TGGAAGTTCACAC
310	TCTCTCTGGCCACTTATTTATTTATTTTTCGATCTCCTGACCTGGAAC ATCACCCTTTTG
311	GGCAAGTGGATAGATTGAGCCCAGGAAGTCGAACTCCTGACCTAAG GTGATCTGTCCACC
312	TACAACAGGCTCCAAGACAACACTTTATTCGAACTCCTGACCTCAGA TGATTCATCTGCC
313	ACCTGATTTTGCATCGGAGAATTCACACTCGAGACCAGCCTGGCCAG GATGATGAAACCC
314	AGAATAAGAAGGGAAGATAAGGACAGAATCGAACTTCCTCCTTTAG CTCGGAGAAGTTTG
315	CCTTACGATGGGGTCCCAGCTGGACACCTCGAGACCAGCCTGAGAA ATACGGTGAAACCC
316	GAGCTAAATCGCTTTGATTGGCTGTTCATCGATCTCCTGACTTCGTG ATCAACCCACCTC
317	AATGTAAAGCATTACATGGAAACAGTACTCGAACTTCCTCCTTTAGC TCGGAGAAGTTTG
318	TTGCTGACTCTGGAGAGTCCAGGTGGTCTCGAGGACTATCTTTGTGG CGTTCTCTGTATT
319	TCTGAGAAACTTTTTTGTGAGAAACTGATCGAACTCCTGATCTCAGG AGATCCACCCACC
320	TTTCTCTAAGGTATGTTAAAACTCTTGTTCGAACTCCTGACCTCATTA TCTGCCCACCTT
321	GAAATCAAGATAGGAATTTAAAAATTCTTCGAACTCCTGATCTCGTG ATATGCTGGCCTC
322	CCAAAACAAAAATAGCACTGACAAAAGATCGATCTCTTGACCTCGT ACTCTGCCTGCCTT
323	TGACAAAGAAAAAGTATGCAAAAAGAAGTCGAACTCCTGGCTTCAA GTAAGAGTTCACTT
324	CAGCAAAGTTTTATTGTAAAATAAGAGATCGAACTCCTGACCTCCAG TCATCCACCCGCG
325	TCCAACATTCAGAGTTTATTTATTTGAATCGATCTCTTGACTTCATGA TCCACCTGACTT
326	CAAAAAAATGAACAGTACTTTTTTCTTATCGACTTCTTCCTGGTTTAG TCTTAGGAGGGT
327	GTATTCTCAGTAGAAATTCTTTTATTTTTCGATCTCCTGACCTTGTCA TTCTCCCATCTC
328	GAATAAATGAAAGGCCTAGCTAAAGCAGTCGAACTCCTGACCTCAA

	GTAATCCAACCACC
329	TGAATGTCTTGGTAGTAATTTGACAATATCGATCTCCTGATCTTGTG ATTCCCCCACCTT
330	TCATCTATATTTTCTTCTCTTAGGTATTTCGATGTTCATCAGGGATGT TGGTTTAAAATT
331	TGAGATTTTGTCTCAAAAAAAAAAAAAGTCGAACTCCTGACCTCAG GTCATCAGCCTGCC
332	AAGTTCAACAAGGTTGCCAATTACCAAATCGAACTCCTGACCTCAGG CAGTCACCTTCTT
333	TCTGTCTTTGCTTTTGCAGTTTTCCTCATCGAACTCCTGACCTGATGA TCCCCCTACTTG
334	CACAGGGTGACAGGAGACAGAATGAGAGTCGAACTCCTGACCTCAG GTGAATAACCTGCC
335	TTATTTAGGAATGGTTTCCTTTAGCACTTCGAACTCCTGACTTCGGGT GATCCCTCCCAT
336	AAGATCGTTATTGCTTGAGCCCAGGAGTTCGAACTCCTGACCTCAAG AGATCTGTCCTCC
337	GTACCTGGGGGACAGAAATTGCAGTGAGTCGAACTCCTGACACCTC AGGTGATCTACCTG
338	CTGTTTTCTATCCTTCCTGATATTTCACTCGAACTCCTGACCTGATGA TCCCCCTACTTG
339	TTCAAAAGACAAAAAAGACAACCAAAAGTCGAACTCCTGACCTGAA GGGATCTGTCTGCC
340	AGTTACTGAGATAAGAGTTTTTAAAAAATCGAACTCGTGACCTCAAG TGGTCTCCCTGCC

表8.g3

301	5	111524158	111524187	111570084	111570113
302	3	87152303	87152332	87177253	87177282
303	5	74394033	74394062	74537629	74537658
304	16	57315879	57315908	57359854	57359883
305	X	2530522	2530551	2568740	2568769
306	4	104786134	104786163	104802497	104802526
307	16	57156888	57156917	57359854	57359883
308	14	30757126	30757155	31037035	31037064
309	2	68135775	68135804	68359454	68359483
310	16	2330924	2330953	2525043	2525072
311	15	63969642	63969671	64108754	64108783
312	22	38681472	38681501	38808898	38808927
313	7	100034011	100034040	100078294	100078323
314	3	70700061	70700090	70796349	70796378
315	2	120597117	120597146	120697177	120697206
316	19	48332989	48333018	48564008	48564037

317	3	70698158	70698187	70796349	70796378	
318	5	58515710	58515739	58574418	58574447	
319	1	7826886	7826915	7998916	7998945	
320	X	77765456	77765485	77954365	77954394	
321	3	158501079	158501108	158576895	158576924	
322	1	193673928	193673957	193858567	193858596	
323	12	116931029	116931058	116967047	116967076	
324	17	7668422	7668451	7813674	7813703	
325	12	87683905	87683934	87814377	87814406	
326	12	46756687	46756716	46879131	46879160	
327	12	56273820	56273849	56415252	56415281	
328	7	26166928	26166957	26347616	26347645	
329	4	40800077	40800106	41041103	41041132	
330	5	101857207	101857236	102113264	102113293	
331	22	38973252	38973281	39095840	39095869	
332	5	55874718	55874747	56069490	56069519	
333	5	30097467	30097496	30144496	30144525	
334	3	30481417	30481446	30652455	30652484	
335	19	49754690	49754719	49902221	49902250	
336	10	26780455	26780484	26959701	26959730	
337	8	129796095	129796124	129899085	129899114	
338	5	30016873	30016902	30144496	30144525	
339	11	65076107	65076136	65228517	65228546	
340	19	51524665	51524694	51712236	51712265	

表8.g4

301	5	111520188	111524187	111570084	111574083	NA
302	3	87148333	87152332	87173283	87177282	1
303	5	74394033	74398032	74537629	74541628	1
304	16	57311909	57315908	57359854	57363853	1
305	X	2530522	2534521	2564770	2568769	NA
306	4	104782164	104786163	104802497	104806496	NA
307	16	57156888	57160887	57359854	57363853	1
308	14	30757126	30761125	31037035	31041034	1
309	2	68135775	68139774	68359454	68363453	1
310	16	2330924	2334923	2521073	2525072	NA
311	15	63965672	63969671	64104784	64108783	1
312	22	38681472	38685471	38808898	38812897	1
313	7	100030041	100034040	100078294	100082293	1
314	3	70696091	70700090	70796349	70800348	NA

315	2	120597117	120601116	120697177	120701176	1
316	19	48329019	48333018	48560038	48564037	1
317	3	70698158	70702157	70796349	70800348	NA
318	5	58511740	58515739	58570448	58574447	1
319	1	7822916	7826915	7994946	7998945	1
320	X	77765456	77769455	77954365	77958364	1
321	3	158501079	158505078	158576895	158580894	1
322	1	193673928	193677927	193854597	193858596	1
323	12	116931029	116935028	116963077	116967076	1
324	17	7664452	7668451	7809704	7813703	1
325	12	87679935	87683934	87810407	87814406	NA
326	12	46752717	46756716	46875161	46879160	NA
327	12	56269850	56273849	56415252	56419251	NA
328	7	26162958	26166957	26343646	26347645	1
329	4	40800077	40804076	41041103	41045102	NA
330	5	101857207	101861206	102113264	102117263	NA
331	22	38969282	38973281	39095840	39099839	1
332	5	55874718	55878717	56069490	56073489	NA
333	5	30097467	30101466	30144496	30148495	NA
334	3	30481417	30485416	30652455	30656454	1
335	19	49754690	49758689	49902221	49906220	1
336	10	26780455	26784454	26959701	26963700	NA
337	8	129796095	129800094	129899085	129903084	NA
338	5	30012903	30016902	30144496	30148495	NA
339	11	65076107	65080106	65228517	65232516	1
340	19	51520695	51524694	51712236	51716235	NA

表8.g5

301	NA			
302	13.69963199	13.45512319	13304.549	11230.41165
303	11.8818126	11.6373293	3773.82707	3185.555597
304	9.341391495	9.096925399	648.6927455	547.579793
305	NA			
306	NA			
307	10.79493533	10.55091428	1776.639591	1500.17416
308	10.60237505	10.35841003	1554.651021	1312.780524
309	9.430097761	9.186206505	689.8303345	582.5372542
310	NA			
311	12.56847353	12.3248347	6074.178243	5130.325674
312	11.15640944	10.91361244	2282.516284	1928.966592

313	11.81006925	11.56748073	3590.749382	3034.999854
314	NA			
315	10.08324621	9.840771544	1084.824695	916.995945
316	11.28389732	11.04169515	2493.397741	2108.052599
317	NA			
318	10.79233693	10.55098677	1773.442609	1500.249536
319	10.52171506	10.28067554	1470.116798	1243.917884
320	11.33684904	11.09581775	2586.613966	2188.638164
321	9.125908582	8.88493132	558.6917017	472.7492373
322	9.387992848	9.147115368	669.9886514	566.9648038
323	8.807058565	8.566461601	447.9079818	379.1070829
324	11.46909828	11.22853799	2834.931736	2399.533081
325	NA			
326	NA			
327	NA			
328	12.41326573	12.17309412	5454.630414	4618.133366
329	NA			
330	NA			
331	12.06973489	11.82972297	4298.849518	3640.000592
332	NA			
333	NA			
334	12.55842206	12.31893366	6032.005646	5109.38403
335	11.07345524	10.83400571	2154.974733	1825.411125
336	NA			
337	NA			
338	NA			
339	10.55168093	10.31288031	1500.971564	1271.997665
340	NA			

表8.g6

301	Hg38_5_111518564_111524189_111570082_111578257_FR	OBD183-2001
302	Hg38_3_87150717_87152334_87167991_87177284_FF	OBD183-2005
303	Hg38_5_74394031_74404922_74537627_74543794_RR	OBD183-2009
304	Hg38_16_57311821_57315910_57359852_57364698_FR	OBD183-2013
305	Hg38_X_2530520_2531841_2565626_2568771_RF	OBD183-2017
306	Hg38_4_104772558_104786165_104802495_104808042_FR	OBD183-2021
307	Hg38_16_57156886_57158385_57359852_57364698_RR	OBD183-2025
308	Hg38_14_30757124_30766270_31037033_31039641_RR	OBD183-2029
309	Hg38_2_68135773_68139581_68359452_68365969_RR	OBD183-2033
310	Hg38_16_2330922_2335048_2522663_2525074_RF	OBD183-2037

311	Hg38_15_63964667_63969673_64105032_64108785_FF	OBD183-2041
312	Hg38_22_38681470_38688482_38808896_38820306_RR	OBD183-2045
313	Hg38_7_100032804_100034042_100078292_100082051_FR	OBD183-2049
314	Hg38_3_70698156_70700092_70796347_70803301_FR	OBD183-2053
315	Hg38_2_120597115_120611528_120697175_120701136_RR	OBD183-2057
316	Hg38_19_48331809_48333020_48561743_48564039_FF	OBD183-2061
317	Hg38_3_70698156_70700092_70796347_70803301_RR	OBD183-2065
318	Hg38_5_58504296_58515741_58568633_58574449_FF	OBD183-2069
319	Hg38_1_7824282_7826917_7994232_7998947_FF	OBD183-2073
320	Hg38_X_77765454_77772092_77954363_77959007_RR	OBD183-2077
321	Hg38_3_158501077_158507758_158576893_158580745_RR	OBD183-2081
322	Hg38_1_193673926_193687017_193851226_193858598_RF	OBD183-2085
323	Hg38_12_116931027_116934300_116959223_116967078_RF	OBD183-2089
324	Hg38_17_7665587_7668453_7811362_7813705_FF	OBD183-2093
325	Hg38_12_87675372_87683936_87811804_87814408_FF	OBD183-2097
326	Hg38_12_46746378_46756718_46865284_46879162_FF	OBD183-2101
327	Hg38_12_56269538_56273851_56415250_56418662_FR	OBD183-2105
328	Hg38_7_26158147_26166959_26344790_26347647_FF	OBD183-2109
329	Hg38_4_40800075_40804237_41041101_41047221_RR	OBD183-2113
330	Hg38_5_101857205_101863977_102113262_102119968_RR	OBD183-2117
331	Hg38_22_38970835_38973283_39095838_39099483_FR	OBD183-2121
332	Hg38_5_55874716_55883166_56069488_56074299_RR	OBD183-2125
333	Hg38_5_30097465_30100060_30144494_30156052_RR	OBD183-2129
334	Hg38_3_30481415_30486448_30652453_30660274_RR	OBD183-2133
335	Hg38_19_49754688_49759950_49902219_49904931_RR	OBD183-2137
336	Hg38_10_26780453_26788708_26959699_26967983_RR	OBD183-2141
337	Hg38_8_129796093_129803717_129899083_129904705_RR	OBD183-2145
338	Hg38_5_30008006_30016904_30144494_30156052_FR	OBD183-2149
339	Hg38_11_65076105_65079526_65228515_65232564_RR	OBD183-2153
340	Hg38_19_51523072_51524696_51712234_51719472_FR	OBD183-2157

表8.g7

301	CCACCAACACCACTTTCAAACCCGCA	OBD183-2003	CAAACTACATCCTGTGAGCCAAACTA
302	AATTCTCACGGGCAAAGCAGATG	OBD183-2007	ATGGCGAGTCGCGCTTTCCGTAAT
303	CCCTGAGGTAGCACAACAGAACC	OBD183-2011	TAGTGGATTCCTGGCTGGGCACG
304	CCCCTAACTTCCTCTTCTCACCC	OBD183-2015	GATAGTGAGCCCAGAGCAGTGGC
305	CTTGCCCGCTCCTGGACAG	OBD183-2019	TACGATGTGACAGAGCCG

	GTGGTC		GTCCCG
306	TTAAAAAGACGAACACTC TGGGTT	OBD183-2023	TTTATTTTAGCGTCTAGGG CCTGAG
307	TAAAAATCTGTCAAGCCA GTTAG	OBD183-2027	TTCATCCAAGCTCCAAGC TACGA
308	AGCGTACACGAGCGACAA CGACGC	OBD183-2031	TAAAGACTTAGAGTTCCG GCCCAC
309	CCTCTGACGCAATGAGCC GCAAG	OBD183-2035	CTGTATACTGCCACACAT TAGAG
310	CTCCGTGAGTCCTCTTAGC CCCT	OBD183-2039	CAAGCCAAGGTTCAAGCC CTGAC
311	AAATCGGGCCCTACTGCTA CTGGCA	OBD183-2043	GCGTCACCCGGCTCCGAA AATATG
312	TCTCCTATACACTTGTGTA CCCTAG	OBD183-2047	CGATGCTCTCTATGGTTC AATCC
313	GTATAAGAAGATGCGTCG GTGCT	OBD183-2051	TCGACAACCAGTATGGTG ATTCCT
314	TTCGGCCTTGCAGGCTGGC ACAC	OBD183-2055	ATCCCCTAGTCGAGATGC ATGTGA
315	AAGGAGTTCCACCCTCCG AAGGATC	OBD183-2059	CGATTTTCGGGCGAAGGG GTTTGTA
316	GAACACGGAGAGGTATCC CGCCCG	OBD183-2063	AGGACACTGTGTAACGTA ACTGTA
317	TTCATCGTACCGTATCTGC CGTTA	OBD183-2067	GAGTACAGATAATTGTGG AGAACGT
318	TGAGTCCAACGCGTAGGC TAGAA	OBD183-2071	GGTGGCTAGGCTGTCTTG ACCCAAT
319	TGTAGACAGTGTGCACTA GACACT	OBD183-2075	GCTTTGGCGCGTAAAGGT AACCCA
320	TGTGAAAAAACTCCCCTCA GCCATC	OBD183-2079	CGGACTTCGGTTATGAAG GGTGAAA
321	TCGGATGGTGACTGGAGC GTTAT	OBD183-2083	GGCACTCTCGTACAAAAG CGTTT
322	ACAGGATCCCAGCCTTAG CGGCCT	OBD183-2087	TGCGGTGCGTGTATTCGC AGTCGAA
323	AACTGGAATCCCGCATTGC GGTAGC	OBD183-2091	ACACATGCACCTCGAGTG GTTCT
324	GAAAACTCGTGGAGTTGG TCCGCG	OBD183-2095	AACCAACTGGCTTTCTCG GTCGG
325	TAGCGAATACGAGTGTAC CGAAC	OBD183-2099	CCAACCGTAGTTATCTTC GTAACA
326	ACAGGAACCATGATCAAT TGACC	OBD183-2103	TCTAGTTACCCCACCAGA AGGAC
327	GCCGAACGGATTCTGATC ATAGT	OBD183-2107	AACCTGTCAAACGACGCC ACTTCG

328	TCTCCATCCCTCCTCCTCCAGAT	OBD183-2111	TTACGCCACCACACTTCAGCCCC
329	TGAAGCAAAGTTCTGACGGCTAT	OBD183-2115	CCAGTTGAGACTCTCGGACTACAAC
330	CGCAGTTTCCACGGAACTAGATTGC	OBD183-2119	GTCCTAAGTAGAGGATTCCAAGGCG
331	TTCGTGTGCAGAATAGCGGCATCG	OBD183-2123	TACGGGCTCGTCTTAACGGGAAT
332	CTTTGGCTGTTTTCTCACATCGTGG	OBD183-2127	GTTAGTGGGGACACGGCGAACCACT
333	CTAACTCGAACATTAGACGTGCT	OBD183-2131	TGCAGCGTCGATGCATGGGTGGTC
334	GTCCGACATGGTTGAAGTTTTCCTA	OBD183-2135	CTGTCGATCGTCGCCGCAATGGC
335	TCCGGTGAGATGGAGGCATTGGTCT	OBD183-2139	GACACTGCCAAGATCAGTCTGGC
336	CCTCATGTATCGAGGCAGATGGGG	OBD183-2143	CCACAGATTCTTTAAACATACCCT
337	ACTCTAGTACAAGTCATCTCGAGCC	OBD183-2147	ACTATTCTATGGCAAGTGCTGAG
338	TCGCGTGATGAACCGCTTCGAGCGC	OBD183-2151	GTCTGAATCTTATGTGGAAACCC
339	AAATAAATGGGCGTGGTGGCACATA	OBD183-2155	GTTCTGTTTCTTGACCAGTGTGTTGA
340	CTACATCCAGTATCTTCAGAAAACAC	OBD183-2159	CCACTCTTGACCTCAGTTTCCCTGTA

表8.g8

qPCR引子集

	探針	qPCR引子ID
13	Hg38_1_99631771_99639876_99708395_99714403_FF	OBD183-q765
14	Hg38_19_34387270_34393741_34499918_34506554_FR	OBD183-q425
16	Hg38_1_99659612_99670382_99708395_99714403_FF	OBD183-q709
20	Hg38_6_132703799_132711156_132757539_132761457_FF	OBD183-q537
34	Hg38_7_29905017_29911792_30016613_30019069_FR	OBD183-q733
35	Hg38_8_5120591_5125403_5295149_5302540_FF	OBD183-q753
36	Hg38_1_109341939_109348573_109359719_109366704_RR	OBD183-q481
37	Hg38_8_5115633_5120591_5295149_5302540_FF	OBD183-q785
40	Hg38_22_34722666_34726389_34750116_34757594_RR	OBD183-q521
45	Hg38_16_20282299_20286605_20445721_20457266_FR	OBD183-q457
46	Hg38_8_47127019_47130852_47283075_47288879_FR	OBD183-q677
47	Hg38_6_46130577_46139255_46168740_46175484_FF	OBD183-q685
48	Hg38_1_241870739_241874965_242033568_242040771_FF	OBD183-q569

50	Hg38_15_34886920_34889054_34974237_34980574_FF	OBD183-q693
58	Hg38_6_13822111_13826619_14070076_14075830_RF	OBD183-q609
62	Hg38_1_27966549_27971202_28029814_28033207_FR	OBD183-q713
65	Hg38_7_66298919_66305803_66392051_66398673_FF	OBD183-q797
70	Hg38_12_45013447_45019401_45077155_45087147_FF	OBD183-q517
71	Hg38_16_12325962_12334419_12372790_12375829_FF	OBD183-q637
73	Hg38_3_157551093_157568769_157606016_157614360_FF	OBD183-q621
76	Hg38_6_13822111_13826619_14011144_14016925_RF	OBD183-q721
77	Hg38_5_55874716_55883166_56069488_56074299_FR	OBD183-q441
78	Hg38_1_109359719_109366704_109611657_109614647_RF	OBD183-q541
79	Hg38_19_50732808_50735232_50961391_50964466_RR	OBD183-q573
80	Hg38_8_55800026_55805370_55942582_55947045_FF	OBD183-q741
82	Hg38_X_70952076_70955538_71213839_71218089_FF	OBD183-q773
83	Hg38_11_93057516_93069988_93228754_93237221_FR	OBD183-q597
85	Hg38_20_4763308_4769930_4885862_4890450_FF	OBD183-q581
90	Hg38_19_38895868_38902769_39089148_39091382_FR	OBD183-q789
91	Hg38_1_17044824_17050263_17192218_17198113_FF	OBD183-q761
92	Hg38_5_76420596_76423340_76572657_76583168_FR	OBD183-q505
93	Hg38_20_34791262_34795203_34932162_34933974_FF	OBD183-q653
94	Hg38_12_8119443_8124985_8341969_8343630_FF	OBD183-q625
96	Hg38_1_109359719_109366704_109385998_109391476_RF	OBD183-q501
97	Hg38_1_187499122_187506399_187600952_187612332_FF	OBD183-q473

表9.a

qPCR引子集

	序列	qPCR引子ID
13	CCACTAAATGGAGCAGTTGTTTGACCTC	OBD183-q767
14	GTGCCCACTGCCCACAGGACGCA	OBD183-q427
16	CACACTTAGGGTCTCCTTCTATGTCCCC	OBD183-q711
20	GGCGTTGTGCGGTTTTGAGAATAGTTCC	OBD183-q539
34	CCCACATAGAAGAATGAAGTTGGACCCC	OBD183-q735
35	GCGTGTATTTCTGATTCTTGCCACCTCC	OBD183-q755
36	CCCCTCCGTGGGACAGGAACAGTT	OBD183-q483
37	CAAGAGCAAGCCACGGGAGGTAGGGC	OBD183-q787
40	GGTGAAAGGAAGGTGTGTGAAGTGAACC	OBD183-q523
45	GGCAGAGAAGCCAGAGTGAGCCAAGAC	OBD183-q459
46	AGAAAGTCCCAACTCTGAAGAAGTCCTA	OBD183-q679
47	AATCATCATCTCTGGAGCCTCTGAAAGC	OBD183-q687
48	GTGTTCATTGTGAGATGTGTGACTTGAC	OBD183-q571
50	CCACTCCTTCTCTACAACTTCACCAGAT	OBD183-q695

58	GGAAGAAGGGACAGGTCAGAGAGGTGAG	OBD183-q611
62	CCCCATACTCCTCTCCCCTGTGGTTCAG	OBD183-q715
65	TAAGACCTGTAAACTGGGAGAGCCC	OBD183-q799
70	GCCAATAAAACAAATAAAAGCCCCTCAC	OBD183-q519
71	GCACACCGCCAAGGAACTCGCTTAGC	OBD183-q639
73	GGTCTTATTCATTCTGTGGGTTGGCTCT	OBD183-q623
76	CGGCTCCCTCCAGGCTCTGCTCA	OBD183-q723
77	GCATCCTTCTCTCACTGGGTATTCCTTT	OBD183-q443
78	CCTGGGTTGCTGGTGTCTGTGTTTCCTC	OBD183-q543
79	CTTGCTTAGAAAACCATCTGTGCCTGGG	OBD183-q575
80	GTAGTAGACGCATTCTGTGGAGTTGGAG	OBD183-q743
82	TAAACAGGTTCATCCAGGTTGTGAGGTA	OBD183-q775
83	CAGACCGATGGAATGGAACCGAGAGCCC	OBD183-q599
85	CTGACGAGGTGTCTGCTCCATTGCCTG	OBD183-q583
90	CATCTGCTTTTGTATGGTTGTGAGC	OBD183-q791
91	GCCTGTGGGATGACTGTGGTTACCTGC	OBD183-q763
92	CCAGGCAATGCTACGCCAGGCTTTGTGC	OBD183-q507
93	GGGTTCATCCTCGGTAGAGCGGCAAAGC	OBD183-q655
94	CTGTGAAGGTGTGGAGAGCACTTAGGGA	OBD183-q627
96	CACTGAAGCAAGTTCTGGAGGTGGTAGT	OBD183-q503
97	GCTGATGCTTCTGGCACCTGGACCAC	OBD183-q475

表9.b

qPCR引子集

	qPCR反向序列	探針ID
13	GGAGAGGACGAGGAGGTCAGTTCAGAG	OBD183-p765
14	CCGCAGGTGGCAACGACGACACAGTAGG	OBD183-p425
16	GGAGAGGACGAGGAGGTCAGTTCAGAG	OBD183-p709
20	TCGTTGCTAAAAGAGCCTACTTCCTAAT	OBD183-p537
34	GCTGGTCTAAACAGAAGGAAGAGAGGTG	OBD183-p733
35	GAAAAGTGTGTAGGTCAGGTGTAGTGGC	OBD183-p753
36	GAGTCACCTTTCGTCTTTTCCATTTCCC	OBD183-p481
37	GAAAAGTGTGTAGGTCAGGTGTAGTGGC	OBD183-p785
40	ACATTCTTTCATCTACTCTTCCGTCTGC	OBD183-p521
45	CACGAGGCAACTCACCCAGAGACCCC	OBD183-p457
46	GCTGTTCCTCCATCTCTTGCCTTCTCCT	OBD183-p677
47	CTCTGCTGGGTGTCATTCCTTTTCCCTC	OBD183-p685
48	GCCCCGCCTGTCTGATTTCTTATTGTTG	OBD183-p569
50	TTTGAAAAGACCGTCGGGTGCGG	OBD183-p693
58	GGTGTCTCGCTCTGTCGCCAGGCTTCAG	OBD183-p609

62	CAGTGCCCTGGTGAAGCAGAGGTTCTC	OBD183-p713
65	GGTGCCCAGGAAACAGCAGTGAACAAGG	OBD183-p797
70	GCCCTGTGTTCTGTCTTATCTCTCCATC	OBD183-p517
71	TCTCTCTCCAGGGTCTCTCCCAGGCTGC	OBD183-p637
73	CCATCAGGTTTGGTGTCTGGTGGAGGC	OBD183-p621
76	GGTGTCTCGCTCTGTCGCCAGGCTTCAG	OBD183-p721
77	ATAACCAGCCACAGTTCTCACTTTGAAT	OBD183-p441
78	GAGTCACCTTTCGTCTTTTCCATTTCCC	OBD183-p541
79	GAGACAGGCTGAGGGAGAACCCAAGC	OBD183-p573
80	GCCGCTGGCAACCTCCGCTCTTTCTG	OBD183-p741
82	CTGGGACAGAAGGAGAGGGAAAGAGTTG	OBD183-p773
83	GCCACAAGGCAACTGGTCTGAATGTTTC	OBD183-p597
85	GTGCCTGGCTTCCTTCATCTACCAAGAC	OBD183-p581
90	GGAATGTTTCTGCTAAATCCAAAAGTAG	OBD183-p789
91	GGAGGGCAGGAAGGTTGGTGATGGGCAG	OBD183-p761
92	CCTCTTGACCTCCAGCGAGACCACTCC	OBD183-p505
93	CCCCACCCAATGCTGTCCTTCCTTTGAT	OBD183-p653
94	CCACACACACCACCCAGGAGCCCAGTG	OBD183-p625
96	GAGTCACCTTTCGTCTTTTCCATTTCCC	OBD183-p501
97	TTGAACATTAGGCTGGGCACGGTGTCTC	OBD183-p473

表9.c

qPCR引子集

	探針序列	探針ID
13	TCAATTCCACAAATCATCGAGACCAGCCTGACTG	OBD183-p767
14	ACAACTTCGAACTCCTGACCGAAGCGATGATCC	OBD183-p427
16	AGCACTTGAACTTACATTAAGTCATCGAGACCAGC	OBD183-p711
20	TGTGAATCGAACTCCTGACCTCAAATAATTCGCC	OBD183-p539
34	AATGAATCGAACTCCTGACCTCAGAAGATTTGCC	OBD183-p735
35	ACTCCCAAGCCATTGTGTTGTCTAAATCGAACTCC	OBD183-p755
36	TACATGTCGAACTCCTGACCTCAGGTAATCTTCC	OBD183-p483
37	ATGTTGTCGAACTCCTGACCTCAACTGATTTGTC	OBD183-p787
40	ACTGAAATTCGAGGAGTATCTTTGTGGCTTTCTC	OBD183-p523
45	ACCATTTGTCTAACCAATCAATCGAACTCCTGACC	OBD183-p459
46	TGACTGAAATTATCTTCGAACTCCTGATCTCAGG	OBD183-p679
47	ATTAAGCCTTTCGAACTCCTGACTTTGTGATTCGC	OBD183-p687
48	TCCACTAGAAGACTTCGAACTCCTGACCTTGTGC	OBD183-p571
50	ATAAATTCGATCTCTTGACCTTGTGACTCACCCG	OBD183-p695
58	TCAAAATCGATCTCCTTACCTCGTAATCTGCCTG	OBD183-p611
62	AGGCACAGTCAGTTTTACATTCGAACTCCTGACC	OBD183-p715

65	AGGGCTATTTCGAACTCCTGACTTGAGGTGATTC	OBD183-p799
70	TTCAAATCGAACTCCTGACCTCATTACCCACCC	OBD183-p519
71	AATCATCCCCGGGTGCATTCGAACTCCTGACC	OBD183-p639
73	TGTGATGTGAGGTAAGAGTTCGATCTCCTGACC	OBD183-p623
76	TGCCTTAGTCGATCTCCTTACCTCGTAATCTGC	OBD183-p723
77	ACACACTTCGAACTCCTGACCTCAGGCAGTCAC	OBD183-p443
78	AGCCAAGGTGGAGAACTACTGAGGTCGAACTCC	OBD183-p543
79	TCCATTTCATCGAACTCCTGACCCTAGGTGATCC	OBD183-p575
80	ACCTAGATACATCGAACTCCTGACCACAGGTG	OBD183-p743
82	AGAGCAACAGCCATCGAAGTCCTGACCTCAGG	OBD183-p775
83	AGGGAAGTTTTATCGAACTCCTGACCTTGTAATC	OBD183-p599
85	AGTCTATCGAACTCATGACCTCAGGTTATCCTCC	OBD183-p583
90	TGCACTGACACAGCAGAGTCGAACTCCTGACC	OBD183-p791
91	TCTAAGTCGAACTCCTGACCTCAGGTTATCCATC	OBD183-p763
92	TGGTGCTTGGTCGAACTCCTGACTTCAGGAAATC	OBD183-p507
93	TGCATGATCGAACTCCTGACCTTACGATCCACC	OBD183-p655
94	TCATAACTCGAACTCCTGACCTCATGATTTCCTG	OBD183-p627
96	TGTGCTGTAGATGAGGAATCGAACTCCTGACCTC	OBD183-p503
97	AGTTATACAGAGATAAAATAAGTCGAACTCCTGG	OBD183-p475

表9.d

qPCR引子集

	探針序列
13	TCAGTCAGGCTGGTCTCGATGATTTGTGGAATTG
14	TCGCTTCGGTCAGGAGTTCGAAGTTGTCAAAACC
16	AGGCTGGTCTCGATGACTTAATGTAAGTTCAAGTG
20	AGGTCAGGAGTTCGATTCACATACTTCTTTCTGA
34	TCTTCTGAGGTCAGGAGTTCGATTCATTTTGAGT
35	AGGAGTTCGATTTAGACAACACAATGGCTTGGGAG
36	AGATTACCTGAGGTCAGGAGTTCGACATGTAAA
37	TCAGTTGAGGTCAGGAGTTCGACAACATTAGTAAG
40	AGAGAAAGCCACAAAGATACTCCTCGAATTTCAG
45	AGGTCAGGAGTTCGATTGATTGGTTAGACAAATGG
46	ACCTGAGATCAGGAGTTCGAAGATAATTTCAGTC
47	TGCGAATCACAAAGTCAGGAGTTCGAAAGGCTTA
48	AGCACAAGGTCAGGAGTTCGAAGTCTTCTAGTGG
50	TGAGTCACAAGGTCAAGAGATCGAATTTATGG
58	AGGCAGATTACGAGGTAAGGAGATCGATTTTGA
62	AGGTCAGGAGTTCGAATGTAAAACTGACTGTGCC
65	TGAATCACCTCAAGTCAGGAGTTCGAAATAGCCC

70	TGGGTGGGTAATGAGGTCAGGAGTTCGATTTGAA
71	ATTTGAGGTCAGGAGTTCGAATGCACCCGGG
73	AGGTCAGGAGATCGAACTCTTACCTCACATCAC
76	AGGCAGATTACGAGGTAAGGAGATCGACTAAGG
77	TGACTGCCTGAGGTCAGGAGTTCGAAGTGTGT
78	AGGAGTTCGACCTCAGTAGTTCTCCACCTTGGC
79	ACCTAGGGTCAGGAGTTCGATGAAATGGATGGG
80	TCACCTGTGGTCAGGAGTTCGATGTATCTAGG
82	ACCTGAGGTCAGGACTTCGATGGCTGTTGCTC
83	AGATTACAAGGTCAGGAGTTCGATAAAACTTCCC
85	AGGAGGATAACCTGAGGTCATGAGTTCGATAGACT
90	AGGTCAGGAGTTCGACTCTGCTGTGTCAGTGC
91	ACCTGAGGTCAGGAGTTCGACTTAGATATTCAGTG
92	AGATTTCCTGAAGTCAGGAGTTCGACCAAGCACC
93	TGGATCGTAAGGTCAGGAGTTCGATCATGCAA
94	AGGAAATCATGAGGTCAGGAGTTCGAGTTATG
96	TGAGGTCAGGAGTTCGATTCCTCATCTACAGCAC
97	TCCAGGAGTTCGACTTATTTTATCTCTGTATAAC

表9.e

	探針	基因	RP
1	Hg38_12_57452982_57456003_57739419_57741914_FR	ARHGAP9	20695.53197
2	Hg38_12_8219310_8221338_8341969_8343630_RR	CLEC4A	22476.39239
3	Hg38_12_57452982_57456003_57601753_57604119_FR	ARHGAP9	26019.28963
4	Hg38_3_194096425_194098698_194154195_194165166_FF	CPN2	36563.85323
5	Hg38_12_57452982_57456003_57739419_57741914_FF	ARHGAP9	39468.24142
6	Hg38_3_194044420_194052936_194096425_194098698_RF	CPN2	41488.61576
7	Hg38_19_55711882_55714266_55776223_55778463_RF	NLRP9	47528.20138
8	Hg38_3_194096425_194098698_194189178_194197532_FF	CPN2	41354.35321
9	Hg38_1_121333642_121342053_121403378_121413898_FF	FCGR1B	53004.08958
10	Hg38_22_24148514_24151453_24244877_24251612_FR	SUSD2	39791.5111
11	Hg38_20_48471129_48476648_48496455_48503402_RF	PREX1	46296.68446
12	Hg38_2_11008274_11010451_11159160_11162827_FR	ROCK2	60658.80582
13	Hg38_17_7929728_7931226_8055790_8058200_RF	TRAPPC1	64657.79207
14	Hg38_1_203176687_203182913_203364177_203368484_FF	CHI3L1	59766.30883
15	Hg38_1_203071961_203079830_203176687_203182913_RF	ADORA1	57174.38857
16	Hg38_22_42578934_42580470_42682810_42685060_FR	CYB5R3	53123.90834
17	Hg38_6_88165452_88168090_88188008_88196988_RF	CNR1	63654.72943
18	Hg38_17_7929728_7931226_7944762_7946565_RF	TRAPPC1	52010.98025
19	Hg38_19_55674838_55678632_55776223_55778463_RF	NLRP9	60382.50989

20	Hg38_1_203176687_203182913_203223882_203229092_FF	CHI3L1	61234.27208
21	Hg38_16_85802241_85804577_86052797_86054069_RR	IRF8	60406.66065
22	Hg38_16_85802241_85804577_85995087_85996356_RR	IRF8	58149.21291
23	Hg38_2_47522457_47530546_47595212_47601970_FF	MSH2	57045.54636
24	Hg38_2_47354005_47355988_47522457_47530546_RF	EPCAM	57499.77068
25	Hg38_1_203176687_203182913_203350351_203352113_FR	CHI3L1	65021.94766
26	Hg38_2_11008274_11010451_11142335_11148573_FF	ROCK2	65585.09004
27	Hg38_2_1633514_1641369_1669637_1675007_RF	PXDN	68553.52952
28	Hg38_5_75334371_75336800_75362869_75366450_FR	COL4A3BP	59160.03332
29	Hg38_3_194096425_194098698_194189178_194197532_FR	CPN2	56698.06689
30	Hg38_20_48373933_48385139_48496455_48503402_RF	PREX1	55522.20115
31	Hg38_5_140633075_140635001_140734427_140740603_RR	CD14	54888.93545
32	Hg38_11_59792208_59794193_59978140_59991387_RR	TCN1	74005.01033
33	Hg38_11_5689507_5691245_5788110_5795433_FF	TRIM22	88583.0796
34	Hg38_6_1238869_1247003_1325058_1328459_RR	FOXC1	82994.49164
35	Hg38_19_55694907_55697956_55776223_55778463_RF	NLRP9	64771.6835
36	Hg38_8_30132536_30134220_30177058_30181551_RR	DCTN6	74556.42789
37	Hg38_11_63903088_63909160_64170615_64174763_FF	OTUB1	63195.39089
38	Hg38_5_140633075_140635001_140703783_140710933_RR	CD14	58926.91739
39	Hg38_5_75334371_75336800_75421277_75426441_FR	COL4A3BP	64569.86308
40	Hg38_1_203176687_203182913_203381983_203386317_FR	CHI3L1	65019.22414
41	Hg38_14_87760445_87771456_87814113_87820852_FF	GPR65	52190.12812
42	Hg38_X_1815902_1820657_1830879_1832345_RR	AKAP17A	91544.03603
43	Hg38_18_28150489_28152101_28322522_28342464_RR	AQP4	72068.78058
44	Hg38_19_55104500_55106500_55175439_55177687_FR	TNNI3	77938.82926
45	Hg38_1_201489507_201495563_201554857_201559521_RF	TNNI1	95434.40565
46	Hg38_1_159614098_159617749_159863199_159866609_RF	CRP	86219.89409
47	Hg38_1_201387330_201388480_201554857_201559521_RF	TNNI1	88125.35913
48	Hg38_12_110242070_110251176_110379081_110380448_RR	ATP2A2	89868.81994
49	Hg38_2_53751287_53756935_53865030_53869534_FR	GPR75	98485.8466
50	Hg38_1_159708294_159713893_159863199_159866609_RF	CRP	104796.2151

表10.a1

	FC:(1類/2類)	pfp	P值	CCS
1	-1.273955346	0.005801433	0.005727997	免疫
2	-1.257925344	0.003678786	0.003275206	免疫
3	-1.251537985	0.003591299	0.003182164	免疫
4	-1.219963576	0.001529047	0.000920221	免疫
5	-1.20992116	0.002056946	0.001478485	免疫

6	-1.204270443	0.001905941	0.001319886	免疫
7	-1.20352041	0.000548965	8.54501E-05	免疫
8	-1.20265895	0.0025339	0.002063472	免疫
9	-1.197079593	0.001529047	0.00092259	免疫
10	-1.195746952	0.005042802	0.004913289	免疫
11	-1.185895106	0.002250025	0.001670904	免疫
12	-1.183435224	0.000520629	6.99049E-05	心臟
13	-1.183434809	0.001364867	0.000760179	免疫
14	-1.181127512	0.00048383	4.59179E-05	免疫
15	-1.180302978	0.000693008	0.00020761	免疫
16	-1.178910824	0.001087752	0.000477881	免疫
17	-1.178597726	0.002297443	0.001781961	免疫
18	-1.177395452	0.001369925	0.000768776	免疫
19	-1.175238807	0.000691883	0.000188452	免疫
20	-1.174498675	0.000691883	0.000204354	免疫
21	-1.174476154	0.00048383	3.64444E-05	免疫
22	-1.174324323	0.000580521	0.000141879	免疫
23	-1.173818675	0.002056946	0.001467992	免疫
24	-1.173804774	0.002172138	0.001594735	免疫
25	-1.172308346	0.000548965	0.000115314	免疫
26	-1.171668875	0.000786846	0.000252322	心臟
27	-1.171515589	0.001905941	0.001326921	免疫
28	-1.171289424	0.001303562	0.000704034	免疫
29	-1.170754835	0.002297443	0.001765408	免疫
30	-1.169480391	0.002305285	0.001809211	免疫
31	-1.169390122	0.004420249	0.004159137	免疫
32	-1.168763954	0.00048383	3.28398E-05	免疫
33	-1.168388858	0.002316153	0.001827513	免疫
34	-1.168128163	0.00092227	0.00031414	免疫
35	-1.167926895	0.00063478	0.000168739	免疫
36	-1.167913965	0.005042802	0.004887801	免疫
37	-1.167215962	0.00092227	0.000315206	免疫
38	-1.166183201	0.003576526	0.003150581	免疫
39	-1.166029994	0.001303562	0.000699267	免疫
40	-1.165357971	0.001038693	0.000436752	免疫
41	-1.164160024	0.003576526	0.003153983	免疫
42	-1.163643176	0.001256517	0.000635032	免疫
43	-1.161997248	0.000548965	0.000109155	免疫
44	-1.144590291	0.003077496	0.002610028	心臟

45	-1.144176303	0.001042455	0.00045305	心臟
46	-1.143933829	0.000548965	0.00011352	免疫
47	-1.140546879	0.000691883	0.000199948	心臟
48	-1.140518988	0.000548965	0.000103344	心臟
49	-1.139661805	0.000520629	7.24927E-05	心臟
50	-1.134523619	0.000439511	2.22537E-05	免疫

表10.a2

	60 mer
1	AGCAGTCTCTACTTTTCTAGAGGTAGGTTCGACTGTCCCAAAGTGAACTTGGAAAATGTT
2	AATTAATGAAGCGCAAATCAAAGGGGACTCGAGCTTCCCAGACATGCTCATGCTAGATTA
3	AGCAGTCTCTACTTTTCTAGAGGTAGGTTCGAGTAGGCTCTTTCTGACCCTCAGAAATAC
4	TACAGCTGCAGGAAAACCCCGTTCTTATTCGACATATGCTTTCAGTTCTCTTGGGTAAAT
5	AGCAGTCTCTACTTTTCTAGAGGTAGGTTCGAGGTAAGAGAAAGGTCAGCCCTCAACTTG
6	TACAGCTGCAGGAAAACCCCGTTCTTATTCGAGAGTCATTTTATCCTCAAGCACTATTGC
7	CAGAATAGGAAGGAGCAAGCTGAGAGGTTCGAGGTTCAGGCTCCTCAGTGTTTTGCAGGC
8	TACAGCTGCAGGAAAACCCCGTTCTTATTCGATGATAGTAATCTTCAAAGAATAGTCACA
9	TGACCCCAAGCATTCTGGCCTGAACGATTCGATTTCCCACAAATAAATCCAGTAATCTTG
10	TTTTAGGGACCAGGGGTCAGAAGATGGATCGACAGATAGGCCAGATAGCTAGACAAAGAG
11	CCTCCCTGGGTCACCAGCTTCGTGACCCTCGATGTTCTTTATACCTTGCCCATATTGTAC
12	AGAGAGCTCAATGTGTTTCGGCTTTAGTTCGATGGTGAAGACCCCCATAGCTTTTGTTCT
13	GGTGGACCGACGAGGCTCAAAATCAAGATCGAGGATGAGGTAAAGGTCTCGGAGGATAAG
14	GTCCCAAGTGGCATGAGAGGTAGACTCATCGATCACATCACTCTTTCCTGTTTTTTTTCC
15	GTCCCAAGTGGCATGAGAGGTAGACTCATCGAGAAGTCTCTGTGAAACTCCTGTGCAAAA
16	CACATCCCTGTCTAGTCCTATCTGTTCATCGAGCCAGAGTGTCACTCTGTCACCTAGGCT
17	TTGTGGTGAGAACGATACAGGAGACAGCTCGATGTATTTCCCTGGGAAGACTTAGCTGCT
18	CTGTGTGGTACAAACATGACAACCTAGGTCGAGGATGAGGTAAAGGTC

	TCGGAGGATAAG
19	CAGAATAGGAAGGAGCAAGCTGAGAGGTTCGAGGCCTTCCCTGCTTGC GCGGTGCCCTTC
20	GTCCCAAGTGGCATGAGAGGTAGACTCATCGAAGGAGTCCTGTCAGAC CCTAGGTCTCCA
21	GAGAGGCCGTTCTAAAAGCACATTTGTATCGAATAAATAGAAATATAG AATAAATAGACA
22	GAGAGGCCGTTCTAAAAGCACATTTGTATCGAGGTGCCAGCTGCTAAGA GGGGTCTCGCT
23	CGGAGGGTATAATAACTGCTGTTGTGTATCGAGCAACCCCTGAGAATAA GGTGGCTCAAT
24	CGGAGGGTATAATAACTGCTGTTGTGTATCGAGGTGTAACTCACTAGCA CGTTGTCTCTC
25	GTCCCAAGTGGCATGAGAGGTAGACTCATCGAAAGTTTCCAGGACTGCC ACACTATCAGC
26	AGAGAGCTCAATGTGTTTCGGCTTTAGTTCGATGCTCATATTGTCCCAAA TTTAGGCTGG
27	CAGCGCGCAGCCAAACCGTCGGGAACACTCGAGCAGCGGGAATGTTTG TCTTGGGATTAG
28	CCCGCGCTAGTAACTGAGCTTTCAGTCATCGAAGTATGCTCCTACGCTA GGTAAGTCTTG
29	TACAGCTGCAGGAAAACCCCGTTCTTATTCGACAGAGACCTCCCCAGGA TGAGTAAACCT
30	CCTCCCTGGGTCACCAGCTTCGTGACCCTCGACTCAAAGGAGAAAAATG CATGTCCCCCT
31	TCCGGAGCTCAGAGGTTCGGAAGACTTATCGAAAAGACTTTAACATATT TGAATACCAAT
32	CACGCCAAACCTCAAGTACATACTAATTTCGACTCATGCTCTTGAAAAT AGTAAGAAAAA
33	AAGACTCCTGTCTCAAGAGCCGAGCTCCTCGAAGCCATTTATAAGGGTT AGAACTAACTT
34	GTGGGCAGATTGGACAATCGTGAGAAGATCGAGCACATGCAATTCCCTC TGCTCCATGAC
35	CAGAATAGGAAGGAGCAAGCTGAGAGGTTCGACCTGGACTCGCTGGTG AGCCGGCCGGGC
36	GGAGCGGGACTGACTGATTGCCAGCAATTCGAAAATGGGAAGAAAATT GCTTATTGTGTT
37	AACTGCCGCGGCTCTCTCTCAACGGGGTTCGAGACCAGGCTGGCCGACA TTGCAAAACCT
38	TCCGGAGCTCAGAGGTTCGGAAGACTTATCGAAAGCTAAGGCTTTATAG AAATGAAGGCT
39	CCCGCGCTAGTAACTGAGCTTTCAGTCATCGATACCTTATTTCCCTTCTT TGATTAAATG
40	GTCCCAAGTGGCATGAGAGGTAGACTCATCGATCCCATCTCCTGTCTAC TTGGGACCTTT

41	CGCCCTCCCAGGAGATCCCCACAACTAATCGACTTAAGGAAAGAAAAAGTCATATGCTGA
42	AAGCGAGCGGATCACCTCGGCCAGGAGTTCGAGACAAGCCTGGCCAACATGGTGAAACCC
43	GTGAACATTCACTGTCTTCCTGACAGCTTCGATAGATAGATACTATTTTATTTTATTTTT
44	CTTGTCAGCACTTGGAGCTATCCAATGGTCGAAGCGAACAGTTGGGGGAACTCAAATGGG
45	AGGTGAGAAGCTTTGTCCGAGATGATGGTCGAAGAAAGGGAAATGACTTCTTCTCAGTAG
46	CGGATTCTGGTTACAGAGAGGGATGAGATCGAATGGACTCCGCTAAGTGTGTTGGCTTGA
47	AGGTGAGAAGCTTTGTCCGAGATGATGGTCGATATATTGCACTTCCAAGGTATCATCTGA
48	AGAACTCACCATATTGCCAGGGCTGGTCTCGAACTCCTGACGTCAGGTGTTCCACCCGCC
49	CAGGCTAAGTGCCTGGGGTTCATCCTAATCGAGCAATCCATCAGGTCATTGGTTAGGTTC
50	CGGATTCTGGTTACAGAGAGGGATGAGATCGAAGTTGAGAATTGCTGGCCTAGAGTCCCT

表10.a3

	探針序列	探針位置				
	Chr	**開始1**	**結束1**	**開始2**	**結束2**	**Chr**
1	12	57455972	57456001	57739421	57739450	12
2	12	8219312	8219341	8341971	8342000	12
3	12	57455972	57456001	57601755	57601784	12
4	3	194098667	194098696	194165135	194165164	3
5	12	57455972	57456001	57741883	57741912	12
6	3	194044422	194044451	194098667	194098696	3
7	19	55711884	55711913	55778432	55778461	19
8	3	194098667	194098696	194197501	194197530	3
9	1	121342022	121342051	121413867	121413896	1
10	22	24151422	24151451	24244879	24244908	22
11	20	48471131	48471160	48503371	48503400	20
12	2	11010420	11010449	11159162	11159191	2
13	17	7929730	7929759	8058169	8058198	17
14	1	203182882	203182911	203368453	203368482	1
15	1	203071963	203071992	203182882	203182911	1
16	22	42580439	42580468	42682812	42682841	22
17	6	88165454	88165483	88196957	88196986	6
18	17	7929730	7929759	7946534	7946563	17

19	19	55674840	55674869	55778432	55778461	19
20	1	203182882	203182911	203229061	203229090	1
21	16	85802243	85802272	86052799	86052828	16
22	16	85802243	85802272	85995089	85995118	16
23	2	47530515	47530544	47601939	47601968	2
24	2	47354007	47354036	47530515	47530544	2
25	1	203182882	203182911	203350353	203350382	1
26	2	11010420	11010449	11148542	11148571	2
27	2	1633516	1633545	1674976	1675005	2
28	5	75336769	75336798	75362871	75362900	5
29	3	194098667	194098696	194189180	194189209	3
30	20	48373935	48373964	48503371	48503400	20
31	5	140633077	140633106	140734429	140734458	5
32	11	59792210	59792239	59978142	59978171	11
33	11	5691214	5691243	5795402	5795431	11
34	6	1238871	1238900	1325060	1325089	6
35	19	55694909	55694938	55778432	55778461	19
36	8	30132538	30132567	30177060	30177089	8
37	11	63909129	63909158	64174732	64174761	11
38	5	140633077	140633106	140703785	140703814	5
39	5	75336769	75336798	75421279	75421308	5
40	1	203182882	203182911	203381985	203382014	1
41	14	87771425	87771454	87820821	87820850	14
42	X	1815904	1815933	1830881	1830910	X
43	18	28150491	28150520	28322524	28322553	18
44	19	55106469	55106498	55175441	55175470	19
45	1	201489509	201489538	201559490	201559519	1
46	1	159614100	159614129	159866578	159866607	1
47	1	201387332	201387361	201559490	201559519	1
48	12	110242072	110242101	110379083	110379112	12
49	2	53756904	53756933	53865032	53865061	2
50	1	159708296	159708325	159866578	159866607	1

表10.a4

	4 kb序列位置						
	開始1	**結束1**	**開始2**	**結束2**	LS	ICU_log	輕度_log
1	57452002	57456001	57739421	57743420	-1	8.42660788	8.77592259
2	8219312	8223311	8341971	8345970	-1	13.44759042	13.77863673
3	57452002	57456001	57601755	57605754	-1	8.831328426	9.155030504
4	194094697	194098696	194161165	194165164	-1	9.362305671	9.649143746

5	57452002	57456001	57737913	57741912	-1	9.325012999	9.599926042
6	194044422	194048421	194094697	194098696	-1	9.366287848	9.634447262
7	55711884	55715883	55774462	55778461	-1	10.76113311	11.02839371
8	194094697	194098696	194193531	194197530	-1	9.272983011	9.539210592
9	121338052	121342051	121409897	121413896	-1	10.01046366	10.26998274
10	24147452	24151451	24244879	24248878	-1	10.69019538	10.94810749
11	48471131	48475130	48499401	48503400	-1	10.09287096	10.33884737
12	11006450	11010449	11159162	11163161	-1	9.301471298	9.54445204
13	7929730	7933729	8054199	8058198	-1	10.10777159	10.35075183
14	203178912	203182911	203364483	203368482	-1	9.729014913	9.969179637
15	203071963	203075962	203178912	203182911	-1	10.05240071	10.29155795
16	42576469	42580468	42682812	42686811	-1	10.05622844	10.29368303
17	88165454	88169453	88192987	88196986	-1	9.683077151	9.920148539
18	7929730	7933729	7942564	7946563	-1	10.49831735	10.73391631
19	55674840	55678839	55774462	55778461	-1	10.67029135	10.90324529
20	203178912	203182911	203225091	203229090	-1	9.926220657	10.15826574
21	85802243	85806242	86052799	86056798	-1	9.173064361	9.405081783
22	85802243	85806242	85995089	85999088	-1	10.48615582	10.71798673
23	47526545	47530544	47597969	47601968	-1	9.437760352	9.668969919
24	47354007	47358006	47526545	47530544	-1	9.118710946	9.349903426
25	203178912	203182911	203350353	203354352	-1	9.931051088	10.16040317
26	11006450	11010449	11144572	11148571	-1	9.488712244	9.717277151
27	1633516	1637515	1671006	1675005	-1	10.15462185	10.382998
28	75332799	75336798	75362871	75366870	-1	8.819614815	9.047712422
29	194094697	194098696	194189180	194193179	-1	9.872738681	10.10017768
30	48373935	48377934	48499401	48503400	-1	10.20973269	10.43560036
31	140633077	140637076	140734429	140738428	-1	8.123671931	8.349428241
32	59792210	59796209	59978142	59982141	-1	8.736005392	8.960988981
33	5687244	5691243	5791432	5795431	-1	12.56468564	12.78920615
34	1238871	1242870	1325060	1329059	-1	9.727145978	9.951344548
35	55694909	55698908	55774462	55778461	-1	11.14500394	11.36895391
36	30132538	30136537	30177060	30181059	-1	9.987789562	10.21172356
37	63905159	63909158	64170762	64174761	-1	14.09191195	14.31498347
38	140633077	140637076	140703785	140707784	-1	7.939949339	8.161743785
39	75332799	75336798	75421279	75425278	-1	8.818310552	9.039915452
40	203178912	203182911	203381985	203385984	-1	9.679045952	9.899819138
41	87767455	87771454	87816851	87820850	-1	13.17327648	13.39256586
42	1815904	1819903	1830881	1834880	-1	15.01284834	15.23149707
43	28150491	28154490	28322524	28326523	-1	8.521036405	8.737643057
44	55102499	55106498	55175441	55179440	N/A		

45	201489509	201493508	201555520	201559519	N/A		
46	159614100	159618099	159862608	159866607	N/A		
47	201387332	201391331	201555520	201559519	N/A		
48	110242072	110246071	110379083	110383082	N/A		
49	53752934	53756933	53865032	53869031	N/A		
50	159708296	159712295	159862608	159866607	N/A		

表10.a5

	ICU	輕度	探針
1	344.0818253	438.344881	Hg38_12_57452982_57456003_57739419_57741914_FR
2	11171.92693	14053.45003	Hg38_12_8219310_8221338_8341969_8343630_RR
3	455.5066878	570.0839223	Hg38_12_57452982_57456003_57601753_57604119_FR
4	658.1650789	802.9374234	Hg38_3_194096425_194098698_194154195_194165166_FF
5	641.3699716	776.0070998	Hg38_12_57452982_57456003_57739419_57741914_FF
6	659.9842782	794.7995589	Hg38_3_194044420_194052936_194096425_194098698_RF
7	1735.49694	2088.705988	Hg38_19_55711882_55714266_55776223_55778463_RF
8	618.6514505	744.0267041	Hg38_3_194096425_194098698_194189178_194197532_FF
9	1031.453925	1234.732445	Hg38_1_121333642_121342053_121403378_121413898_FF
10	1652.226061	1975.644278	Hg38_22_24148514_24151453_24244877_24251612_FR
11	1092.086155	1295.099626	Hg38_20_48471129_48476648_48496455_48503402_RF
12	630.9891107	746.7347396	Hg38_2_11008274_11010451_11159160_11162827_FR
13	1103.424033	1305.83041	Hg38_17_7929728_7931226_8055790_8058200_RF
14	848.6435546	1002.35625	Hg38_1_203176687_203182913_203364177_203368484_FF
15	1061.876821	1253.336375	Hg38_1_203071961_203079830_203176687_203182913_RF
16	1064.697916	1255.183898	Hg38_22_42578934_42580470_42682810_42685060_FR
17	822.0470455	968.8627787	Hg38_6_88165452_88168090_88188008_88196988_RF
18	1446.466656	1703.063262	Hg38_17_7929728_7931226_7944762_7946565_RF
19	1629.587775	1915.154794	Hg38_19_55674838_55678632_55776223_55778463_RF
20	972.9491909	1142.727535	Hg38_1_203176687_203182913_203223882_203229092_FF
21	577.2547628	677.9719537	Hg38_16_85802241_85804577_86052797_86054069_RR
22	1434.324581	1684.362243	Hg38_16_85802241_85804577_85995087_85996356_RR
23	693.5039802	814.0479235	Hg38_2_47522457_47530546_47595212_47601970_FF
24	555.9113186	652.5313594	Hg38_2_47354005_47355988_47522457_47530546_RF
25	976.2122787	1144.421802	Hg38_1_203176687_203182913_203350351_203352113_FR
26	718.4342124	841.7670053	Hg38_2_11008274_11010451_11142335_11148573_FF
27	1139.844927	1335.346102	Hg38_2_1633514_1641369_1669637_1675007_RF
28	451.8232857	529.2158358	Hg38_5_75334371_75336800_75362869_75366450_FR
29	937.5414604	1097.631198	Hg38_3_194096425_194098698_194189178_194197532_FR
30	1184.22926	1384.932898	Hg38_20_48373933_48385139_48496455_48503402_RF
31	278.9131086	326.1582341	Hg38_5_140633075_140635001_140734427_140740603_RR

32	426.3827883	498.3408334	Hg38_11_59792208_59794193_59978140_59991387_RR
33	6058.251034	7078.393007	Hg38_11_5689507_5691245_5788110_5795433_FF
34	847.5448933	990.0410593	Hg38_6_1238869_1247003_1325058_1328459_RR
35	2264.54256	2644.820161	Hg38_19_55694907_55697956_55776223_55778463_RF
36	1015.369815	1185.864587	Hg38_8_30132536_30134220_30177058_30181551_RR
37	17461.76713	20381.65333	Hg38_11_63903088_63909160_64170615_64174763_FF
38	245.5629913	286.3714353	Hg38_5_140633075_140635001_140703783_140710933_RR
39	451.4150012	526.3634313	Hg38_5_75334371_75336800_75421277_75426441_FR
40	819.7532761	955.306015	Hg38_1_203176687_203182913_203381983_203386317_FR
41	9237.434251	10753.85168	Hg38_14_87760445_87771456_87814113_87820852_FF
42	33061.12818	38471.3562	Hg38_X_1815902_1820657_1830879_1832345_RR
43	367.3563507	426.8670684	Hg38_18_28150489_28152101_28322522_28342464_RR
44			Hg38_19_55104500_55106500_55175439_55177687_FR
45			Hg38_1_201489507_201495563_201554857_201559521_RF
46			Hg38_1_159614098_159617749_159863199_159866609_RF
47			Hg38_1_201387330_201388480_201554857_201559521_RF
48			Hg38_12_110242070_110251176_110379081_110380448_RR
49			Hg38_2_53751287_53756935_53865030_53869534_FR
50			Hg38_1_159708294_159713893_159863199_159866609_RF

表10.a6

	引子ID	引子序列	引子ID
1	OBD183-1149	GGCAAAGAGCAGACAGGGAAAGG	OBD183-115
2	OBD183-1109	TGACAGCAGAAGGAGCAGGACCACAA	OBD183-111
3	OBD183-1137	ACAGGGAAAGGGAGGCAGAAGGG	OBD183-1139
4	OBD183-2161	ATTGATGATCTCGCGAGACGCTTT	OBD183-2163
5	OBD183-1185	AAAGAGCAGACAGGGAAAGGGAGGCA	OBD183-1187
6	OBD183-1189	GACGCAGGAATGGAAGGGAAAGG	OBD183-119
7	OBD183-1025	TGAGGCGTGTCCGATGTGGGAAT	OBD183-1027
8	OBD183-1169	GAGGGAGAAAGGAATGAAGGCTGC	OBD183-117
9	OBD183-1061	CATAGTGGATTGAAACAGGGTGGAGC	OBD183-1063
10	OBD183-1129	CCCCACAAGCCCACAAAAGCCAT	OBD183-113
11	OBD183-1073	ACAAGACCTCTCCTCCCTGAGTC	OBD183-1075
12	OBD183-2165	CTCGCCTGACAGACGTTATTGTCT	OBD183-2167
13	OBD183-1005	AGGTGGAGCCCATCAAGCGGTAT	OBD183-1007
14	OBD183-1081	TGACCTTCCCCGCAGACAGTGCT	OBD183-1083
15	OBD183-1045	GAGACAGGCAGGTGAGAGAAAGG	OBD183-1047
16	OBD183-2169	GGACAGTTTCCATAACTGCTGGC	OBD183-2171
17	OBD183-1173	GAGGTGCTGGAGTGTGGCTGTGA	OBD183-1175
18	OBD183-1001	TTGGCTGACCTTGGGTGTGGTGT	OBD183-1003

19	OBD183-1017	TGAGGCGTGTCCGATGTGGGAAT	OBD183-1019
20	OBD183-1077	GAGACAGGCAGGTGAGAGAAAGG	OBD183-1079
21	OBD183-2173	AAATCGAATCACTTCATCGAATTCT	OBD183-2175
22	OBD183-1021	AGCAAGGTGAGGTGACAGGGAGC	OBD183-1023
23	OBD183-2177	TAGAGTACGTGTCCCAACTGTTGC	OBD183-2179
24	OBD183-2181	TAAGCGCGCGTACAGTAGGGCGA	OBD183-2183
25	OBD183-1069	GATGGGAGACAGGCAGGTGAGAG	OBD183-107
26	OBD183-1161	AGACATCCTGAGAGACCAGAGGG	OBD183-1163
27	OBD183-1153	AGGAGGAGCAGCACCAGCACTGT	OBD183-1155
28	OBD183-1117	TACAGGTTTGAGGTGCCCGTCGC	OBD183-1119
29	OBD183-1181	GAGGGACGCAGGAATGGAAGGGA	OBD183-1183
30	OBD183-1193	ACAAGACCTCTCCTCCCTGAGTC	OBD183-1195
31	OBD183-1113	GTGCCGCTGTGTAGGAAAGAAGC	OBD183-1115
32	OBD183-1125	ATGGACAACCAGGTGGCAGGAAAGGT	OBD183-1127
33	OBD183-2185	AAGGTAACCATCGGAGCCCGTGA	OBD183-2187
34	OBD183-1037	TACCAAGAGGGTGGCACTGGGCT	OBD183-1039
35	OBD183-1013	CTGAGGCGTGTCCGATGTGGGAA	OBD183-1015
36	OBD183-2189	CCCAACATAAGGCAACTCATGCG	OBD183-2191
37	OBD183-2193	GGATACACATGCGCCTCGGTCCGA	OBD183-2195
38	OBD183-1141	CGGGTGCCGCTGTGTAGGAAAGA	OBD183-1143
39	OBD183-1057	ACACAAGAGAGAGAGACGCAGGTGAC	OBD183-1059
40	OBD183-1105	GATGGGAGACAGGCAGGTGAGAG	OBD183-1107
41	OBD183-1121	CTGCCAATGAGAGTGTCAGCCCG	OBD183-1123
42	OBD183-2197	GGAACGAATATGAGGCAGACTCTCA	OBD183-2199
43	OBD183-1009	AAGGCAGAGAACAAAACACAGAGGTG	OBD183-1011
44	OBD183-2201	CACAGAAGGCGTGCGAGCACCAATG	OBD183-2203
45	OBD183-1165	GACTGGGAGCAGGGTTTTGATGG	OBD183-1167
46	OBD183-1085	TTGGAGGTGGAGGTCTGCCAGGT	OBD183-1087
47	OBD183-1101	GACTGGGAGCAGGGTTTTGATGG	OBD183-1103
48	OBD183-2205	TACCAAAGCTGAGAGTCGTCTATC	OBD183-2207
49	OBD183-1049	CATTGCCACTCCCAGTCGGGCTA	OBD183-105
50	OBD183-1093	TTGGAGGTGGAGGTCTGCCAGGT	OBD183-1095

表10.a7

	引子序列
1	CTCTCCCTTCTCTCCTACCCTGC
2	AGGATGGTGACCCTTGTATCAGTTAG
3	GTCCATCTGTCCAGTCAGGTCCT
4	AAAGGCGTCCAGTCTCGTGTATAAG
5	TATTCTTTCCCAGAGTCCCATCTTGG

6	CTCCATCTCCCACAGCATCCAGC
7	ACGACATCGCCGCAGCACTCATC
8	GGTTGGGTTTTCTCAATAATCCATAG
9	GGAGAAGAGGACTGTAGAAGGAGACA
10	CCGCCCATCTGTAAGCCCATCTC
11	GCTGTTCCTGCCTCTCTGCTACG
12	CACAGGCAAAAATGTAACTTTCC
13	TGAAGTGGCATCTCTCTCCCGCC
14	GTTTGGTAGTGGCTGTCTGGAGC
15	ATCCGCCTCCACACACCCACACT
16	TAACGCCCATCTACACTTAGCTATA
17	CGCTTGAGTTGGTGCTGAATGCC
18	TGAAGTGGCATCTCTCTCCCGCC
19	TGGGAGAGCACTCGGGAACCTCA
20	CCTTTCCGCTACCTGGCTGTGGT
21	TTGAACACTCGGTCGAAGGCGCTCG
22	CCTGGAAGATGTGGGAGGCTGTT
23	GCACGCTACTGTTACGAGATTCCT
24	CCGAAGAAAAGTTAAGCCCCTCG
25	CTCTGGCTTGACCTTCTCCACTG
26	GCCTGGAGCAACTTCCTGTGCCA
27	CCTTCCTCTGGGCTCTCTGTAAC
28	GGCTTCCAGTGTAGAGGTTACCC
29	GTGTGTTTTGAGGAGCACCCAGC
30	CCTGGTGGACTTGGCTTCGTTCC
31	GGTGTTGAGGTCCAGTCTTCCGC
32	AAAGTATGTAGCAAAGCACCCCACTG
33	CTGGCATGAAATACTACGGGCCTTC
34	CGTGTGGTTATGGAATCAGGGTGC
35	AAGGACTTGAGCAGGTGATGGGC
36	ATGATTGCCGCATTTTCACGGTTGC
37	TCATCAAGCCCGCCAACGGGTTAG
38	GGAGTCCTTCACCACACAGTCAC
39	CAGCCAGGTAGAAATGAATACAGGGT
40	GCAGACAAAGGCTGAGAGAGAGG
41	CAGTGGATGGTGGAAACCCTGGA
42	ATCGCTATCTGTCCGTAACGTCG
43	GCAGGAAAGACTCAAGCACTCTGGAC
44	CTATCATCGGTCACTTGTGTTAGGT
45	GCCTCACTGTCTCAGCCCTGCTA

46	TGTCCCCTTCTACTACCCCACCT
47	CCCCAAGCAGGCTCTGGCACATA
48	TATCTTCTAATAGTACCTCTATTAA
49	GGGAAGGAAAAGAGGGCAAGTCC
50	GGTCCACTGGCAATCACCCTACT

表10.a8

51	Hg38_12_8119443_8124985_8219310_8221338_FR	CLEC4A	17037.22852
52	Hg38_12_8083961_8090020_8219310_8221338_FR	CLEC4A	18859.97781
53	Hg38_12_8219310_8221338_8280556_8285132_RR	CLEC4A	22456.54994
54	Hg38_12_8219310_8221338_8280556_8285132_RF	CLEC4A	24421.30275
55	Hg38_12_8219310_8221338_8360776_8364742_RR	CLEC4A	24631.85253
56	Hg38_12_8163206_8167779_8219310_8221338_FR	CLEC4A	26120.50389
57	Hg38_12_8219310_8221338_8328073_8331432_RR	CLEC4A	26483.91688
58	Hg38_12_8219310_8221338_8255950_8259013_RR	CLEC4A	26177.66647
59	Hg38_X_1815902_1820657_1862592_1866142_RR	AKAP17A	75133.70138
60	Hg38_3_196593741_196597691_196703167_196707250_FR	NRROS	74115.71314
61	Hg38_5_75334371_75336800_75481806_75484209_FF	COL4A3BP	57905.16147
62	Hg38_2_161723651_161741319_161918005_161924903_FF	DPP4	62589.08218
63	Hg38_6_123594_131362_212545_213965_RF	DUSP22	75804.29568
64	Hg38_1_27649538_27652259_27797543_27806064_RF	IFI6	66756.33102
65	Hg38_X_133714472_133717449_133849575_133858877_FR	GPC3	73268.76653
66	Hg38_3_55467637_55470328_55535014_55543312_RF	WNT5A	72517.34766
67	Hg38_4_145148297_145150633_145243015_145254513_FF	ABCE1	68632.72477
68	Hg38_19_55633863_55635586_55776223_55778463_RF	NLRP9	75169.9172
69	Hg38_5_75334371_75336800_75398018_75402594_FR	COL4A3BP	68717.29379
70	Hg38_12_57452982_57456003_57579684_57582438_FF	ARHGAP9	56735.59546
71	Hg38_17_7811362_7813705_7929728_7931226_RR	KDM6B	64335.59006
72	Hg38_12_54361590_54362896_54554738_54558191_FR	GPR84	77977.99646
73	Hg38_19_55562835_55568514_55776223_55778463_FF	NLRP9	68297.20436
74	Hg38_11_71580341_71586157_71832412_71840897_FR	DEFB108B	77867.08944
75	Hg38_6_88188008_88196988_88297132_88306521_FF	CNR1	66691.60404
76	Hg38_6_29569885_29574451_29588494_29591069_FR	UBD	70449.91197
77	Hg38_5_75334371_75336800_75441359_75447695_FR	COL4A3BP	64955.57945
78	Hg38_1_6450603_6452273_6528747_6530250_RR	TNFRSF25	71701.08408
79	Hg38_1_203176687_203182913_203266998_203270781_FF	CHI3L1	73183.63882
80	Hg38_5_100903133_100904261_100940255_100954422_FR	SLCO4C1	71609.32595
81	Hg38_13_52856863_52871994_53051233_53054182_RR	OLFM4	71949.72778
82	Hg38_13_52856863_52871994_52963892_52968641_RR	OLFM4	68520.61362
83	Hg38_3_105173425_105200082_105366513_105369025_FR	ALCAM	66104.48917

84	Hg38_11_71704758_71706689_71832412_71840897_FR	DEFB108B	64412.60339
85	Hg38_5_53482717_53490284_53612898_53621230_RR	FST	77444.92065
86	Hg38_1_20178914_20185415_20244434_20247937_FR	PLA2G2F	62651.6697
87	Hg38_7_44346974_44354823_44468808_44471840_RF	CAMK2B	66580.98176
88	Hg38_2_47522457_47530546_47606707_47620212_FF	MSH2	72271.33277
89	Hg38_16_85802241_85804577_85911952_85914037_RR	IRF8	74094.77992
90	Hg38_16_85802241_85804577_86036135_86037752_RR	IRF8	77409.18625
91	Hg38_8_143703137_143706882_143989689_143994132_RR	SCRIB	73024.49729
92	Hg38_19_38110009_38116645_38359207_38361549_RF	SIPA1L3	72414.84672
93	Hg38_15_53421523_53422709_53572546_53588481_FR	ONECUT1	74543.21657
94	Hg38_16_85802241_85804577_85867011_85868324_RR	IRF8	76315.72288
95	Hg38_13_52856863_52871994_52977238_52983123_RR	OLFM4	85912.11333
96	Hg38_19_11340579_11345804_11410807_11412077_FR	RAB3D	65883.23259
97	Hg38_6_88064644_88073249_88188008_88196988_RF	AKIRIN2	76118.52573
98	Hg38_14_87632983_87637573_87760445_87771456_RF	GPR65	60903.03466
99	Hg38_6_31492265_31495553_31621846_31623705_RF	AIF1	64391.76277
100	Hg38_1_203176687_203182913_203386317_203394696_FF	CHI3L1	84256.99019

表10.b1

51	-1.291886788	0.004735379	0.004479108	免疫
52	-1.276607983	0.005042802	0.004915136	免疫
53	-1.258007859	0.004367629	0.004084773	免疫
54	-1.245249491	0.004313719	0.004004296	免疫
55	-1.242984819	0.00604682	0.00604682	免疫
56	-1.242567483	0.003834101	0.00346781	免疫
57	-1.237550281	0.004735694	0.004515894	免疫
58	-1.237318061	0.005042802	0.004853215	免疫
59	-1.185115992	0.001735668	0.001164435	免疫
60	-1.184021602	0.003517821	0.003042841	免疫
61	-1.177773137	0.001038693	0.000435011	免疫
62	-1.174455561	0.000548965	0.000112646	免疫
63	-1.168790651	0.000439511	2.02372E-05	免疫
64	-1.16673532	0.001014024	0.000363933	免疫
65	-1.166592129	0.000959795	0.000340181	免疫
66	-1.16579207	0.000548965	9.19356E-05	免疫
67	-1.161957027	0.001889671	0.001291674	免疫
68	-1.161756615	0.000548965	0.000102232	免疫
69	-1.161687815	0.001256517	0.000624724	免疫
70	-1.161219868	0.006007073	0.005981727	免疫

71	-1.161116734	0.000959795	0.000338831	免疫
72	-1.160957348	0.000508234	5.40393E-05	免疫
73	-1.160376317	0.001256517	0.000628074	免疫
74	-1.1596609	0.00048383	4.6954E-05	免疫
75	-1.159541181	0.001087752	0.000501372	免疫
76	-1.159137231	0.001687588	0.001103697	免疫
77	-1.158036372	0.004074156	0.003713155	免疫
78	-1.157946235	0.00592368	0.005873691	免疫
79	-1.157617797	0.001038693	0.000427764	免疫
80	-1.157435731	0.001660717	0.001079116	免疫
81	-1.156728084	0.000548965	0.000103051	免疫
82	-1.155458775	0.001038693	0.000399475	免疫
83	-1.155306024	0.001038693	0.000419393	免疫
84	-1.155297894	0.001523301	0.000897002	免疫
85	-1.155073798	0.00048383	4.19686E-05	免疫
86	-1.154967103	0.002294852	0.001733243	免疫
87	-1.154518586	0.001386154	0.000789582	免疫
88	-1.154279434	0.001660717	0.00106681	免疫
89	-1.154128129	0.00060994	0.000156989	免疫
90	-1.153773794	0.00048383	3.04929E-05	免疫
91	-1.153622734	0.002297443	0.001793362	免疫
92	-1.153379263	0.000520629	6.69249E-05	免疫
93	-1.152793154	0.000439511	2.214E-05	免疫
94	-1.152700501	0.000548965	0.000103767	免疫
95	-1.152626951	0.000211853	2.73861E-06	免疫
96	-1.152618451	0.001555148	0.000948832	免疫
97	-1.152145384	0.001038693	0.000418922	免疫
98	-1.151874288	0.004367629	0.004091197	免疫
99	-1.151161423	0.001794515	0.001211487	免疫
100	-1.151012921	0.000520629	7.13254E-05	免疫

表10.b2

51	CCCCCATCATTTGACAAAATATCATAACTCGAGTCCCCTTTGATTTGCG CTTCATTAATT
52	TCAAAAGGGAAGACTGCCTATATCAAACTCGAGTCCCCTTTGATTTGCG CTTCATTAATT
53	AATTAATGAAGCGCAAATCAAAGGGGACTCGACTATAAGAGAGAGGTA CGCTCCGGGGGG

54	AGGCTCCGTTCCAGTTCTTGATCCACACTCGAGTCCCCTTTGATTTGCGCTTCATTAATT
55	AATTAATGAAGCGCAAATCAAAGGGGACTCGAAGATCCAGAAAATTGGCCTGGTGCAGTA
56	CAGTCCTTGCCTCCTCAGAAGAAAGAACTCGAGTCCCCTTTGATTTGCGCTTCATTAATT
57	AATTAATGAAGCGCAAATCAAAGGGGACTCGACTTTCAAACCTTTCTCCACAACAGGGCC
58	AATTAATGAAGCGCAAATCAAAGGGGACTCGAATCCCTGGGCTGAAGTGATCCACTTGCC
59	AAGCGAGCGGATCACCTCGGCCAGGAGTTCGAGAGCAGCCTGGCCACATGGGAGGGAGGG
60	GACAGTTGGACTACCTGAGGTCAGGAGTTCGAGACATAATTTATATAGCTCAGTATATAC
61	CCCGCGCTAGTAACTGAGCTTTCAGTCATCGATGTTACCATGAGGCTTTCAAATAACAAG
62	ACAGTCCTCCGCTCTACCAACTGAGCTATCGAAACCTGATGATATGGCTTCTCCATTCAT
63	CAGAAAGAAGACAAGGGGCATCTGAATGTCGAATCAAGTTTATAATTTTAAAATAATTGG
64	TCCCTGAGTTATGCAGCTCTTCCAAATGTCGAGGAGCTAAAAGCGAAGGCCGCGGGGAAG
65	ACCACACCCTGGTCCTGGTAGTTAAAGATCGACCACTTTCAAATCTTTTCCACCTGGTAA
66	GGAGACAGGGTTACATCAGCCAGTAACATCGATGTTTGTTTTTTAAACCAGTGAAATATA
67	GTTGTCTTACTCCTGAAGGATGCTGCAGTCGAGGCATTTTAACTAAATTATCTGCTTCAC
68	CAGAATAGGAAGGAGCAAGCTGAGAGGTTCGACCTCCCAAATTGTTGGGATTACAGGCGT
69	CCCGCGCTAGTAACTGAGCTTTCAGTCATCGAAAATAAATAAGTAAAATTAAAAAAAAAT
70	AGCAGTCTCTACTTTTCTAGAGGTAGGTTCGAGAAAAAGTTTCTGCAGCCCCTCACCAAG
71	TAACTCACAAAGGCAAGATTAGTTGATGTCGAGGATGAGGTAAAGGTCTCGGAGGATAAG
72	CAAAGCAGAGGAACACAGCAAAACACATTCGAGTTCACATTCTGCCCTAACAATTACAAC
73	AATGACACGCTAAAAGGAAAAAGGAACGTCGAACCTCTCAGCTTGCTCCTTCCTATTCTG
74	GTTTTTGGCTACCAGTCCTTCACCTGCGTCGACCTTTATAGACGCTATCAAGGAAGCACC
75	TTGTGGTGAGAACGATACAGGAGACAGCTCGAAATGGTTCATAGATTTAAGTGTAAAAGT
76	ATTTTGTCTGTGAGGTCCCAGCTCTAATTCGACTCTCCTGTGAAGACAC

	CTCCTACAATG
77	CCCGCGCTAGTAACTGAGCTTTCAGTCATCGACAAACTATGCATTTCTCAGAATGCATCT
78	GTATGAGGTGCAAGGCCCCACCCATTCTTCGAGCAAGAAGAGGAGGGCCAAGCCCAGGCC
79	GTCCCAAGTGGCATGAGAGGTAGACTCATCGAACTCATCCATTCCAAAGATGGCTCAGGG
80	GCAGGGACACTTTTCAAGAGTTCTGTGTTCGAGATATTAAACAAGACATTCAATTGGTTC
81	GTTGGAAGGAATCCAGGGTAAGGGATATTCGAGGGACCAAATCTCCAACTTTTTTTTCCC
82	GTTGGAAGGAATCCAGGGTAAGGGATATTCGAGGGTTGCTTTTCTTTTTCAAGAAAAATT
83	TTCTCATGTTAATAAACATGAAAAATGGTCGATTTTTAAACCTCAGCGAGGGTGGGTGGG
84	AGGTGACCGTCTTCCAGAGGAGAGCGGATCGACCTTTATAGACGCTATCAAGGAAGCACC
85	GAGACGCGGGAGAAAAGTAGGAAATAAATCGAAAATAAAACAACTACGTTTGCTGTACAA
86	GCCAGGATAGGGAAGAAGCAGATTGATATCGAGGATGATAGATCCCAAGGAGAGAGTGAC
87	CAAACCAGAGATGAAGCAACAGGTCTAATCGAGTCCTTTGCCCATATTTTGATTGGATTG
88	CGGAGGGTATAATAACTGCTGTTGTGTATCGAGGGCTTTTCAGGACTGGAGTGACTGATG
89	GAGAGGCCGTTCTAAAAGCACATTTGTATCGAACACTTTGGACAGCAGTCTTTTAAATGG
90	GAGAGGCCGTTCTAAAAGCACATTTGTATCGAGTTGGTCACCTGAGCCTATTATTGACGG
91	CAACCAACCAGAAAACACAGGAAACAACTCGATTTGGGAACTAAAGGATTAGGCTTCTTG
92	ACGCTGAGGAGGAAGATTCGGGCTGGATTCGAGGAAGTGTTTCTGGCCATGGTGAGGCCT
93	CTGCCTTCCTAACCATGTCCTGAGAAACTCGAAAAGCACAATCCATGAAAGAAAAAAATT
94	GAGAGGCCGTTCTAAAAGCACATTTGTATCGATCTGTCACATACCTAGAAATACAGGGAC
95	GTTGGAAGGAATCCAGGGTAAGGGATATTCGATACTGCTTGAACATAAAATGAAATGTAG
96	CAAAGCAGTCAAGGCCCAAAGACAACCCTCGAAAAGAATGTGAGACATACCTCAGGAAAA
97	TTGTGGTGAGAACGATACAGGAGACAGCTCGATTTGTAGCTGATGCATCGCAAACTAAAA
98	CGCCCTCCCAGGAGATCCCCACAACTAATCGACACCCTCTGATTTCATCCCTGACCAGTC

99	GCCATCAGATCTCCCACATGAGGCATTTTCGACTTTGTCTCCATCCAAG GACGCTATGGC
100	GTCCCAAGTGGCATGAGAGGTAGACTCATCGAGCCTGCAGTCTCTGCTA CTCAGGAGGCT

表10.b3

51	12	8124954	8124983	8219312	8219341	12
52	12	8089989	8090018	8219312	8219341	12
53	12	8219312	8219341	8280558	8280587	12
54	12	8219312	8219341	8285101	8285130	12
55	12	8219312	8219341	8360778	8360807	12
56	12	8167748	8167777	8219312	8219341	12
57	12	8219312	8219341	8328075	8328104	12
58	12	8219312	8219341	8255952	8255981	12
59	X	1815904	1815933	1862594	1862623	X
60	3	196597660	196597689	196703169	196703198	3
61	5	75336769	75336798	75484178	75484207	5
62	2	161741288	161741317	161924872	161924901	2
63	6	123596	123625	213934	213963	6
64	1	27649540	27649569	27806033	27806062	1
65	X	133717418	133717447	133849577	133849606	X
66	3	55467639	55467668	55543281	55543310	3
67	4	145150602	145150631	145254482	145254511	4
68	19	55633865	55633894	55778432	55778461	19
69	5	75336769	75336798	75398020	75398049	5
70	12	57455972	57456001	57582407	57582436	12
71	17	7811364	7811393	7929730	7929759	17
72	12	54362865	54362894	54554740	54554769	12
73	19	55568483	55568512	55778432	55778461	19
74	11	71586126	71586155	71832414	71832443	11
75	6	88196957	88196986	88306490	88306519	6
76	6	29574420	29574449	29588496	29588525	6
77	5	75336769	75336798	75441361	75441390	5
78	1	6450605	6450634	6528749	6528778	1
79	1	203182882	203182911	203270750	203270779	1
80	5	100904230	100904259	100940257	100940286	5
81	13	52856865	52856894	53051235	53051264	13
82	13	52856865	52856894	52963894	52963923	13
83	3	105200051	105200080	105366515	105366544	3
84	11	71706658	71706687	71832414	71832443	11
85	5	53482719	53482748	53612900	53612929	5

86	1	20185384	20185413	20244436	20244465	1
87	7	44346976	44347005	44471809	44471838	7
88	2	47530515	47530544	47620181	47620210	2
89	16	85802243	85802272	85911954	85911983	16
90	16	85802243	85802272	86036137	86036166	16
91	8	143703139	143703168	143989691	143989720	8
92	19	38110011	38110040	38361518	38361547	19
93	15	53422678	53422707	53572548	53572577	15
94	16	85802243	85802272	85867013	85867042	16
95	13	52856865	52856894	52977240	52977269	13
96	19	11345773	11345802	11410809	11410838	19
97	6	88064646	88064675	88196957	88196986	6
98	14	87632985	87633014	87771425	87771454	14
99	6	31492267	31492296	31623674	31623703	6
100	1	203182882	203182911	203394665	203394694	1

表10.b4

51	8120984	8124983	8219312	8223311	-1	12.07327084	12.44275049
52	8086019	8090018	8219312	8223311	-1	11.95497869	12.30729427
53	8219312	8223311	8280558	8284557	-1	13.36820619	13.69934713
54	8219312	8223311	8281131	8285130	-1	12.36592063	12.68235545
55	8219312	8223311	8360778	8364777	-1	13.32842649	13.64223517
56	8163778	8167777	8219312	8223311	-1	12.37704415	12.69036836
57	8219312	8223311	8328075	8332074	-1	13.5625678	13.87005494
58	8219312	8223311	8255952	8259951	-1	13.3439069	13.6511233
59	1815904	1819903	1862594	1866593	-1	15.01277876	15.25780703
60	196593690	196597689	196703169	196707168	-1	13.69773762	13.94143302
61	75332799	75336798	75480208	75484207	-1	8.776702189	9.012763863
62	161737318	161741317	161920902	161924901	-1	10.77393009	11.00592221
63	123596	127595	209964	213963	-1	9.115283145	9.340299688
64	27649540	27653539	27802063	27806062	-1	9.814441912	10.03691923
65	133713448	133717447	133849577	133853576	-1	13.02851094	13.25081119
66	55467639	55471638	55539311	55543310	-1	8.854845783	9.076156277
67	145146632	145150631	145250512	145254511	-1	10.25892229	10.47547901
68	55633865	55637864	55774462	55778461	-1	11.12541749	11.34172535
69	75332799	75336798	75398020	75402019	-1	8.782342773	8.998565192
70	57452002	57456001	57578437	57582436	-1	9.336877845	9.552519006
71	7811364	7815363	7929730	7933729	-1	9.948424476	10.1639375
72	54358895	54362894	54554740	54558739	-1	9.486338095	9.701653065
73	55564513	55568512	55774462	55778461	-1	9.849737886	10.06433064

74	71582156	71586155	71832414	71836413	-1	11.29688058	11.51058358
75	88192987	88196986	88302520	88306519	-1	9.852031669	10.06558573
76	29570450	29574449	29588496	29592495	-1	9.938800965	10.15185234
77	75332799	75336798	75441361	75445360	-1	9.027203502	9.238884069
78	6450605	6454604	6528749	6532748	-1	10.7301206	10.94168886
79	203178912	203182911	203266780	203270779	-1	9.764657929	9.975816937
80	100900260	100904259	100940257	100944256	-1	8.543546476	8.754478563
81	52856865	52860864	53051235	53055234	-1	9.053565284	9.263615049
82	52856865	52860864	52963894	52967893	-1	8.984087711	9.192553498
83	105196081	105200080	105366515	105370514	-1	9.045714651	9.253989703
84	71702688	71706687	71832414	71836413	-1	11.30160114	11.50986604
85	53482719	53486718	53612900	53616899	-1	10.02446578	10.2324508
86	20181414	20185413	20244436	20248435	-1	9.479465863	9.687317623
87	44346976	44350975	44467839	44471838	-1	9.821968558	10.02925996
88	47526545	47530544	47616211	47620210	-1	9.169560439	9.376552961
89	85802243	85806242	85911954	85915953	-1	9.366760906	9.573564304
90	85802243	85806242	86036137	86040136	-1	9.504386132	9.710746533
91	143703139	143707138	143989691	143993690	-1	10.32744034	10.53361184
92	38110011	38114010	38357548	38361547	-1	10.63356996	10.83943695
93	53418708	53422707	53572548	53576547	-1	8.74166765	8.946801323
94	85802243	85806242	85867013	85871012	-1	9.177859427	9.382877141
95	52856865	52860864	52977240	52981239	-1	8.36761929	8.572544949
96	11341803	11345802	11410809	11414808	-1	10.83922183	11.04413685
97	88064646	88068645	88192987	88196986	-1	9.697794475	9.90211725
98	87632985	87636984	87767455	87771454	-1	13.48348911	13.68747238
99	31492267	31496266	31619704	31623703	-1	10.12377665	10.3268668
100	203178912	203182911	203390695	203394694	-1	10.05723707	10.2601411

表10.b5

51	4309.398622	5567.255144	Hg38_12_8119443_8124985_8219310_8221338_FR
52	3970.152459	5068.328324	Hg38_12_8083961_8090020_8219310_8221338_FR
53	10573.79904	13301.92229	Hg38_12_8219310_8221338_8280556_8285132_RR
54	5278.530474	6573.087384	Hg38_12_8219310_8221338_8280556_8285132_RF
55	10286.22855	12785.62593	Hg38_12_8219310_8221338_8360776_8364742_RR
56	5319.386501	6609.696696	Hg38_12_8163206_8167779_8219310_8221338_FR
57	12098.72832	14972.78463	Hg38_12_8219310_8221338_8328073_8331432_RR
58	10397.19612	12864.63854	Hg38_12_8219310_8221338_8255950_8259013_RR
59	33059.53377	39179.38218	Hg38_X_1815902_1820657_1862592_1866142_RR
60	13287.0906	15732.2023	Hg38_3_196593741_196597691_196703167_196707250_FR
61	438.5818165	516.5498819	Hg38_5_75334371_75336800_75481806_75484209_FF

62	1750.959609	2056.424249	Hg38_2_161723651_161741319_161918005_161924903_FF
63	554.5920574	648.2020116	Hg38_6_123594_131362_212545_213965_RF
64	900.4122733	1050.542802	Hg38_1_27649538_27652259_27797543_27806064_RF
65	8355.502851	9747.46386	Hg38_X_133714472_133717449_133849575_133858877_FR
66	462.992747	539.7532731	Hg38_3_55467637_55470328_55535014_55543312_RF
67	1225.302538	1423.748895	Hg38_4_145148297_145150633_145243015_145254513_FF
68	2234.006228	2595.371513	Hg38_19_55633863_55635586_55776223_55778463_RF
69	440.2999202	511.491052	Hg38_5_75334371_75336800_75398018_75402594_FR
70	646.6664016	750.9218735	Hg38_12_57452982_57456003_57579684_57582438_FF
71	988.0392032	1147.228853	Hg38_17_7811362_7813705_7929728_7931226_RR
72	717.2529044	832.7000298	Hg38_12_54361590_54362896_54554738_54558191_FR
73	922.7128165	1070.694099	Hg38_19_55562835_55568514_55776223_55778463_FF
74	2515.937863	2917.634766	Hg38_11_71580341_71586157_71832412_71840897_FR
75	924.1810319	1071.625965	Hg38_6_88188008_88196988_88297132_88306521_FF
76	981.4704112	1137.658895	Hg38_6_29569885_29574451_29588494_29591069_FR
77	521.7458832	604.2007098	Hg38_5_75334371_75336800_75441359_75447695_FR
78	1698.588409	1966.874053	Hg38_1_6450603_6452273_6528747_6530250_RR
79	869.8711636	1006.97834	Hg38_1_203176687_203182913_203266998_203270781_FF
80	373.1330847	431.8775647	Hg38_5_100903133_100904261_100940255_100954422_FR
81	531.3671697	614.647328	Hg38_13_52856863_52871994_53051233_53054182_RR
82	506.3838946	585.1057145	Hg38_13_52856863_52871994_52963892_52968641_RR
83	528.4835118	610.5601847	Hg38_3_105173425_105200082_105366513_105369025_FR
84	2524.183613	2916.184012	Hg38_11_71704758_71706689_71832412_71840897_FR
85	1041.513465	1203.024913	Hg38_5_53482717_53490284_53612898_53621230_RR
86	713.8444176	824.4668191	Hg38_1_20178914_20185415_20244434_20247937_FR
87	905.1220656	1044.980247	Hg38_7_44346974_44354823_44468808_44471840_RF
88	575.8544659	664.696967	Hg38_2_47522457_47530546_47606707_47620212_FF
89	660.2007221	761.9562241	Hg38_16_85802241_85804577_85911952_85914037_RR
90	726.282059	837.965207	Hg38_16_85802241_85804577_86036135_86037752_RR
91	1284.899972	1482.289818	Hg38_8_143703137_143706882_143989689_143994132_RR
92	1588.632775	1832.296098	Hg38_19_38110009_38116645_38359207_38361549_RF
93	428.0595343	493.4641006	Hg38_15_53421523_53422709_53572546_53588481_FR
94	579.1765684	667.6171203	Hg38_16_85802241_85804577_85867011_85868324_RR
95	330.2968246	380.7090219	Hg38_13_52856863_52871994_52977238_52983123_RR
96	1832.022909	2111.623407	Hg38_19_11340579_11345804_11410807_11412077_FR
97	830.4758901	956.8289633	Hg38_6_88064644_88073249_88188008_88196988_RF
98	11453.40632	13192.88425	Hg38_14_87632983_87637573_87760445_87771456_RF
99	1115.733415	1284.389266	Hg38_6_31492265_31495553_31621846_31623705_RF
100	1065.442539	1226.338128	Hg38_1_203176687_203182913_203386317_203394696_FF

表10.b6

51	OBD183-2209	ATTGAGTTGTTGACCCTACAAGCA	OBD183-2211
52	OBD183-2213	ATCGTCGTCGCTCCTCAAACTTG	OBD183-2215
53	OBD183-2217	CGCTCTATCAACTCTAGAATGTTGT	OBD183-2219
54	OBD183-2221	GTGCTCAGGACGACAGTCTGGGA	OBD183-2223
55	OBD183-2225	CAGGGGCCCTTCTAACGAAGCGGG	OBD183-2227
56	OBD183-2229	GCTGCTTGCTTGTGGGACTTGCC	OBD183-2231
57	OBD183-2233	CAAGTCGCAGCTCGGGGCAGATCTT	OBD183-2235
58	OBD183-2237	ATGGGCGCTCTTACTCCGTTGGGC	OBD183-2239
59	OBD183-2241	CTTAAAGACTGTCCATTTGACAACA	OBD183-2243
60	OBD183-2245	TCATCGGCGGGAGGCGGTCCCAGGC	OBD183-2247
61	OBD183-2249	CCAAATCGCAGCGTAGGGCTAGGA	OBD183-2251
62	OBD183-2253	TCCAGTAAAGGGCCGGGAGGTTAT	OBD183-2255
63	OBD183-2257	AACCGCACATAGTAAATAGCTCA	OBD183-2259
64	OBD183-2261	GGTGATGAGCAAAGAAGTGGAAA	OBD183-2263
65	OBD183-2265	GCTTTAGTGTTGAAATCTCCCTTG	OBD183-2267
66	OBD183-2269	CAGTTTCTGACCGGCCGTGGGCC	OBD183-2271
67	OBD183-2273	TCGCGATGAATGGGGTGAGCGGGA	OBD183-2275
68	OBD183-1053	CTGAGGCGTGTCCGATGTGGGAA	OBD183-1055
69	OBD183-2277	CGCGAAGGAGGTGCAAGGCCCAAAG	OBD183-2279
70	OBD183-1177	ACAGGGAAAGGGAGGCAGAAGGG	OBD183-1179
71	OBD183-1029	GATGGAGCAGAACAGGAAGTTGGG	OBD183-103
72	OBD183-1145	CCAGGTGAGGTTGGCAGCAAGCA	OBD183-1147
73	OBD183-1197	GGATGGATGTGGGAATGGATGGG	OBD183-1199
74	OBD183-2281	TATCTCAGGTATCTTGAAAGATT	OBD183-2283
75	OBD183-2285	CACCCGTGCTAGTGTCGTATACTG	OBD183-2287
76	OBD183-2289	GAAATAGAGGGCTTACTATATGTT	OBD183-2291
77	OBD183-2293	ATCAAAATCGTAGCCGCATGGCA	OBD183-2295
78	OBD183-2297	CGGTCCCGCAGCTCCGGTTAACGCT	OBD183-2299
79	OBD183-1097	GATGGGAGACAGGCAGGTGAGAG	OBD183-1099
80	OBD183-1157	TCACCTCTCCTCCGTCCCACCATTTT	OBD183-1159
81	OBD183-1033	GACCAAAGCACCTCTGAAGGACAAAG	OBD183-1035
82	OBD183-1041	GACCAAAGCACCTCTGAAGGACAAAG	OBD183-1043
83	OBD183-2301	TCCTAACTGGATTGCCACACTTGGTG	OBD183-2303
84	OBD183-2305	GCTAATACCTGTAAGAGGTAGTT	OBD183-2307
85	OBD183-1133	TGAGTGAGCAGTGAGCGGTGGCA	OBD183-1135
86	OBD183-1089	CTTTTGAGAATGCCGAGGTAATGGGC	OBD183-109
87	OBD183-2309	AGAATCACCTACTCAGGGACACACTG	OBD183-2311
88	OBD183-2313	GCCCTAAGGCTCTCTGGAGCGGAGT	OBD183-2315
89	OBD183-2317	AGCAAGGTGAGGTGACAGGGAGC	OBD183-2319

90	OBD183-2321	ACAGCAAGGTGAGGTGACAGGGA	OBD183-2323
91	OBD183-2325	GCGCGGAAAAGTCAATAGAAGAT	OBD183-2327
92	OBD183-2329	GGGAGGACTCTGGTCTCAGGGAT	OBD183-2331
93	OBD183-2333	TCTCTTACCATCAATTGACATCTTT	OBD183-2335
94	OBD183-2337	AGCAAGGTGAGGTGACAGGGAGC	OBD183-2339
95	OBD183-2341	GACCAAAGCACCTCTGAAGGACAAAG	OBD183-2343
96	OBD183-2345	GTTCCCGCCTTCCTCCATCTTGC	OBD183-2347
97	OBD183-2349	CTCCCCGAGACCGATAAGCAATCAG	OBD183-2351
98	OBD183-2353	ACAGGTGGGTCCGCACAGTCGCC	OBD183-2355
99	OBD183-1065	ATAAATGTGTCCCAGGATAGGAGGC	OBD183-1067
100	OBD183-2357	CCAGTCGATTGATAAGGCGGCGCAC	OBD183-2359

表10.b7

51	TAAGCCGACAGGACCGAACGGTCA
52	TGTGGCGTTCACGATTCAGGCAT
53	ATACAAGGCCAATCGTGCGGATGCG
54	AGCAGAAGGAGCAGGACCACAAG
55	TGCTGGATATCCTAGTGAGCGCGA
56	AGCAGAAGGAGCAGGACCACAAG
57	ATGGGAACTAAGGGTGAGTAGTA
58	AGCATGTGGGACGTAGTCGGAGAG
59	ATTTTCACGTAGATCATAACCGGT
60	TCTCAGAAAAGCTCTGGAGCCACCC
61	CCTCTCTGAGAGTCGGATCTCGC
62	GAAACTGTTCAGCTCTGGCAAGA
63	CGTACCAAATTCCGTTTTATAAGG
64	GAAATAAGCAGGTCCCGTTACCTC
65	AATTGGCTTAACTGTAGCATGCACA
66	ATCCAAACACAAATCGCTGTGGCA
67	ATATGTCCTCGTTACTATTGGTT
68	GTTTGCTGTCCTCCATCCTCCCA
69	AAGGGGTCAAGGACCTACATCAA
70	TTACCACGCCAATCCCAGCCCTT
71	TGAAGTGGCATCTCTCTCCCGCC
72	CCCTGCCTCTTCACAAAGCAAGC
73	CTGAGGCGTGTCCGATGTGGGAA
74	TGGAAGAGACTATACTCAGGTTA
75	TCAAATCTAGATGTATCATGCGCAA
76	CTCGCTTAAGCAGGTGCGTGCTT
77	GGGCCATTTAAAGAAAGAGGAACAG
78	AGTATCAGTTCGCCTGTGAGCAGC

79	TGTCACCTCTTCCACCCTCTCAG
80	ACAATCTCTCCACTAAGCAAACCCTG
81	CACATACAAAGCATCATTCCAGGTGC
82	CCTCAGGGAAAGGGAAAACCAAGAGT
83	CCCTGGGACTAACACTTTCTGTGATG
84	ACCCCGTCATTCATACCGAGAACC
85	CCAAAAGAAAACTGACCCCTTAGAGG
86	TGCTATTATCTGGTGACTGGACTGGG
87	GAAAGGTTATCCAGAATACAGAAGGG
88	ATAACTGACACATTGTTACAAAA
89	GCTCTCCCTTGTAGCCTGTTAGG
90	TGGCAGCATCGCACCATCCCCAT
91	TGCTATTGGCTAAAATTAGAAAG
92	CAAGGAATGCCCGAGTCAGGTGA
93	ATACCTGCAACCCCGCAACTGTCCT
94	AAGAGTAGGAAACCCCTGGCAGC
95	GAACATCTACTTCAACCTCCTGCCCA
96	CCCCTTGCCTCTTGTTTGAAGCC
97	TGAAGGTGTAATCAGTTTGAGTA
98	TCCTGTCCCGACAATGCGGGTGGCA
99	GTTTTCAGTGGAATAGAGAGATGTGT
100	AACGCCAACCTTGTGCTAAGCACC

表10.b8

101	Hg38_6_31621846_31623705_31710695_31717311_FR	BAG6	76086.53763
102	Hg38_7_156960823_156963130_157154305_157160294_RR	MNX1	67505.74102
103	Hg38_2_47522457_47530546_47563847_47570151_FR	MSH2	82371.47843
104	Hg38_1_203176687_203182913_203318340_203323344_FF	CHI3L1	79022.09419
105	Hg38_1_87788995_87790981_87818262_87826752_RF	LMO4	86647.00466
106	Hg38_2_1263661_1274578_1419778_1424769_RF	PXDN	71442.26485
107	Hg38_16_19856577_19858875_20038454_20045219_FR	GPRC5B	75834.09114
108	Hg38_17_7929728_7931226_8091106_8097573_RR	TRAPPC1	72855.19388
109	Hg38_14_24307628_24311588_24485793_24490540_RR	LTB4R	94399.28713
110	Hg38_14_87841922_87846485_88021020_88026181_FR	GPR65	64229.78661
111	Hg38_1_164748288_164754002_164931877_164940038_FR	PBX1	72147.73599
112	Hg38_1_39655161_39659067_39836323_39843028_FF	PPIE	78015.47867
113	Hg38_1_121080942_121088798_121289281_121293407_RF	FCGR1B	69362.97632
114	Hg38_1_87818262_87826752_87928072_87933012_FF	LMO4	86699.02543
115	Hg38_1_87725315_87731896_87818262_87826752_RF	LMO4	82370.32264
116	Hg38_6_31621846_31623705_31760827_31764995_FR	BAG6	64487.05815

117	Hg38_20_30175888_30181348_30407864_30413511_RR	DEFB115	78526.88029
118	Hg38_6_88188008_88196988_88297132_88306521_FR	CNR1	79295.45848
119	Hg38_5_44708519_44718992_44785151_44789520_RF	FGF10	87836.34591
120	Hg38_19_49705556_49707798_49902219_49904931_RR	AKT1S1	98290.50026
121	Hg38_7_156960823_156963130_156997451_157002320_RR	MNX1	71687.00739
122	Hg38_5_53482717_53490284_53547734_53551656_RR	FST	88679.68983
123	Hg38_12_54361590_54362896_54476649_54480906_FF	GPR84	88026.9097
124	Hg38_1_203176687_203182913_203216286_203223882_FF	CHI3L1	83735.49887
125	Hg38_1_222313331_222325139_222441386_222443155_RF	MIA3	87164.68193
126	Hg38_1_121248861_121256803_121333642_121342053_RF	FCGR1B	75416.59036
127	Hg38_11_62592659_62593709_62832564_62835574_RR	TMEM179B	82225.58952
128	Hg38_12_54361590_54362896_54554738_54558191_FF	GPR84	91177.99339
129	Hg38_1_20049001_20056499_20178914_20185415_RF	PLA2G2D	77018.95665
130	Hg38_6_31446120_31450854_31621846_31623705_RF	AIF1	67251.16575
131	Hg38_15_50130724_50136085_50246566_50252745_FR	ATP8B4	84971.7205
132	Hg38_3_55535014_55543312_55612203_55618906_FF	WNT5A	88723.8519
133	Hg38_10_30369802_30374526_30437454_30440597_RF	MAP3K8	87279.79485
134	Hg38_5_75258048_75262845_75334371_75336800_RF	COL4A3BP	84526.94398
135	Hg38_6_33314273_33315676_33463232_33466480_FF	TAPBP	67876.06938
136	Hg38_20_23532159_23546814_23621720_23626001_FF	CST3	88568.20301
137	Hg38_1_153390496_153396692_153513973_153518338_RR	S100A7	83780.77149
138	Hg38_13_52856863_52871994_52883407_52889776_RR	OLFM4	85453.44397
139	Hg38_17_7665587_7668453_7929728_7931226_FR	EFNB3	74941.58463
140	Hg38_7_50286505_50295259_50544402_50549189_FR	IKZF1	85006.69353
141	Hg38_13_52856863_52871994_52892346_52898772_RR	OLFM4	97547.21362
142	Hg38_1_27610668_27612988_27649538_27652259_RR	FGR	79412.98785
143	Hg38_8_22681793_22682820_22815485_22819827_FR	EGR3	82717.07453
144	Hg38_19_11340579_11345804_11529780_11532285_FF	ECSIT	70032.18988
145	Hg38_19_11340579_11345804_11460171_11462756_FR	RAB3D	74325.76416
146	Hg38_6_26251913_26253832_26447582_26451332_RF	BTN2A2	74530.3491
147	Hg38_1_19972751_19977472_20178914_20185415_RF	PLA2G2A	74314.40789
148	Hg38_6_88146572_88149296_88188008_88196988_RF	CNR1	81860.02161
149	Hg38_22_42372891_42375481_42578934_42580470_RF	NFAM1	73010.50576
150	Hg38_8_64551143_64558219_64578198_64580985_RR	CYP7B1	88305.87208

表10.c1

101	-1.150617051	0.000548965	0.000106987	免疫
102	-1.150577287	0.004266767	0.003924706	免疫
103	-1.149458647	0.001014024	0.000375521	免疫
104	-1.149204947	0.001256975	0.000641747	免疫

105	-1.149093467	0.001183842	0.000569443	免疫
106	-1.149018322	0.001319233	0.00072363	免疫
107	-1.148871477	0.003207085	0.002746997	免疫
108	-1.148855684	0.001256517	0.000635169	免疫
109	-1.14852207	0.000130185	1.09861E-06	免疫
110	-1.147938237	0.002345377	0.00188026	免疫
111	-1.147750151	0.001605895	0.000990951	免疫
112	-1.147573915	0.001303562	0.000685373	免疫
113	-1.147511427	0.001306826	0.000711311	免疫
114	-1.147428692	0.000944817	0.000326899	免疫
115	-1.14732136	0.001303562	0.000694322	免疫
116	-1.14690098	0.002606229	0.002155362	免疫
117	-1.146873351	0.000580521	0.000141801	免疫
118	-1.146790056	0.000749172	0.000229144	免疫
119	-1.146766869	0.001734234	0.001156156	免疫
120	-1.146610946	0.001523301	0.000899584	免疫
121	-1.146187181	0.004081719	0.00373727	免疫
122	-1.146140194	0.00048383	4.6805E-05	免疫
123	-1.146033669	0.000876094	0.000288335	免疫
124	-1.145584041	0.001042044	0.00044712	免疫
125	-1.14558036	0.000508234	5.88759E-05	免疫
126	-1.145394787	0.001087752	0.000504864	免疫
127	-1.14525572	0.001042044	0.000448475	免疫
128	-1.145085484	0.000548965	0.000115815	免疫
129	-1.145048997	0.001256517	0.000633498	免疫
130	-1.144585667	0.002297443	0.00178706	免疫
131	-1.144362485	0.002056946	0.001484126	免疫
132	-1.144178863	0.00063478	0.000166288	免疫
133	-1.144123651	0.001038693	0.000423895	免疫
134	-1.144027903	0.001303562	0.000690728	免疫
135	-1.143809831	0.00223996	0.001653979	免疫
136	-1.143798281	0.000568148	0.000127054	免疫
137	-1.14358087	0.002114975	0.001543843	免疫
138	-1.143441535	0.000548965	8.93217E-05	免疫
139	-1.14340434	0.001660717	0.00107298	免疫
140	-1.143184548	0.00048383	3.18249E-05	免疫
141	-1.142263822	0.000508234	5.98961E-05	免疫

142	-1.142222301	0.002297443	0.00175262	免疫
143	-1.142218474	0.000691883	0.000204278	免疫
144	-1.142194183	0.002718332	0.002259542	免疫
145	-1.141901437	0.001937994	0.001363993	免疫
146	-1.141806893	0.002581943	0.002121453	免疫
147	-1.141779212	0.002100898	0.001524702	免疫
148	-1.141767242	0.001613021	0.0010209	免疫
149	-1.141697254	0.003808064	0.003422437	免疫
150	-1.141664358	0.000691883	0.000196547	免疫

表10.c2

101	GCCATCAGATCTCCCACATGAGGCATTTTCGACTTCACCATCCAGCTGG CCTCCAGCAGC
102	CCCAGCTCCTGCAAAACTCCTCCTGACTTCGAGATTCTGTCTAAAAAAA AAAGATAAAAG
103	CGGAGGGTATAATAACTGCTGTTGTGTATCGACGCGGAGGCCCTTGGGC ATAGTCAAGAC
104	GTCCCAAGTGGCATGAGAGGTAGACTCATCGAAAGGACCTGTCTCTGC CCATAAGAGGGC
105	AGCTGTTCCTTTAATCTTCCCAGCACTATCGATGAACACTTCTTTCCAAA AAAAGTTTAC
106	TTCTAGATGCCGGGATACAGAGATGAGTTCGACATGTACGGCCTGGCTC AGCATTGCCTT
107	AGGAAATGTACTAACTGTTAAGGAAAACTCGAAGCTCTTTAAAAGTATT CCAACCCCATC
108	CTTATCCTCCGAGACCTTTACCTCATCCTCGATGACTCTTGGAGGATGCT GGGAGCCTGA
109	CACTCCATGGTCTCTCCCTCATCCCTAATCGATACAGAAAAATTTCAAG AAAAATTTCAT
110	ATGAGGCTGTGGAAGAGCAAAATGAGTTTCGACATGGTGGTATACCAT GGTGGTGATACT
111	AGTACTCTTTGTTGTCATTTAGTATGTATCGAGGTCAATGTCGCATAGCT AATAAGACCT
112	AAACTAGAGGGATCTACCAGAGGAGGTGTCGATTTGTTGAATGTTCTTC AGGGATAGCCT
113	AGCAAGGAACATAATTATGGCTGTGCTTTCGATGATGCAGTTGCTTTTG AAACTCTTTAA
114	AGCTGTTCCTTTAATCTTCCCAGCACTATCGAGTGCCACTATTTTTAAAC AGATCTTAAA
115	AGCTGTTCCTTTAATCTTCCCAGCACTATCGATCATAAATTAGTAAATTG AAAGATCAAG
116	GCCATCAGATCTCCCACATGAGGCATTTTCGACCTCAACCAGGTCAAAG GGAACAAAGGG

117	ATTCAGGGCGGGGGTCCTCTTGCCAAGATCGATAGACCACTAGCAAGACTAATAAAGAAG
118	TTGTGGTGAGAACGATACAGGAGACAGCTCGAATGTGCAAAGTATAACAAAAAAGATAGGT
119	TTGCCCCAGTGACTGTTTGAGCAGTGCCTCGAATGATTATAACATATAGGTAAGTAAAAT
120	GATCTCACTACGTTGCCCTAGGCTGGTCTCGAACTCCTGACTTCGGGTGATCCCTCCCAT
121	CCCAGCTCCTGCAAAACTCCTCCTGACTTCGACACTGAAAACCTGTGTATGAAGTCACCG
122	GAGACGCGGGAGAAAAGTAGGAAATAAATCGAGCAACAAAGGGCCATAGGGTGACTGTAT
123	CAAAGCAGAGGAACACAGCAAAACACATTCGAAAGAAAGCATAATAGAAGTTAAAACATC
124	GTCCCAAGTGGCATGAGAGGTAGACTCATCGATGTTCGGGGGTAGAAAGTGCTCTGGATG
125	GACAGCTGGCTCTTCATCACAATCATTCTCGATATTTCACTCTTGGGGCTTATAATCTAG
126	TGACCCCAAGCATTCTGGCCTGAACGATTCGAGTATGAACGGAAAATTGACTAGCCCTCA
127	TGCTGCTTCAGGATCCTCAAGGCCAGTCTCGATATCTTCGGCGCCTGAGGGGACGACGAG
128	CAAAGCAGAGGAACACAGCAAAACACATTCGAGAAGCTGGGAACACACTGAAGAAGTGGG
129	GCCAGGATAGGGAAGAAGCAGATTGATATCGAATTCAAAGCTTATTTAAAGGTTATATAT
130	GCCATCAGATCTCCCACATGAGGCATTTTCGATAGTCTACTAAACATGCCATGATTAAAT
131	GCAATTCCATTTGGATCCCCTGATTGAGTCGATGAAATGCCCAAGCTAAGGTAGGAGCTA
132	GGAGACAGGGTTACATCAGCCAGTAACATCGAGAAAGGATAGCTGGGTCTTCCCATGATG
133	TCTGGCTCTATCAAGCTCTATTTAATAGTCGAATTTACAGCTGGCTAACAGAGGCCCAGA
134	CCCGCGCTAGTAACTGAGCTTTCAGTCATCGATGTGAAAATCCTCAGTAAAATACTGTCA
135	TGCCCTGCATGTCCAAGGGAAGGAGCGGTCGAGGTTCGCAAACCTCAGTTTTTGACTTCT
136	GAGAAGGGGAAACACAATGTGTCTGTTATCGATGATTTCACGTTGGTGAAGTTGGTCAGA
137	GAGCTGGAGAAAGCCTTGAACTCTATCATCGACTCTATTGTTTTTCTTATTGTTTTCTTC
138	GTTGGAAGGAATCCAGGGTAAGGGATATTCGAGACCTAGATAGGTCCTCCTTTTACCATG
139	CAGCAAAGTTTTATTGTAAAATAAGAGATCGAGGATGAGGTAAAGGTC

	TCGGAGGATAAG
140	GGAGGGGCAACTGCTAAGTGTATGATTATCGATTCCAACTTTAATGACAAACACTGGTCC
141	GTTGGAAGGAATCCAGGGTAAGGGATATTCGATTGTTATGGAAGGGATTTATACTTGAAT
142	GTGTGGTTTAGTGCAAGTTTTTCACCTCTCGAGGAGCTAAAAGCGAAGGCCGCGGGGAAG
143	GCCAAGAGGGGAAAGGACTCATGTTCTCTCGAGGTCTAGAATCTGAGACCTAAATGAATT
144	CAAAGCAGTCAAGGCCCAAAGACAACCCTCGAGTTTGGTTTGTCTTGAATAAACTGAGGT
145	CAAAGCAGTCAAGGCCCAAAGACAACCCTCGACACCTGTTCTTCACATGCACATCCAACC
146	AAGGGGAGCTCATTTAGTTCATAAGCGGTCGACCATCACCTCCAGGGAGATCCAGACAGC
147	GCCAGGATAGGGAAGAAGCAGATTGATATCGACCAGTATTTCCCAATTGGGGTTCATGGG
148	TTGTGGTGAGAACGATACAGGAGACAGCTCGATTCTAAGCTAAGCAATTTGGTTTTGTTT
149	CACATCCCTGTCTAGTCCTATCTGTTCATCGAAATATTTCATTAACATCCACACACACAC
150	TTAAAAATTCCCAAGATGGAAAAAGAGATCGATCCTTCGCCCTTCAAATGTCCACTTCGG

表10.c3

101	6	31623674	31623703	31710697	31710726	6
102	7	156960825	156960854	157154307	157154336	7
103	2	47530515	47530544	47563849	47563878	2
104	1	203182882	203182911	203323313	203323342	1
105	1	87788997	87789026	87826721	87826750	1
106	2	1263663	1263692	1424738	1424767	2
107	16	19858844	19858873	20038456	20038485	16
108	17	7929730	7929759	8091108	8091137	17
109	14	24307630	24307659	24485795	24485824	14
110	14	87846454	87846483	88021022	88021051	14
111	1	164753971	164754000	164931879	164931908	1
112	1	39659036	39659065	39842997	39843026	1
113	1	121080944	121080973	121293376	121293405	1
114	1	87826721	87826750	87932981	87933010	1
115	1	87725317	87725346	87826721	87826750	1
116	6	31623674	31623703	31760829	31760858	6
117	20	30175890	30175919	30407866	30407895	20
118	6	88196957	88196986	88297134	88297163	6

119	5	44708521	44708550	44789489	44789518	5
120	19	49705558	49705587	49902221	49902250	19
121	7	156960825	156960854	156997453	156997482	7
122	5	53482719	53482748	53547736	53547765	5
123	12	54362865	54362894	54480875	54480904	12
124	1	203182882	203182911	203223851	203223880	1
125	1	222313333	222313362	222443124	222443153	1
126	1	121248863	121248892	121342022	121342051	1
127	11	62592661	62592690	62832566	62832595	11
128	12	54362865	54362894	54558160	54558189	12
129	1	20049003	20049032	20185384	20185413	1
130	6	31446122	31446151	31623674	31623703	6
131	15	50136054	50136083	50246568	50246597	15
132	3	55543281	55543310	55618875	55618904	3
133	10	30369804	30369833	30440566	30440595	10
134	5	75258050	75258079	75336769	75336798	5
135	6	33315645	33315674	33466449	33466478	6
136	20	23546783	23546812	23625970	23625999	20
137	1	153390498	153390527	153513975	153514004	1
138	13	52856865	52856894	52883409	52883438	13
139	17	7668422	7668451	7929730	7929759	17
140	7	50295228	50295257	50544404	50544433	7
141	13	52856865	52856894	52892348	52892377	13
142	1	27610670	27610699	27649540	27649569	1
143	8	22682789	22682818	22815487	22815516	8
144	19	11345773	11345802	11532254	11532283	19
145	19	11345773	11345802	11460173	11460202	19
146	6	26251915	26251944	26451301	26451330	6
147	1	19972753	19972782	20185384	20185413	1
148	6	88146574	88146603	88196957	88196986	6
149	22	42372893	42372922	42580439	42580468	22
150	8	64551145	64551174	64578200	64578229	8

表10.c4

101	31619704	31623703	31710697	31714696	-1	10.27609537	10.47850312
102	156960825	156964824	157154307	157158306	-1	10.03642306	10.23878096
103	47526545	47530544	47563849	47567848	N/A		
104	203178912	203182911	203319343	203323342	N/A		
105	87788997	87792996	87822751	87826750	N/A		
106	1263663	1267662	1420768	1424767	N/A		

107	19854874	19858873	20038456	20042455	N/A		
108	7929730	7933729	8091108	8095107	N/A		
109	24307630	24311629	24485795	24489794	N/A		
110	87842484	87846483	88021022	88025021	N/A		
111	164750001	164754000	164931879	164935878	N/A		
112	39655066	39659065	39839027	39843026	N/A		
113	121080944	121084943	121289406	121293405	N/A		
114	87822751	87826750	87929011	87933010	N/A		
115	87725317	87729316	87822751	87826750	N/A		
116	31619704	31623703	31760829	31764828	N/A		
117	30175890	30179889	30407866	30411865	N/A		
118	88192987	88196986	88297134	88301133	N/A		
119	44708521	44712520	44785519	44789518	N/A		
120	49705558	49709557	49902221	49906220	N/A		
121	156960825	156964824	156997453	157001452	N/A		
122	53482719	53486718	53547736	53551735	N/A		
123	54358895	54362894	54476905	54480904	N/A		
124	203178912	203182911	203219881	203223880	N/A		
125	222313333	222317332	222439154	222443153	N/A		
126	121248863	121252862	121338052	121342051	N/A		
127	62592661	62596660	62832566	62836565	N/A		
128	54358895	54362894	54554190	54558189	N/A		
129	20049003	20053002	20181414	20185413	N/A		
130	31446122	31450121	31619704	31623703	N/A		
131	50132084	50136083	50246568	50250567	N/A		
132	55539311	55543310	55614905	55618904	N/A		
133	30369804	30373803	30436596	30440595	N/A		
134	75258050	75262049	75332799	75336798	N/A		
135	33311675	33315674	33462479	33466478	N/A		
136	23542813	23546812	23622000	23625999	N/A		
137	153390498	153394497	153513975	153517974	N/A		
138	52856865	52860864	52883409	52887408	N/A		
139	7664452	7668451	7929730	7933729	N/A		
140	50291258	50295257	50544404	50548403	N/A		
141	52856865	52860864	52892348	52896347	N/A		
142	27610670	27614669	27649540	27653539	N/A		
143	22678819	22682818	22815487	22819486	N/A		
144	11341803	11345802	11528284	11532283	N/A		
145	11341803	11345802	11460173	11464172	N/A		
146	26251915	26255914	26447331	26451330	N/A		

147	19972753	19976752	20181414	20185413	N/A		
148	88146574	88150573	88192987	88196986	N/A		
149	42372893	42376892	42576469	42580468	N/A		
150	64551145	64555144	64578200	64582199	N/A		

表10.c5

101	1239.975041	1426.736425	Hg38_6_31621846_31623705_31710695_31717311_FR
102	1050.181566	1208.315057	Hg38_7_156960823_156963130_157154305_157160294_RR
103			Hg38_2_47522457_47530546_47563847_47570151_FR
104			Hg38_1_203176687_203182913_203318340_203323344_FF
105			Hg38_1_87788995_87790981_87818262_87826752_RF
106			Hg38_2_1263661_1274578_1419778_1424769_RF
107			Hg38_16_19856577_19858875_20038454_20045219_FR
108			Hg38_17_7929728_7931226_8091106_8097573_RR
109			Hg38_14_24307628_24311588_24485793_24490540_RR
110			Hg38_14_87841922_87846485_88021020_88026181_FR
111			Hg38_1_164748288_164754002_164931877_164940038_FR
112			Hg38_1_39655161_39659067_39836323_39843028_FF
113			Hg38_1_121080942_121088798_121289281_121293407_RF
114			Hg38_1_87818262_87826752_87928072_87933012_FF
115			Hg38_1_87725315_87731896_87818262_87826752_RF
116			Hg38_6_31621846_31623705_31760827_31764995_FR
117			Hg38_20_30175888_30181348_30407864_30413511_RR
118			Hg38_6_88188008_88196988_88297132_88306521_FR
119			Hg38_5_44708519_44718992_44785151_44789520_RF
120			Hg38_19_49705556_49707798_49902219_49904931_RR
121			Hg38_7_156960823_156963130_156997451_157002320_RR
122			Hg38_5_53482717_53490284_53547734_53551656_RR
123			Hg38_12_54361590_54362896_54476649_54480906_FF
124			Hg38_1_203176687_203182913_203216286_203223882_FF
125			Hg38_1_222313331_222325139_222441386_222443155_RF
126			Hg38_1_121248861_121256803_121333642_121342053_RF
127			Hg38_11_62592659_62593709_62832564_62835574_RR
128			Hg38_12_54361590_54362896_54554738_54558191_FF
129			Hg38_1_20049001_20056499_20178914_20185415_RF
130			Hg38_6_31446120_31450854_31621846_31623705_RF
131			Hg38_15_50130724_50136085_50246566_50252745_FR
132			Hg38_3_55535014_55543312_55612203_55618906_FF
133			Hg38_10_30369802_30374526_30437454_30440597_RF
134			Hg38_5_75258048_75262845_75334371_75336800_RF

135			Hg38_6_33314273_33315676_33463232_33466480_FF
136			Hg38_20_23532159_23546814_23621720_23626001_FF
137			Hg38_1_153390496_153396692_153513973_153518338_RR
138			Hg38_13_52856863_52871994_52883407_52889776_RR
139			Hg38_17_7665587_7668453_7929728_7931226_FR
140			Hg38_7_50286505_50295259_50544402_50549189_FR
141			Hg38_13_52856863_52871994_52892346_52898772_RR
142			Hg38_1_27610668_27612988_27649538_27652259_RR
143			Hg38_8_22681793_22682820_22815485_22819827_FR
144			Hg38_19_11340579_11345804_11529780_11532285_FF
145			Hg38_19_11340579_11345804_11460171_11462756_FR
146			Hg38_6_26251913_26253832_26447582_26451332_RF
147			Hg38_1_19972751_19977472_20178914_20185415_RF
148			Hg38_6_88146572_88149296_88188008_88196988_RF
149			Hg38_22_42372891_42375481_42578934_42580470_RF
150			Hg38_8_64551143_64558219_64578198_64580985_RR

表10.c6

101	OBD183-2361	ATAAATGTGTCCCAGGATAGGAGGC	OBD183-2363
102	OBD183-2365	TCCCAACATTTGCCACCACCTACTCC	OBD183-2367
103	OBD183-2369	AGTCGTCCGGAGACGTGGTTCCT	OBD183-2371
104	OBD183-2373	GATGGGAGACAGGCAGGTGAGAG	OBD183-2375
105	OBD183-2377	GCTGTCTTCCCCGTCACACATCC	OBD183-2379
106	OBD183-2381	GAAGACCAGGAGAGGCATCAACTG	OBD183-2383
107	OBD183-2385	CGCAATGACTGGAACGGGATTCTCTA	OBD183-2387
108	OBD183-2389	TGAAGTGGCATCTCTCTCCCGCC	OBD183-2391
109	OBD183-2393	TCTCCTGCTCCCCACTCCACAGT	OBD183-2395
110	OBD183-2397	TCAGCAGGGCAGGAACACAGTGG	OBD183-2399
111	OBD183-2401	TGGCAGGAGTAGCCGTGAAAGGC	OBD183-2403
112	OBD183-2405	GGGCAGACAGGCAGAAGGACAGA	OBD183-2407
113	OBD183-2409	AGGCGACAGGGTTCGGGCTTTATTCT	OBD183-2411
114	OBD183-2413	CCCGTCACACATCCAAACAAGAGCAT	OBD183-2415
115	OBD183-2417	CCCCGTCACACATCCAAACAAGAGCA	OBD183-2419
116	OBD183-2421	ATAAATGTGTCCCAGGATAGGAGGC	OBD183-2423
117	OBD183-2425	TCACCCCGCTCGTGTAGAACAGCG	OBD183-2427
118	OBD183-2429	TAGAGAACAAGAGGTGCTGGAGTGTG	OBD183-2431
119	OBD183-2433	CCTTTACCCTAATATTTTGTGCC	OBD183-2435
120	OBD183-2437	CGTCACAGCTCTATTCGACGGTG	OBD183-2439
121	OBD183-2441	ATGTCCACACCCACTGCCACGAT	OBD183-2443
122	OBD183-2445	TTCTTCGCTTGACGGAGCCAGCAGTT	OBD183-2447

123	OBD183-2449	CCAGGTGAGGTTGGCAGCAAGCAT	OBD183-2451
124	OBD183-2453	GATGGGAGACAGGCAGGTGAGAG	OBD183-2455
125	OBD183-2457	TCCATCTAAACATCACCGTGCTCCAG	OBD183-2459
126	OBD183-2461	GGTGGAAGCAGCAAGGGAAGACC	OBD183-2463
127	OBD183-2465	CACCTCTTACTCCCCTCTCCCTT	OBD183-2467
128	OBD183-2469	CCAGGTGAGGTTGGCAGCAAGCA	OBD183-2471
129	OBD183-2473	GAACGCGGTAGCTTTCTTCAGCTAA	OBD183-2475
130	OBD183-2477	AAGAGTCCTTGCCACCTGGAAGCG	OBD183-2479
131	OBD183-2481	GCGTGGATACTTTCCTCTTCCGAACT	OBD183-2483
132	OBD183-2485	GGAGGAGTAAGGCTGAAATAACAGGG	OBD183-2487
133	OBD183-2489	GTGCTGAATGAGTGCGGAGTCCAGAA	OBD183-2491
134	OBD183-2493	TATTGTCCATTAGGCCCCACAAGGG	OBD183-2495
135	OBD183-2497	GGGTTCTGTATGATTACCGTCGT	OBD183-2499
136	OBD183-2501	CTGAAACGCAGACTGGTGGGTGC	OBD183-2503
137	OBD183-2505	GAGCCATAGCCATCTGCTGGTTTGGT	OBD183-2507
138	OBD183-2509	GACCAAAGCACCTCTGAAGGACAAAG	OBD183-2511
139	OBD183-2513	GTTCACCCCTCAGACACACAGGT	OBD183-2515
140	OBD183-2517	GGTCCAGAGCATTTTGGTGGTGC	OBD183-2519
141	OBD183-2521	ACCAAAGCACCTCTGAAGGACAAAGA	OBD183-2523
142	OBD183-2525	GCCTGGTGTGAATCCTGCCTCCA	OBD183-2527
143	OBD183-2529	ATTCCCCACCAGTATGAGGCGAAT	OBD183-2531
144	OBD183-2533	GTGGCTCAGAACTTTACCTTTGCCTC	OBD183-2535
145	OBD183-2537	GTGGCTCAGAACTTTACCTTTGCCTC	OBD183-2539
146	OBD183-2541	GCTTCAGATGAGGCTCCACCTTGTTA	OBD183-2543
147	OBD183-2545	AGTAGGACTCGGGCAGGGAGGAT	OBD183-2547
148	OBD183-2549	AGAGGTGCTGGAGTGTGGCTGTGATT	OBD183-2551
149	OBD183-2553	GCCAGCGAGACACTCACACAACT	OBD183-2555
150	OBD183-2557	GCACTAAGTCCTGCTAACATCAG	OBD183-2559

表10.c7

101	AATGCTCCTCCTTTCCTTCAGTCCCC
102	GAGAAAATAATGGTGGGAAGTTAGGG
103	TAAAGCCTCGTTATTGATCCGGTT
104	TTCTCCTGTGACAACTCCCTGGG
105	CCAAGGCAAAGCACGAAGGATGC
106	GCCTTTCTTTGCCCAGTATTAGC
107	CACTTGGAGTTGATGACTTGCCTGAC
108	TCCACTGCCCTGCTTCTCACCAA
109	CCAGCACAGAGTGTCCGTTTCCA
110	CACAGCAGAGGACCTATTCCCAG

111	GGCTGGGACTGTGAAACCTGGAA
112	GACAGATGGCACTACAGAAGGGC
113	CTCTGATAACATCTTCCCTCTACACG
114	GAACCTATGAAGGACCACTAAGGAGC
115	CATTTACTTTTACCTCTCCTTCCAGC
116	TTATCCCCTTCCTCAATCCCACCTCC
117	AAAACGAACACCGAGAATGCAGAA
118	TCACATCCTCCTTGAACTATTCTGTA
119	GAATCATAAGCAAAAGCACTGGTG
120	GGTGGCGATCCCTAAGAAGGTGTG
121	TGGGAGGGCTGAGAGGTGAGGAA
122	CTATCCTGGTCAAACTGGGACATACA
123	GGGAATAGTTTAGGCTTTGGGAAATC
124	AGTGCGTCTCTGTGTCTGGGCTA
125	GGGAACCATCTTTCTCTTCTGTCAT
126	CCCAGTCAGGGAATGAGAGGGTA
127	CGGCAGGGAAGATGAGACCACAG
128	GCACAGGAGGAGTCTGAAAGCAG
129	GGCATTCGAATAATGGTATTAAG
130	ACCAGGTATGGCCATCGGCGCTA
131	GGGAATGGTTGGTGGAGGTTACAAGT
132	TCCCACCACCATCATTACTGTCCTGA
133	GGTAACTGGCGAAGCACTCAATAAAC
134	GTTAAGTACCCAGATATTCGCTGG
135	CTCGGGGTCTATGGATGCCCGGTAG
136	CCCAGGAATGAGGACCACAGTCT
137	GTGGTATCCTAAAACCTGACCTCAAC
138	GACCAAGAATAGTCCAACTCCAACAG
139	TGAAGTGGCATCTCTCTCCCGCC
140	AAGGGCAGAGGCAGGACTTGGAC
141	CAAAAGTGTCCCTTCCCTGCTCCCTA
142	TCACCATCTCCTCAGGCACAAGG
143	GTTGTCTGGTATATTAACGTGCC
144	CATCACCTCTCTGGTATTCTTCCTGG
145	GAGCCTACAGGATTTAGAGTGGGTTG
146	CCATAGAATACAGCAGCACCCAGCAT
147	TTCACAGACCAGCATCGCCCCAT
148	CCCCAACCCCATACAGTGTGATA
149	GGGTGCCTCCAAATCGCATCTCC
150	ATGTCTGACTTAGTTCTCCAGCCAGC

表10.c8

151	Hg38_22_42405467_42408113_42578934_42580470_RF	NFAM1	80338.79435
152	Hg38_11_114241978_114246699_114439739_114443191_FR	ZBTB16	85996.62695
153	Hg38_5_76793348_76797693_76897248_76903956_RF	F2RL1	85235.48486
154	Hg38_1_27649538_27652259_27838007_27841075_RF	IFI6	83318.9954
155	Hg38_16_22513299_22515891_22559024_22570518_FF	POLR3E	83027.21437
156	Hg38_5_53482717_53490284_53554764_53563025_RR	FST	92529.50484
157	Hg38_17_7889503_7895357_7929728_7931226_FR	TRAPPC1	84835.85238
158	Hg38_2_47522457_47530546_47595212_47601970_FR	MSH2	78163.52614
159	Hg38_1_36461525_36463186_36575866_36579237_RF	CSF3R	77121.89746
160	Hg38_16_86372874_86378933_86513165_86515439_RR	FOXF1	79942.3235
161	Hg38_8_53298881_53306504_53518003_53523754_RF	OPRK1	94581.09623
162	Hg38_6_31588788_31590397_31621846_31623705_RF	AIF1	68435.03959
163	Hg38_2_219136508_219146735_219271447_219273060_FR	NHEJ1	86467.33636
164	Hg38_14_96122093_96130378_96263508_96266492_RF	BDKRB1	86504.3109
165	Hg38_10_73661598_73666900_73777774_73781187_RR	SEC24C	89527.307
166	Hg38_6_31621846_31623705_31693387_31703142_FR	BAG6	78489.59358
167	Hg38_2_47522457_47530546_47666116_47672220_FR	MSH2	83025.74574
168	Hg38_1_191729725_191732129_191869196_191881753_FR	RGS1	87903.89085
169	Hg38_7_104953069_104957259_105015558_105026847_RR	KMT2E	123658.9696
170	Hg38_12_54173791_54182056_54361590_54362896_RF	GPR84	96202.26462
171	Hg38_6_27860135_27864160_28014483_28022084_FR	HIST1H3I	82308.28752
172	Hg38_5_75236091_75239565_75334371_75336800_FF	COL4A3BP	92507.98272
173	Hg38_6_31817301_31818773_31878016_31881028_RF	HSPA1A	78213.14494
174	Hg38_17_7811362_7813705_7929728_7931226_RF	KDM6B	92203.46121
175	Hg38_14_24307628_24311588_24511833_24515792_RR	LTB4R	108316.2481
176	Hg38_1_121333642_121342053_121413898_121422150_FR	FCGR1B	75415.05882
177	Hg38_20_1589686_1605075_1636521_1641313_FR	SIRPB1	78259.09721
178	Hg38_5_100903133_100904261_100940255_100954422_FF	SLCO4C1	88801.69101
179	Hg38_4_145148297_145150633_145295262_145303638_FR	ABCE1	71043.23202
180	Hg38_17_7861815_7869138_7929728_7931226_FR	TRAPPC1	82177.5641
181	Hg38_16_85802241_85804577_85933137_85934694_RR	IRF8	90446.47069
182	Hg38_1_121052779_121056014_121248861_121256803_RR	FCGR1B	76230.75824
183	Hg38_6_106106013_106107198_106244728_106262141_RR	ATG5	77094.90975
184	Hg38_17_7861815_7869138_7929728_7931226_RR	TRAPPC1	82404.478
185	Hg38_1_121289281_121293407_121403378_121413898_FF	FCGR1B	78301.51501
186	Hg38_12_49954074_49960858_50101385_50107364_FF	RACGAP1	103477.8303
187	Hg38_6_32178822_32181952_32282603_32287434_RR	AGER	92115.75296
188	Hg38_11_6164440_6172634_6399479_6402059_RF	APBB1	89050.5491

189	Hg38_20_177034_181274_305424_309823_FR	DEFB128	76150.09639
190	Hg38_17_7929728_7931226_7944762_7946565_FF	TRAPPC1	90240.21925
191	Hg38_3_55535014_55543312_55612203_55618906_FR	WNT5A	97085.63511
192	Hg38_2_8571790_8576812_8640383_8646383_FF	ID2	96139.64242
193	Hg38_6_32934293_32937112_33060957_33074774_FF	HLA-DMA	88786.60149
194	Hg38_3_187569317_187579639_187726556_187727893_FR	BCL6	101438.3337
195	Hg38_1_39655161_39659067_39769500_39772730_FR	PPIE	84545.84627
196	Hg38_12_55953308_55956138_56112355_56115503_RR	PA2G4	99642.94851
197	Hg38_8_53448228_53464529_53518003_53523754_FF	OPRK1	88339.66075
198	Hg38_X_72208498_72213408_72340340_72345964_FF	CITED1	103970.4648
199	Hg38_5_60437025_60452736_60528868_60530657_RF	PDE4D	94525.29468
200	Hg38_6_27860135_27864160_27892394_27893632_FR	HIST1H3I	77795.67217

表10.d1

151	-1.141650335	0.001608284	0.001011115	免疫
152	-1.141519846	0.000580521	0.000144718	免疫
153	-1.141503061	0.000691883	0.000192651	免疫
154	-1.141362141	0.001257335	0.000652541	免疫
155	-1.141312609	0.001087752	0.000500407	免疫
156	-1.141306493	0.000508234	6.00445E-05	免疫
157	-1.141090521	0.000780545	0.000247008	免疫
158	-1.141005717	0.004288867	0.00396313	免疫
159	-1.14081435	0.001638666	0.001044045	免疫
160	-1.140775221	0.004735379	0.004495613	免疫
161	-1.140725713	0.000691883	0.000197463	免疫
162	-1.140707987	0.003576526	0.003111556	免疫
163	-1.140700468	0.001038693	0.00039895	免疫
164	-1.140699319	0.001038693	0.000412663	免疫
165	-1.140696831	0.000568148	0.0001253	免疫
166	-1.140678683	0.001087752	0.000499089	免疫
167	-1.140529444	0.003808064	0.003417198	免疫
168	-1.140487352	0.001087752	0.000496518	免疫
169	-1.14035827	0.001038693	0.000438267	免疫
170	-1.140295487	0.000580521	0.000143875	免疫
171	-1.14019275	0.001375885	0.000777927	免疫
172	-1.140190056	0.000749172	0.000233919	免疫
173	-1.140090269	0.003207085	0.002739994	免疫
174	-1.140013979	0.000558904	0.000120271	免疫

175	-1.139869101	6.55E-05	2.76371E-07	免疫
176	-1.139864017	0.001803063	0.001224865	免疫
177	-1.139617942	0.002297443	0.00177739	免疫
178	-1.139591682	0.001038693	0.000392403	免疫
179	-1.139263741	0.003054479	0.002573073	免疫
180	-1.139248288	0.001257335	0.000647292	免疫
181	-1.139203035	0.000580521	0.000136699	免疫
182	-1.139134604	0.002035483	0.001442874	免疫
183	-1.138925048	0.005042802	0.004913944	免疫
184	-1.138898567	0.001711945	0.00112685	免疫
185	-1.138557886	0.001716439	0.00113705	免疫
186	-1.138453619	0.001256517	0.000636211	免疫
187	-1.138262072	0.000539173	7.73497E-05	免疫
188	-1.138220841	0.001038693	0.000435859	免疫
189	-1.13809959	0.001496732	0.000858884	免疫
190	-1.137929608	0.000548965	0.00011276	免疫
191	-1.137921067	0.000855596	0.000277978	免疫
192	-1.137875489	0.00048383	3.93433E-05	免疫
193	-1.137744871	0.000548965	8.79018E-05	免疫
194	-1.137699742	0.00043607	1.28797E-05	免疫
195	-1.137631552	0.001937994	0.001365591	免疫
196	-1.137625783	0.001905941	0.001313269	免疫
197	-1.137573687	0.001183842	0.000558133	免疫
198	-1.137537352	0.000520629	6.4014E-05	免疫
199	-1.137338682	0.001087752	0.000485637	免疫
200	-1.1371575	0.002321293	0.001841364	免疫

表10.d2

151	CACATCCCTGTCTAGTCCTATCTGTTCATCGAGAGATACCCTACTTGCTATCATCATGGG
152	AGGAGTTCACCAGGGAGAAAAGAAGAAATCGAGCCCGTCCTGGGAGAGCGTTGGGGGTCT
153	TGTTAGTAGAGACCATGTTAGGCTGGTCTCGAACTCCCAGCCTCAGGTAATCTGCTCTCC
154	GAACCTCACAAGCCTCAGCAAATTCCCATCGAGGAGCTAAAAGCGAAGGCCGCGGGGAAG
155	CGTCTCAATGGCTCCCAACTCTTTTGCCTCGAGCCTGGTTTGTGTGTTTTATCCAGAAGT
156	GAGACGCGGGAGAAAAGTAGGAAATAAATCGAGGAGAGAAAACAAGG

	TGTGAAAGATCCA
157	CCATCCCAAAGTGCCCCGTGCTGAAGGGTCGAGGATGAGGTAAAGGTC TCGGAGGATAAG
158	CGGAGGGTATAATAACTGCTGTTGTGTATCGAGGCACAGGTAATTTGCC CAAGGTTACAC
159	ACAGGAGGCTCCTCTAACACATCTCCTCTCGACTGTTCCGGTCTCATCA CAGGGAGGGCA
160	GCGTGAGTGAAGACCTTGCTGTATAACCTCGAGGTATAACCGTCGGCA GAAGAAAAGGGT
161	GCATCTCCGTGAGAGGCATTTGCATAGCTCGAGTTCTCATTTAGCTTTC ACTTATAAATG
162	GCCATCAGATCTCCCACATGAGGCATTTTCGAGCCTCCGTTCAAATTGA TCATCATCAAA
163	AATTTTCTTCAAATGGTTCTGTCTTCAATCGAGCGCCCAACCTACACCA ACCTCAATCGC
164	GTGTTGTGTGAATTTACTCTGATAATGCTCGACTTGAAAACAAGCACTG CCTCACTGCAA
165	GAGTTTCACCAAGTTATCTAGGCTGGTCTCGAACTCCTGAGCTCAGGTG ATTCACTTGCC
166	GCCATCAGATCTCCCACATGAGGCATTTTCGACTGGCCAGCTCCGGAAG TCAAAGTTGTA
167	CGGAGGGTATAATAACTGCTGTTGTGTATCGATTAACTTCTGCTCCAGC TCAGAGACAGC
168	GCCCCCTGCTCAACGGCGCGCAGTCCCATCGACCACATGTTTACATTTT GAAGACATTTG
169	GGTTGGAGGATCACCTGAGCCCGAGAGGTCGAGGCTGGAGACATGAAT ACCTATTTGGAA
170	CAAAGCAGAGGAACACAGCAAAACACATTCGAGTCTGGGCTCCTTCTT CTGTTCCCCCGC
171	GCCGTCTGGATCTCCCTGGAGGTGATGGTCGATTCATATGAATGCTGTG GTATTATAGGT
172	GTTGAAACACCATTGAAATAAATGTTATTCGATGACTGAAAGCTCAGTT ACTAGCGCGGG
173	GGGTCTCCTGCTCACCTTGTTGTCTAAGTCGAGCGCATGGTGCAGGAGG CGGAGAAGTAC
174	AAAGAGACACTTCTGATCCCCGCAAACATCGACATCAACTAATCTTGCC TTTGTGAGTTA
175	CACTCCATGGTCTCTCCCTCATCCCTAATCGAGTTGGCAGGTATAAAAC ACCTAGAAACT
176	TGACCCCAAGCATTCTGGCCTGAACGATTCGAGGTAACTCCTATCTAAT GGGTTTTTCTT
177	GGCAGAGGGTTTGGCTACAAAAGGACCATCGATAAACAGGAGACATGA CTGAGATGACAA
178	GCAGGGACACTTTTCAAGAGTTCTGTGTTCGATCATAACTCACTGTGGC CTTGATCTTCC

179	GTTGTCTTACTCCTGAAGGATGCTGCAGTCGAATGTGATAACTATGAAG GGAGAGATTTT
180	TGATGGTTTAGAATGCAGCTACCAATTATCGAGGATGAGGTAAAGGTCT CGGAGGATAAG
181	GAGAGGCCGTTCTAAAAGCACATTTGTATCGAGTGGCTGCTGCCTGCAG CTAAGTATTTT
182	TCCTAGATAAATAGCTTAAATTTTAGGATCGAGTATGAACGGAAAATTG ACTAGCCCTCA
183	CCGGGGGCTCATACTACTGCAAATGCAATCGATCATCAGTTGTATCCCT TGTGCATAGCA
184	GGAAGCCACTGAAGAAGCTAAGGAAAGTTCGAGGATGAGGTAAAGGT CTCGGAGGATAAG
185	AGCAAGGAACATAATTATGGCTGTGCTTTCGATTTCCCACAAATAAATC CAGTAATCTTG
186	TGCAAAGACTGACTGACAGAAACAGATTTCGAGGACATTTTCTGAAAA CCACTCTTCTCT
187	GTTCCTAAGACCTTTCTTTCCACAGATCTCGATTAAATTTGATACCCCTT CATGCTAAAA
188	GACTCTGATGCTGGATGAACTCCCACCCTCGATGTGATACGTTATATCA ACAGAATGAAG
189	AGGTTTTTGTATCTCTGTTCTAGGGACATCGACCAACAGAACTATGCAG AGTTTGGCTGG
190	AAAGAGACACTTCTGATCCCCGCAAACATCGACCTAGGTTGTCATGTTT GTACCACACAG
191	GGAGACAGGGTTACATCAGCCAGTAACATCGAGTCTACACACTGGCTT GTGAACATGTTG
192	GATGATTCCGTGCAGTCATTTAAACAGTTCGATTCTGGAAGACAAAACA AAGGATCAACC
193	CACTTCGCTGTCTACCATGTACCATGTATCGATGTCTCAGGTAATTTATT TTTACAGTAG
194	AATTTTTTTTATTCTTAGAAGATGAATGTCGAGTCACTAAGCAAAGACA AGACAGGGTTA
195	AAACTAGAGGGATCTACCAGAGGAGGTGTCGAGAAACACAGTGAGGA ACTGATCTGTTTT
196	CAAGGAACATTGGTGATTTCCTTACCAATCGAAATATCCATATTGCTTT CACGCCATTGT
197	AATTTTCTCCCAGAGGATGGGGAACCAATCGAGCTATGCAAATGCCTCT CACGGAGATGC
198	AAAATGATCGGGATATAAATCCAGGCATTCGAGCTTGTAATCCAGCACT TTGGGAGACTG
199	ACTCCCTGCTACATGGCGCCCAGTCCCATCGACCACTCTAGATGTGTGA CCTCAACACAA
200	GCCGTCTGGATCTCCCTGGAGGTGATGGTCGAACTCCAGGTCCCTAGAG ATTTCTCCCCT

表10.d3

151	22	42405469	42405498	42580439	42580468	22
152	11	114246668	114246697	114439741	114439770	11
153	5	76793350	76793379	76903925	76903954	5
154	1	27649540	27649569	27841044	27841073	1
155	16	22515860	22515889	22570487	22570516	16
156	5	53482719	53482748	53554766	53554795	5
157	17	7895326	7895355	7929730	7929759	17
158	2	47530515	47530544	47595214	47595243	2
159	1	36461527	36461556	36579206	36579235	1
160	16	86372876	86372905	86513167	86513196	16
161	8	53298883	53298912	53523723	53523752	8
162	6	31588790	31588819	31623674	31623703	6
163	2	219146704	219146733	219271449	219271478	2
164	14	96122095	96122124	96266461	96266490	14
165	10	73661600	73661629	73777776	73777805	10
166	6	31623674	31623703	31693389	31693418	6
167	2	47530515	47530544	47666118	47666147	2
168	1	191732098	191732127	191869198	191869227	1
169	7	104953071	104953100	105015560	105015589	7
170	12	54173793	54173822	54362865	54362894	12
171	6	27864129	27864158	28014485	28014514	6
172	5	75239534	75239563	75336769	75336798	5
173	6	31817303	31817332	31880997	31881026	6
174	17	7811364	7811393	7931195	7931224	17
175	14	24307630	24307659	24511835	24511864	14
176	1	121342022	121342051	121413900	121413929	1
177	20	1605044	1605073	1636523	1636552	20
178	5	100904230	100904259	100954391	100954420	5
179	4	145150602	145150631	145295264	145295293	4
180	17	7869107	7869136	7929730	7929759	17
181	16	85802243	85802272	85933139	85933168	16
182	1	121052781	121052810	121248863	121248892	1
183	6	106106015	106106044	106244730	106244759	6
184	17	7861817	7861846	7929730	7929759	17
185	1	121293376	121293405	121413867	121413896	1
186	12	49960827	49960856	50107333	50107362	12
187	6	32178824	32178853	32282605	32282634	6
188	11	6164442	6164471	6402028	6402057	11
189	20	181243	181272	305426	305455	20

190	17	7931195	7931224	7946534	7946563	17
191	3	55543281	55543310	55612205	55612234	3
192	2	8576781	8576810	8646352	8646381	2
193	6	32937081	32937110	33074743	33074772	6
194	3	187579608	187579637	187726558	187726587	3
195	1	39659036	39659065	39769502	39769531	1
196	12	55953310	55953339	56112357	56112386	12
197	8	53464498	53464527	53523723	53523752	8
198	X	72213377	72213406	72345933	72345962	X
199	5	60437027	60437056	60530626	60530655	5
200	6	27864129	27864158	27892396	27892425	6

表10.d4

151	42405469	42409468	42576469	42580468	N/A		
152	114242698	114246697	114439741	114443740	N/A		
153	76793350	76797349	76899955	76903954	N/A		
154	27649540	27653539	27837074	27841073	N/A		
155	22511890	22515889	22566517	22570516	N/A		
156	53482719	53486718	53554766	53558765	N/A		
157	7891356	7895355	7929730	7933729	N/A		
158	47526545	47530544	47595214	47599213	N/A		
159	36461527	36465526	36575236	36579235	N/A		
160	86372876	86376875	86513167	86517166	N/A		
161	53298883	53302882	53519753	53523752	N/A		
162	31588790	31592789	31619704	31623703	N/A		
163	219142734	219146733	219271449	219275448	N/A		
164	96122095	96126094	96262491	96266490	N/A		
165	73661600	73665599	73777776	73781775	N/A		
166	31619704	31623703	31693389	31697388	N/A		
167	47526545	47530544	47666118	47670117	N/A		
168	191728128	191732127	191869198	191873197	N/A		
169	104953071	104957070	105015560	105019559	N/A		
170	54173793	54177792	54358895	54362894	N/A		
171	27860159	27864158	28014485	28018484	N/A		
172	75235564	75239563	75332799	75336798	N/A		
173	31817303	31821302	31877027	31881026	N/A		
174	7811364	7815363	7927225	7931224	N/A		
175	24307630	24311629	24511835	24515834	N/A		
176	121338052	121342051	121413900	121417899	N/A		
177	1601074	1605073	1636523	1640522	N/A		

178	100900260	100904259	100950421	100954420	N/A		
179	145146632	145150631	145295264	145299263	N/A		
180	7865137	7869136	7929730	7933729	N/A		
181	85802243	85806242	85933139	85937138	N/A		
182	121052781	121056780	121248863	121252862	N/A		
183	106106015	106110014	106244730	106248729	N/A		
184	7861817	7865816	7929730	7933729	N/A		
185	121289406	121293405	121409897	121413896	N/A		
186	49956857	49960856	50103363	50107362	N/A		
187	32178824	32182823	32282605	32286604	N/A		
188	6164442	6168441	6398058	6402057	N/A		
189	177273	181272	305426	309425	N/A		
190	7927225	7931224	7942564	7946563	N/A		
191	55539311	55543310	55612205	55616204	N/A		
192	8572811	8576810	8642382	8646381	N/A		
193	32933111	32937110	33070773	33074772	N/A		
194	187575638	187579637	187726558	187730557	N/A		
195	39655066	39659065	39769502	39773501	N/A		
196	55953310	55957309	56112357	56116356	N/A		
197	53460528	53464527	53519753	53523752	N/A		
198	72209407	72213406	72341963	72345962	N/A		
199	60437027	60441026	60526656	60530655	N/A		
200	27860159	27864158	27892396	27896395	N/A		

表10.d5

151			Hg38_22_42405467_42408113_42578934_42580470_RF
152			Hg38_11_114241978_114246699_114439739_114443191_FR
153			Hg38_5_76793348_76797693_76897248_76903956_RF
154			Hg38_1_27649538_27652259_27838007_27841075_RF
155			Hg38_16_22513299_22515891_22559024_22570518_FF
156			Hg38_5_53482717_53490284_53554764_53563025_RR
157			Hg38_17_7889503_7895357_7929728_7931226_FR
158			Hg38_2_47522457_47530546_47595212_47601970_FR
159			Hg38_1_36461525_36463186_36575866_36579237_RF
160			Hg38_16_86372874_86378933_86513165_86515439_RR
161			Hg38_8_53298881_53306504_53518003_53523754_RF
162			Hg38_6_31588788_31590397_31621846_31623705_RF
163			Hg38_2_219136508_219146735_219271447_219273060_FR
164			Hg38_14_96122093_96130378_96263508_96266492_RF
165			Hg38_10_73661598_73666900_73777774_73781187_RR

166			Hg38_6_31621846_31623705_31693387_31703142_FR
167			Hg38_2_47522457_47530546_47666116_47672220_FR
168			Hg38_1_191729725_191732129_191869196_191881753_FR
169			Hg38_7_104953069_104957259_105015558_105026847_RR
170			Hg38_12_54173791_54182056_54361590_54362896_RF
171			Hg38_6_27860135_27864160_28014483_28022084_FR
172			Hg38_5_75236091_75239565_75334371_75336800_FF
173			Hg38_6_31817301_31818773_31878016_31881028_RF
174			Hg38_17_7811362_7813705_7929728_7931226_RF
175			Hg38_14_24307628_24311588_24511833_24515792_RR
176			Hg38_1_121333642_121342053_121413898_121422150_FR
177			Hg38_20_1589686_1605075_1636521_1641313_FR
178			Hg38_5_100903133_100904261_100940255_100954422_FF
179			Hg38_4_145148297_145150633_145295262_145303638_FR
180			Hg38_17_7861815_7869138_7929728_7931226_FR
181			Hg38_16_85802241_85804577_85933137_85934694_RR
182			Hg38_1_121052779_121056014_121248861_121256803_RR
183			Hg38_6_106106013_106107198_106244728_106262141_RR
184			Hg38_17_7861815_7869138_7929728_7931226_RR
185			Hg38_1_121289281_121293407_121403378_121413898_FF
186			Hg38_12_49954074_49960858_50101385_50107364_FF
187			Hg38_6_32178822_32181952_32282603_32287434_RR
188			Hg38_11_6164440_6172634_6399479_6402059_RF
189			Hg38_20_177034_181274_305424_309823_FR
190			Hg38_17_7929728_7931226_7944762_7946565_FF
191			Hg38_3_55535014_55543312_55612203_55618906_FR
192			Hg38_2_8571790_8576812_8640383_8646383_FF
193			Hg38_6_32934293_32937112_33060957_33074774_FF
194			Hg38_3_187569317_187579639_187726556_187727893_FR
195			Hg38_1_39655161_39659067_39769500_39772730_FR
196			Hg38_12_55953308_55956138_56112355_56115503_RR
197			Hg38_8_53448228_53464529_53518003_53523754_FF
198			Hg38_X_72208498_72213408_72340340_72345964_FF
199			Hg38_5_60437025_60452736_60528868_60530657_RF
200			Hg38_6_27860135_27864160_27892394_27893632_FR

表10.d6

151	OBD183-2561	GCCAGCGAGACACTCACACAACT	OBD183-2563
152	OBD183-2565	GGAACTAAAGGGAAGCGTCCACG	OBD183-2567
153	OBD183-2569	GCGTATAAAATTAGTAACGGCTAGA	OBD183-2571

154	OBD183-2573	CCAGCACACGGCACTTTCTTGGG	OBD183-2575
155	OBD183-2577	CAGTTCGTGTTCTGACGGCAGGC	OBD183-2579
156	OBD183-2581	TTCTTCGCTTGACGGAGCCAGCAGTT	OBD183-2583
157	OBD183-2585	CCTTGTGGGACCCCTATCTTCTC	OBD183-2587
158	OBD183-2589	GTCACTACTGAGGACTGAAAATGCGG	OBD183-2591
159	OBD183-2593	CAGCCCACACACGAGATACACAC	OBD183-2595
160	OBD183-2597	TCCCAAGGAACTATGGAGGCAGG	OBD183-2599
161	OBD183-2601	TATGAGCCGGGTTCATCTTTGCGC	OBD183-2603
162	OBD183-2605	ATAAATGTGTCCCAGGATAGGAGGC	OBD183-2607
163	OBD183-2609	CACCTGGAAAGAGGAAGTAGGGC	OBD183-2611
164	OBD183-2613	GAGGAGAATGGACAGGCTGGGTC	OBD183-2615
165	OBD183-2617	ACGGAGCGTATGTGAAAAGAAGTA	OBD183-2619
166	OBD183-2621	ATAAATGTGTCCCAGGATAGGAGGC	OBD183-2623
167	OBD183-2625	GTTATAGTACCGTCGTTTTAGGTGC	OBD183-2627
168	OBD183-2629	ACTTCTATGTTACACCCTCGGTC	OBD183-2631
169	OBD183-2633	CAGTCTGGGCAACATAGCAGGAGTGT	OBD183-2635
170	OBD183-2637	CAGGTGAGGTTGGCAGCAAGCAT	OBD183-2639
171	OBD183-2641	TTACGGCTTTGGTGCTCTCGGACACA	OBD183-2643
172	OBD183-2645	AAGGCAGGAGCCAACCCAGCACA	OBD183-2647
173	OBD183-2649	ACTTCCCAGAGGCTCCTGAAAGC	OBD183-2651
174	OBD183-2653	CTCGTAGTAATGGAGTTTGTAACGGC	OBD183-2655
175	OBD183-2657	TCTCCTGCTCCCCACTCCACAGT	OBD183-2659
176	OBD183-2661	GGTGGAAGCAGCAAGGGAAGACCAAT	OBD183-2663
177	OBD183-2665	AAGCCGTGGGACTCGCAGGTGAA	OBD183-2667
178	OBD183-2669	CACCTCTCCTCCGTCCCACCATT	OBD183-2671
179	OBD183-2673	CTGAGACTGTGACCCTGAAGAATGAC	OBD183-2675
180	OBD183-2677	GCTCGTAACTCAGGTTGTGAATCTTC	OBD183-2679
181	OBD183-2681	AGCAAGGTGAGGTGACAGGGAGC	OBD183-2683
182	OBD183-2685	GACGCAGTCTCACACACTTTGGG	OBD183-2687
183	OBD183-2689	GAATCCATACCCACTATCCCCAACC	OBD183-2691
184	OBD183-2693	GGGTGTTGCGAGATGAGCCTGAT	OBD183-2695
185	OBD183-2697	AGGCGACAGGGTTCGGGCTTTATTCT	OBD183-2699
186	OBD183-2701	TGGCAGAGGGAGAGGGTCAGAGA	OBD183-2703
187	OBD183-2705	GTGTTAATCGTCCGGGGACCAATTT	OBD183-2707
188	OBD183-2709	GAGTTACTCGTTACGGTGCTTCG	OBD183-2711
189	OBD183-2713	GGACGCTGAATGTTGTCAAGTGTTTT	OBD183-2715
190	OBD183-2717	GTGGGCGTCTCGTAGTAATGGAG	OBD183-2719
191	OBD183-2721	GGGAGTGGAGGAGTAAGGCTGAA	OBD183-2723
192	OBD183-2725	TACCGTGCTGTGTGACCTCAGAC	OBD183-2727
193	OBD183-2729	TCCCATTTCCCCATTCTGGTCCTAAG	OBD183-2731

194	OBD183-2733	GGAGGTGACAACAGTATCATAAAGTG	OBD183-2735
195	OBD183-2737	GCGAGAACGGAGGCTAAGTTGAT	OBD183-2739
196	OBD183-2741	CTGAATCCCTAGGTCATGGGTGTGG	OBD183-2743
197	OBD183-2745	TGTATACTCAAAGCCATCATAAGTG	OBD183-2747
198	OBD183-2749	GTATATACGATAAGTGATCAATTG	OBD183-2751
199	OBD183-2753	AAATCCCCCAGGGCTAGCTCGCTT	OBD183-2755
200	OBD183-2757	GCTTTGGTGCTCTCGGACACAGC	OBD183-2759

表10.d7

151	CCTCCCTGCTTCGGCTTTTCCCA
152	ACCTGCCACACCTGAGACCCAGA
153	GGACCGGGAGTCCGATAGACCTAC
154	TCACCATCTCCTCAGGCACAAGG
155	GGAGGCAGTCATTCTGGTGTTCC
156	GCGAACAGGACTGGAGAAAAGTATCA
157	TGAAGTGGCATCTCTCTCCCGCC
158	CTGTTTGTTGAATGGACTCTGGACCC
159	CCAGGGCTGACTGACACCAAAGC
160	TGAGGAAGGAGGTGCCAACCGCA
161	CCACTTCGGAGAAATGAGGCGCAA
162	GCTTGGGTCCCTGAACACTGTCATTC
163	GGCAGGCTCAAAGCAGGCATTGG
164	CCCCTTGTCCAGAGTTTCCACAC
165	AAGCGGTACAAAATTGTACCGTA
166	AGGTGTTGTTGAGGGTGGGTAGGAGA
167	CATTAGTAACATTTTGGCACGGTGT
168	TATTATGGGTGTGTATATCGCCGT
169	TTAGATTACCACAACATCAGCCTGGG
170	TGTCCTCTGGCTCTGTTTGGGCG
171	ATACTTCCCTTTTCCCACCTCTGGAT
172	TTACAGGTTTGAGGTGCCCGTCG
173	GGCGTTCTTGGCTGACACCCTCT
174	GAGATGGAGCAGAACAGGAAGTTGGG
175	TGCGAGGGCAAACACAGAGTGAG
176	GCCTCTCCCTCATTCAAAAGAAAGAA
177	CTGGTCGTCACCTCTTCCAACCT
178	CACTTTGGGAGACTGAGAGCGGA
179	ATTGTTCTGAGCACTGAGGACACAGC
180	AGATGAGCGGCAGGTTTGGCTGAGA
181	CACACAGAGTAGGCAGGCGGATA

182	CCCAGTCAGGGAATGAGAGGGTATG
183	GGGTAAGAAAAGTGTGTCTCATTGAT
184	TGAAGTGGCATCTCTCTCCCGCC
185	GAAGAGGACTGTAGAAGGAGACAAGA
186	CAAGGAGATGCCCAGGCTAATGG
187	TCTTCGTTAAGAAATATTTCCGTT
188	TCCACGACCGCCACAGGAAAGGTAC
189	GGTTTTCCCCTGGAGTTGGACTGTTC
190	GCTGACCTTGGGTGTGGTGTCCA
191	CTGCCACTTTGAGACTGCCCCTC
192	CCGTCTTCAGCCCTCAGTGTAGG
193	GAGAGATTCTGTTATTAGTGCTTTGC
194	AAACCCTACAAGTGTGACCGCTGCCA
195	CCCCACGCCACCATAGATGTGCGC
196	TCCCTAACCGTAAAAACATGCAGG
197	CATAGTGCTAGTCCATTCCATAAC
198	AGCCACACCTGCGCCCGGAACCC
199	TTGTGGTCGACACACATGATAAGTT
200	GCGGTGGTTTATGCGTCCTTAGC

表10.d8

201	Hg38_19_11340579_11345804_11418077_11420873_FF	RAB3D	75158.23965
202	Hg38_6_31621846_31623705_31658615_31662274_FR	BAG6	73476.96162
203	Hg38_6_27833806_27836574_27892394_27893632_FF	HIST1H3I	87306.02454
204	Hg38_10_30369802_30374526_30437454_30440597_RR	MAP3K8	99482.11373
205	Hg38_1_36421193_36424970_36575866_36579237_RF	CSF3R	88238.80531
206	Hg38_19_18333551_18335634_18573351_18575967_FR	UBA52	101798.2618
207	Hg38_4_137465162_137478589_137647185_137649115_FR	SLC7A11	104516.3011
208	Hg38_2_47522457_47530546_47552565_47559543_FF	EPCAM	82019.4599
209	Hg38_11_128362004_128366353_128529463_128539984_RR	ETS1	95196.97394
210	Hg38_1_20161773_20167840_20178914_20185415_RF	PLA2G2F	71067.54178
211	Hg38_1_121333642_121342053_121433689_121438873_FF	FCGR1B	74438.73456
212	Hg38_19_11261901_11265731_11340579_11345804_RF	RAB3D	81266.52708
213	Hg38_1_159779096_159781322_159863199_159866609_RF	FCRL6	102134.347
214	Hg38_14_87618180_87629304_87841922_87846485_RF	GPR65	72699.81319
215	Hg38_2_215339857_215344488_215450480_215454642_FF	FN1	96409.36325
216	Hg38_12_54361590_54362896_54482792_54487121_FF	GPR84	100643.6652
217	Hg38_1_121333642_121342053_121465918_121472610_FR	FCGR1B	75113.82198
218	Hg38_19_14087074_14088724_14138048_14139567_FF	PRKACA	100867.5092
219	Hg38_3_55486659_55489812_55535014_55543312_RF	WNT5A	101340.9799
220	Hg38_X_133584341_133592788_133714472_133717449_RF	GPC3	89298.90821

221	Hg38_6_41533263_41541541_41639865_41645770_FF	TFEB	83891.12372
222	Hg38_20_23532159_23546814_23581107_23587842_FR	CST9	103099.2686
223	Hg38_7_6241289_6247872_6305163_6306814_FR	RAC1	96671.96879
224	Hg38_8_85458958_85464677_85620981_85632239_FR	CA2	94553.62101
225	Hg38_1_39655161_39659067_39891844_39898103_FF	PPIE	85073.55945
226	Hg38_1_121080942_121088798_121333642_121342053_RF	FCGR1B	81524.31487
227	Hg38_19_50382303_50383705_50507414_50511937_FR	NR1H2	91360.83698
228	Hg38_6_27728784_27735060_27860135_27864160_RF	HIST1H3H	82074.91985
229	Hg38_13_52856863_52871994_53037034_53038116_RR	OLFM4	100019.3414
230	Hg38_19_55646678_55648748_55776223_55778463_FF	NLRP9	90744.99246
231	Hg38_3_107828110_107834026_107847362_107853810_FF	CD47	86522.95908
232	Hg38_1_121302597_121312167_121333642_121342053_RF	FCGR1B	75746.22226
233	Hg38_6_33032719_33045940_33181270_33183497_RF	HLA-DPA1	86309.24088
234	Hg38_6_108163024_108164102_108359267_108371469_RR	OSTM1	102519.1724
235	Hg38_11_6268414_6277518_6399479_6402059_RF	APBB1	88516.17938
236	Hg38_19_38359207_38361549_38528221_38534565_FF	RASGRP4	92074.97165
237	Hg38_1_203176687_203182913_203223882_203229092_FR	CHI3L1	92883.913

表10.e1

201	-1.13712068	0.003576526	0.003131998	免疫
202	-1.137103255	0.003361092	0.002893092	免疫
203	-1.137039484	0.001555148	0.000951462	免疫
204	-1.136815419	0.00088347	0.00029449	免疫
205	-1.136790428	0.001014024	0.000376515	免疫
206	-1.136702764	0.000439511	2.06619E-05	免疫
207	-1.136652217	0.000439511	1.71494E-05	免疫
208	-1.136614547	0.005174643	0.005065473	免疫
209	-1.136581836	0.000508234	5.9311E-05	免疫
210	-1.136555095	0.005716634	0.005620151	免疫
211	-1.136552516	0.002418599	0.001959371	免疫
212	-1.136518191	0.001509078	0.000872336	免疫
213	-1.136412937	0.000211853	3.57558E-06	免疫
214	-1.136228821	0.003834101	0.003478193	免疫
215	-1.136198655	0.00048383	3.61197E-05	免疫
216	-1.135931381	0.000580521	0.000144351	免疫
217	-1.135913696	0.002324775	0.001853935	免疫
218	-1.135824779	0.001183842	0.000566503	免疫
219	-1.135789691	0.000580521	0.000146967	免疫
220	-1.135560291	0.001529047	0.00090994	免疫
221	-1.135554297	0.001523301	0.00089984	免疫

222	-1.135513678	0.001605895	0.001002837	免疫
223	-1.135505139	0.000548965	8.86915E-05	免疫
224	-1.135279349	0.00048383	3.83401E-05	免疫
225	-1.135212221	0.002387363	0.001923993	免疫
226	-1.13504303	0.001364867	0.000755679	免疫
227	-1.134973957	0.001014024	0.00037646	免疫
228	-1.13496699	0.002266378	0.001702174	免疫
229	-1.134941098	0.000399267	1.0108E-05	免疫
230	-1.134914024	0.002900401	0.00242312	免疫
231	-1.134693113	0.003054479	0.002577619	免疫
232	-1.134660959	0.002581943	0.002124384	免疫
233	-1.134546677	0.001605895	0.001000896	免疫
234	-1.134543655	0.000336555	7.10032E-06	免疫
235	-1.134518179	0.002251343	0.001681383	免疫
236	-1.134382464	0.000749172	0.000233645	免疫
237	-1.134282194	0.001183842	0.000564588	免疫

表10.e2

201	CAAAGCAGTCAAGGCCCAAAGACAACCCTCGAAAGTCACAAGAAGC ACCGTCGCTCTCGG
202	GCCATCAGATCTCCCACATGAGGCATTTTCGATGGCTCAGATCCTGAG ATCCAAGGAACA
203	ATAGATGCTCAGAAAGATTCAATTGAACTCGATGAGATGCCGGTGTC GGGGTGGACTTGC
204	TCTGGGCCTCTGTTAGCCAGCTGTAAATTCGAGAGAGGTTACGTTACT TGCTCAACGTCA
205	ACAGGAGGCTCCTCTAACACATCTCCTCTCGAAAGAACAAAGCCCAA ATTGTTTACCACC
206	ATACAAGTGGCTGGACAGCGAGAGGACGTCGAGCCCAGTGACACCA TTGAGAATGTCAAA
207	CCCAGTCACGTACCCTCTGCTTGCTCAATCGATCCAATTAAAATAACA TACATTATAGAC
208	CGGAGGGTATAATAACTGCTGTTGTGTATCGAAGTGCAGCAAAGAGG TAATTTCTGTCAA
209	TCACACTGCTCATAGCGTTTGTTTATTCTCGAAGTAGAGTATTGCTCT CTGCACTTTGTT
210	GCCAGGATAGGGAAGAAGCAGATTGATATCGAGGACAGTAGGCTTTC CCAGAGAGAGTCT
211	TGACCCCAAGCATTCTGGCCTGAACGATTCGAATCTTCCTTGCATCTC AAGGATAAGTCC
212	CAAAGCAGTCAAGGCCCAAAGACAACCCTCGAGGGGTTTCAAACGCC ACCAAGGAGCCCA

213	CGGATTCTGGTTACAGAGAGGGATGAGATCGAGCTGGATATCAAGGAGGCAAAGAAGGAG
214	ATGAGGCTGTGGAAGAGCAAAATGAGTTTCGATTAATGGCCTGCAATTGTCATTGTTGCC
215	GGCACGTAGATGACTTGAGCTCAGGAGTTCGAGACCAAACAGCTCCTCCTAGTTGTCATT
216	CAAAGCAGAGGAACACAGCAAAACACATTCGAAAGAAAAAAGAAAAAAAAAGGCTCAAGG
217	TGACCCCAAGCATTCTGGCCTGAACGATTCGAAAAGTAAAATAAAAACTGTGCCACTGCT
218	CTCCGGGAATCCAGCCTCAGTAAAATATTCGATTTTTTAACAGCTAAAAAGAATTTTTCT
219	GGAGACAGGGTTACATCAGCCAGTAACATCGATGTTCTCAGAGCAAAAGGAAAGTCGTCA
220	ACCACACCCTGGTCCTGGTAGTTAAAGATCGACCCTCCAAGGAGTTCACTGTTATTTGGA
221	GACCATAATACCCAAATATCCACTACAATCGAGAGTGACAGGGAGAATCAAAGGGACAGT
222	GAGAAGGGGAAACACAATGTGTCTGTTATCGAGCTCTGAATTTCTTTTTCCTACTAGTTT
223	AGGGCTTACCATGGTTCCCAGGCTGGTCTCGAACTCCAAACCTCAGATGAACCACCCACC
224	TCTGATTTCCGAGTTTTCCCTTCATCTCTCGAAAAATACCAAATATATGGAAATCAAACA
225	AAACTAGAGGGATCTACCAGAGGAGGTGTCGATTTGTATATATCTAAATTGGAAAAATGT
226	TGACCCCAAGCATTCTGGCCTGAACGATTCGATGATGCAGTTGCTTTTGAAACTCTTTAA
227	CCTGAAGGAGCTGAATGAGCAATTCCAATCGACCACCTGATCTCCCCCTTTCAACCCATC
228	GCCGTCTGGATCTCCCTGGAGGTGATGGTCGAGATTAGGAAATATCCAAAACCCAGAAAT
229	GTTGGAAGGAATCCAGGGTAAGGGATATTCGAATTTCCAAGTGAGTTATTACAGCTGTCC
230	CAATTTAGGGCTTCAGCTTCCTTTTCCTTCGAACCTCTCAGCTTGCTCCTTCCTATTCTG
231	TTACCAAGCCCGATGTTCTCCACGTGACTCGAGGACAGGAACTAAATTATATGCAGTATT
232	TGACCCCAAGCATTCTGGCCTGAACGATTCGAAATCAGGACATACAGATTGATACAATAC
233	GACACACAGGAAGTAGCCATGAGAAATATCGAGAAATTTGTCTTTTTTTTTTTTGACAGG
234	AGCCTAAAACGCAGGGAAGGTTCTTTTATCGAAAGGTTGATATATAACTAGAAAGAAGGA
235	GACTCTGATGCTGGATGAACTCCCACCCTCGATTTTATCTAAATCTGC

	TTGGCTGTGATG
236	ACGCTGAGGAGGAAGATTCGGGCTGGATTCGATGTATCTCCTGTACC TAGCACGGGGCTA
237	GTCCCAAGTGGCATGAGAGGTAGACTCATCGACATCACCAGGGGCAC ATGGACACCCTAG

表10.e3

201	19	11345773	11345802	11420842	11420871	19
202	6	31623674	31623703	31658617	31658646	6
203	6	27836543	27836572	27893601	27893630	6
204	10	30369804	30369833	30437456	30437485	10
205	1	36421195	36421224	36579206	36579235	1
206	19	18335603	18335632	18573353	18573382	19
207	4	137478558	137478587	137647187	137647216	4
208	2	47530515	47530544	47559512	47559541	2
209	11	128362006	128362035	128529465	128529494	11
210	1	20161775	20161804	20185384	20185413	1
211	1	121342022	121342051	121438842	121438871	1
212	19	11261903	11261932	11345773	11345802	19
213	1	159779098	159779127	159866578	159866607	1
214	14	87618182	87618211	87846454	87846483	14
215	2	215344457	215344486	215454611	215454640	2
216	12	54362865	54362894	54487090	54487119	12
217	1	121342022	121342051	121465920	121465949	1
218	19	14088693	14088722	14139536	14139565	19
219	3	55486661	55486690	55543281	55543310	3
220	X	133584343	133584372	133717418	133717447	X
221	6	41541510	41541539	41645739	41645768	6
222	20	23546783	23546812	23581109	23581138	20
223	7	6247841	6247870	6305165	6305194	7
224	8	85464646	85464675	85620983	85621012	8
225	1	39659036	39659065	39898072	39898101	1
226	1	121080944	121080973	121342022	121342051	1
227	19	50383674	50383703	50507416	50507445	19
228	6	27728786	27728815	27864129	27864158	6
229	13	52856865	52856894	53037036	53037065	13
230	19	55648717	55648746	55778432	55778461	19
231	3	107833995	107834024	107853779	107853808	3
232	1	121302599	121302628	121342022	121342051	1
233	6	33032721	33032750	33183466	33183495	6
234	6	108163026	108163055	108359269	108359298	6

235	11	6268416	6268445	6402028	6402057	11
236	19	38361518	38361547	38534534	38534563	19
237	1	203182882	203182911	203223884	203223913	1

表10.e4

201	11341803	11345802	11416872	11420871	N/A		
202	31619704	31623703	31658617	31662616	N/A		
203	27832573	27836572	27889631	27893630	N/A		
204	30369804	30373803	30437456	30441455	N/A		
205	36421195	36425194	36575236	36579235	N/A		
206	18331633	18335632	18573353	18577352	N/A		
207	137474588	137478587	137647187	137651186	N/A		
208	47526545	47530544	47555542	47559541	N/A		
209	128362006	128366005	128529465	128533464	N/A		
210	20161775	20165774	20181414	20185413	N/A		
211	121338052	121342051	121434872	121438871	N/A		
212	11261903	11265902	11341803	11345802	N/A		
213	159779098	159783097	159862608	159866607	N/A		
214	87618182	87622181	87842484	87846483	N/A		
215	215340487	215344486	215450641	215454640	N/A		
216	54358895	54362894	54483120	54487119	N/A		
217	121338052	121342051	121465920	121469919	N/A		
218	14084723	14088722	14135566	14139565	N/A		
219	55486661	55490660	55539311	55543310	N/A		
220	133584343	133588342	133713448	133717447	N/A		
221	41537540	41541539	41641769	41645768	N/A		
222	23542813	23546812	23581109	23585108	N/A		
223	6243871	6247870	6305165	6309164	N/A		
224	85460676	85464675	85620983	85624982	N/A		
225	39655066	39659065	39894102	39898101	N/A		
226	121080944	121084943	121338052	121342051	N/A		
227	50379704	50383703	50507416	50511415	N/A		
228	27728786	27732785	27860159	27864158	N/A		
229	52856865	52860864	53037036	53041035	N/A		
230	55644747	55648746	55774462	55778461	N/A		
231	107830025	107834024	107849809	107853808	N/A		
232	121302599	121306598	121338052	121342051	N/A		
233	33032721	33036720	33179496	33183495	N/A		
234	108163026	108167025	108359269	108363268	N/A		
235	6268416	6272415	6398058	6402057	N/A		

236	38357548	38361547	38530564	38534563	N/A		
237	203178912	203182911	203223884	203227883	N/A		

表10.e5

201			Hg38_19_11340579_11345804_11418077_11420873_FF
202			Hg38_6_31621846_31623705_31658615_31662274_FR
203			Hg38_6_27833806_27836574_27892394_27893632_FF
204			Hg38_10_30369802_30374526_30437454_30440597_RR
205			Hg38_1_36421193_36424970_36575866_36579237_RF
206			Hg38_19_18333551_18335634_18573351_18575967_FR
207			Hg38_4_137465162_137478589_137647185_137649115_FR
208			Hg38_2_47522457_47530546_47552565_47559543_FF
209			Hg38_11_128362004_128366353_128529463_128539984_RR
210			Hg38_1_20161773_20167840_20178914_20185415_RF
211			Hg38_1_121333642_121342053_121433689_121438873_FF
212			Hg38_19_11261901_11265731_11340579_11345804_RF
213			Hg38_1_159779096_159781322_159863199_159866609_RF
214			Hg38_14_87618180_87629304_87841922_87846485_RF
215			Hg38_2_215339857_215344488_215450480_215454642_FF
216			Hg38_12_54361590_54362896_54482792_54487121_FF
217			Hg38_1_121333642_121342053_121465918_121472610_FR
218			Hg38_19_14087074_14088724_14138048_14139567_FF
219			Hg38_3_55486659_55489812_55535014_55543312_RF
220			Hg38_X_133584341_133592788_133714472_133717449_RF
221			Hg38_6_41533263_41541541_41639865_41645770_FF
222			Hg38_20_23532159_23546814_23581107_23587842_FR
223			Hg38_7_6241289_6247872_6305163_6306814_FR
224			Hg38_8_85458958_85464677_85620981_85632239_FR
225			Hg38_1_39655161_39659067_39891844_39898103_FF
226			Hg38_1_121080942_121088798_121333642_121342053_RF
227			Hg38_19_50382303_50383705_50507414_50511937_FR
228			Hg38_6_27728784_27735060_27860135_27864160_RF
229			Hg38_13_52856863_52871994_53037034_53038116_RR
230			Hg38_19_55646678_55648748_55776223_55778463_FF
231			Hg38_3_107828110_107834026_107847362_107853810_FF
232			Hg38_1_121302597_121312167_121333642_121342053_RF
233			Hg38_6_33032719_33045940_33181270_33183497_RF
234			Hg38_6_108163024_108164102_108359267_108371469_RR
235			Hg38_11_6268414_6277518_6399479_6402059_RF
236			Hg38_19_38359207_38361549_38528221_38534565_FF

237			Hg38_1_203176687_203182913_203223882_203229092_FR

表10.e6

201	OBD183-2761	CCCCTAGCCGTTTAATAGTATACA	OBD183-2763
202	OBD183-2765	ATAAATGTGTCCCAGGATAGGAGGC	OBD183-2767
203	OBD183-2769	TCCCATTTAGGAGAGTGCCTGGC	OBD183-2771
204	OBD183-2773	GGTAACTGGCGAAGCACTCAATAAAC	OBD183-2775
205	OBD183-2777	CCACACACGAGATACACACACCC	OBD183-2779
206	OBD183-2781	ACTCCCGCCTTCGTGCCCAAATA	OBD183-2783
207	OBD183-2785	TGAACCCACTGCTAATACCAACCG	OBD183-2787
208	OBD183-2789	TCAGTCTCCATACACCTTGGAGT	OBD183-2791
209	OBD183-2793	ACGAGCAAAGGTGAGAAAGCAAATGC	OBD183-2795
210	OBD183-2797	GCATGACTGGCAACGGCTCGCCCTG	OBD183-2799
211	OBD183-2801	AAGTAAATCCTCGGAGCTGAGACG	OBD183-2803
212	OBD183-2805	GTTCCCGCCTTCCTCCATCTTGC	OBD183-2807
213	OBD183-2809	TTGGAGGTGGAGGTCTGCCAGGT	OBD183-2811
214	OBD183-2813	TCAGCAGGGCAGGAACACAGTGG	OBD183-2815
215	OBD183-2817	CACCTGTTGTAATCCTGGCACTCTGG	OBD183-2819
216	OBD183-2821	CCAGGTGAGGTTGGCAGCAAGCA	OBD183-2823
217	OBD183-2825	AAACGTTACCCAGGCCACTACTCAT	OBD183-2827
218	OBD183-2829	ACTTAGTTTCTCACGTTGTCACA	OBD183-2831
219	OBD183-2833	GGGAGTGGAGGAGTAAGGCTGAA	OBD183-2835
220	OBD183-2837	TGTAGTCTTAGAACCCCCGTACGT	OBD183-2839
221	OBD183-2841	GGTCACAGAAGGAAGCCTACTGC	OBD183-2843
222	OBD183-2845	AATATCCATCCCCCGGAACTTGCT	OBD183-2847
223	OBD183-2849	AGTTTTGTTGTTTCTTTTCTTCA	OBD183-2851
224	OBD183-2853	GTCCGTGCCCAGTGCTTTGGCGTCG	OBD183-2855
225	OBD183-2857	GCAGACAGGCAGAAGGACAGAAC	OBD183-2859
226	OBD183-2861	GGTGGAAGCAGCAAGGGAAGACCAAT	OBD183-2863
227	OBD183-2865	AATCCTTCCTGCCCCTGTGCCAG	OBD183-2867
228	OBD183-2869	GCTTTGGTGCTCTCGGACACAGC	OBD183-2871
229	OBD183-2873	GACCAAAGCACCTCTGAAGGACAAAG	OBD183-2875
230	OBD183-2877	TTACCGACTCATGACGGCGATTCTC	OBD183-2879
231	OBD183-2881	CTTATCGTCCGCCTTCATTCCTATGC	OBD183-2883
232	OBD183-2885	GGTGGAAGCAGCAAGGGAAGACCAAT	OBD183-2887
233	OBD183-2889	GATTAGCGCTGGACCTTGTTGTCCA	OBD183-2891
234	OBD183-2893	CTAAACAGGTTCAGACATAGCCCCTA	OBD183-2895
235	OBD183-2897	CTATATTGTGTGATGTCAGCATGTC	OBD183-2899
236	OBD183-2901	TCTCACAAGGGGTAGGGTCACTCCA	OBD183-2903
237	OBD183-2905	GATGGGAGACAGGCAGGTGAGAG	OBD183-2907

表10.e7

201	TTTTTCGGCCTAGATAAGATTCCAC
202	TGAGGGCACTGCTCTTGGATTCACCA
203	GTGCTCTTTCACTCTCCTCCGCC
204	ACCCAGCCATCTGCCTCTCAGTGAAT
205	TTGCTGGCAGAGACTCGCCTGGA
206	CAGCCCTACTCACCCTCCTTGTC
207	CAGTGCGGGGGTGGGTCGGCCGAT
208	CCTTTGTCTAGGAGCTGTTGACATG
209	CCCCTCAGAACTCAGGAGAAATCAT
210	GTAGTAGACGATGTGCGCAGTCGGA
211	ATAAGCAGCCTCAACTGCCTTCCGA
212	AGGCTCCAGGCTCTGAGATTTGG
213	TCCCTACCCTCCTATGTGCTCCT
214	CTGCCCTGGAAGCCTATGTGACT
215	GATACACAGACCTTGAGGCAACAATG
216	GGAGTGGGAAAGGAAGCGACAGA
217	CAAAATTCCGGCTCTCGCATGGGTT
218	TTTACAGTGGACGCTTCCGGAAAAC
219	CCTCCATTTCCCCAACCGCCTGA
220	GAGTACCCCTAATGCCGGGTACAGT
221	CGCAGTCCGATGCTCTATCTCCC
222	GAAAGTTGAGTTCCAGGACCTTGA
223	GCACTCTGTTGGGATTGCCAGGGA
224	CCTTTAAGGGCCCAAGCTGGGTC
225	GCTGGTGCTTGGGAAGGTAGGAG
226	CTCTGATAACATCTTCCCTCTACACG
227	ATGTGGGAAGCCTGGCACTGATG
228	GCCTGAACGAGGGACCTATCAAC
229	GCCTTTTGTGCCATCCCTTTCCTAAG
230	AGGAACCTATACCTATGCTGCTCTG
231	CCCAGACATCCTACCACCAGTAAAAC
232	GCATAATCTTGGACTTTCGTTTGCCA
233	CTTCCATGCTGGGTACCAATATGAA
234	TGGACAGGGCAGGCAATAACAGGGAT
235	GTGGTCCCGCCGTTTGCAAGTGT
236	GCATCATCGAGCCCCCTATTCAC
237	GGCTCCCCAGGTCTTTACTAACC

表10.e8

qPCR引子集

	探針	qPCR引子ID
4	Hg38_3_194096425_194098698_194154195_194165166_FF	OBD183-q969
12	Hg38_2_11008274_11010451_11159160_11162827_FR	OBD183-q909
16	Hg38_22_42578934_42580470_42682810_42685060_FR	OBD183-q981
21	Hg38_16_85802241_85804577_86052797_86054069_RR	OBD183-q829
23	Hg38_2_47522457_47530546_47595212_47601970_FF	OBD183-q865
24	Hg38_2_47354005_47355988_47522457_47530546_RF	OBD183-q905
33	Hg38_11_5689507_5691245_5788110_5795433_FF	OBD183-q809
37	Hg38_11_63903088_63909160_64170615_64174763_FF	OBD183-q997
42	Hg38_X_1815902_1820657_1830879_1832345_RR	OBD183-q993
44	Hg38_19_55104500_55106500_55175439_55177687_FR	OBD183-q861
48	Hg38_12_110242070_110251176_110379081_110380448_RR	OBD183-q881
143	Hg38_8_22681793_22682820_22815485_22819827_FR	OBD183-q805

表11.a

qPCR引子集

	序列	qPCR引子ID
4	CGGAGAGAGGGACGCAGGAATGGAAGGG	OBD183-q971
12	GAAGCCCAGGGAGGTGTGTGAGGACTGC	OBD183-q911
16	CAGGTCCCCTCCCAGACACCAGC	OBD183-q983
21	GCACAGCAAGGTGAGGTGACAGGGAGC	OBD183-q831
23	GGACTGGACACTTGAGAGGGCACTGGGC	OBD183-q867
24	GGACTGGACACTTGAGAGGGCACTGGGC	OBD183-q907
33	CTCTGAAGGTCCAGTCACAGGGAACTTG	OBD183-q811
37	GTGGTGGGCAGTGGCGGCAACGACAAAG	OBD183-q999
42	GGTGGACCTGACACGGATGCCTGCTGAC	OBD183-q995
44	CCTCTTTGGTGTGGGCTCCGACCTC	OBD183-q863
48	GGCTCACTGACCTCCCAGGCTCAAGCGA	OBD183-q883
143	CAGGAAGCAGGCAACAGCCCGATGACAC	OBD183-q807

表11.b

qPCR引子集

	qPCR反向序列	探針ID
4	CGAACCCACCACACACACACCAGAC	OBD183-p969
12	CTCCTCCTGCCAGCCTCCTGAGC	OBD183-p909
16	AGAGGAGGCGAGACGAAGAGGTGGGAGC	OBD183-p981
21	TTAGGCTTCCTTGCGGGTGCTCCTCAGG	OBD183-p829
23	AAGGCAGCAGCCAGAGCCCCAGC	OBD183-p865
24	CACAGGTGCCCAGCCCAGTGGAC	OBD183-p905
33	TCAAGGCTGCTCATACAACATCCATTCT	OBD183-p809

37	GGAGCCTGGAAAACAGAGGATGCCCC	OBD183-p997
42	CCTCGTGAATCCGCCTGCCTTGGC	OBD183-p993
44	CCCTGGGCACTACTGACTCCTGGGCTGT	OBD183-p861
48	CTCAGGGATGCGGTTGAATAGTCCGTCC	OBD183-p881
143	GTGAGTGTTCAGCAGGAAGCGGCAGCG	OBD183-p805

表11.a3

qPCR引子集

	探針序列	探針ID
4	AGCTGCAGGAAAACCCCGTTCTTATTCGACATAT	OBD183-p971
12	TGTTTCGGCTTTAGTTCGATGGTGAAGACCCC	OBD183-p911
16	TCCCTGTCTAGTCCTATCTGTTCATCGAGCCAG	OBD183-p983
21	AGGCCGTTCTAAAAGCACATTTGTATCGAATAA	OBD183-p831
23	TGTGTATCGAGCAACCCCTGAGAATAAGGTGGC	OBD183-p867
24	ACTGCTGTTGTGTATCGAGGTGTAACTCACTAGC	OBD183-p907
33	TCCTGTCTCAAGAGCCGAGCTCCTCGAAGCCATT	OBD183-p811
37	GGGGCATCCTCTGTTTTCCAGGCTCC	OBD183-p999
42	AGGAGTTCGAGACAAGCCTGGCCAACATGGTG	OBD183-p995
44	TGTCAGCACTTGGAGCTATCCAATGGTCGAAGCG	OBD183-p863
48	TCACCATATTGCCAGGGCTGGTCTCGAACTCC	OBD183-p883
143	AGGACTCATGTTCTCTCGAGGTCTAGAATCTGAG	OBD183-p807

表11.c

	探針序列
4	AGAGAACTGAAAGCATATGTCGAATAAGAACGGG
12	ACCATCGAACTAAAGCCGAAACACATTGAGCTCT
16	TCTGGCTCGATGAACAGATAGGACTAGACAGGG
21	TTATTCGATACAAATGTGCTTTTAGAACGGCCTC
23	TTGCTCGATACACAACAGCAGTTATTATACCC
24	TGCTAGTGAGTTACACCTCGATACACAACAGCAG
33	AATGGCTTCGAGGAGCTCGGCTCTTGAGACAG
37	AGCCTGGTCTCGAACCCCGTTGAGAGAGAG
42	ACCATGTTGGCCAGGCTTGTCTCGAACTCCTG
44	TCGCTTCGACCATTGGATAGCTCCAAGTGCTGAC
48	AGGAGTTCGAGACCAGCCCTGGCAATATGGTG
143	AGACCTCGAGAGAACATGAGTCCTTTCCCCTC

表11.d

	「S_SS」及「qPCR_ICU」中之27個共同元素
	探針
1	HG38_5_74325511_74329920_74537627_74543794_FR

2	HG38_22_38362202_38364548_38442867_38446753_FF
3	HG38_12_8956666_8971971_9041253_9052225_RF
4	HG38_15_34886920_34889054_34974237_34980574_FF
5	HG38_11_118323848_118335396_118462783_118464333_RR
6	HG38_14_56302711_56310533_56523582_56531640_RR
7	HG38_21_10469195_10476377_10561289_10564307_FF
8	HG38_8_100518647_100527202_100566246_100573436_FR
9	HG38_3_140876349_140880490_140923822_140931266_FR
10	HG38_3_10166863_10171451_10267732_10269649_RF
11	HG38_18_56075450_56084543_56148926_56154674_RF
12	HG38_6_6906046_6910447_7167574_7173314_FF
13	HG38_6_96904639_96916143_97164838_97174050_FR
14	HG38_7_38195275_38200060_38339555_38347520_RF
15	HG38_9_104713365_104717628_104860975_104864532_FR
16	HG38_8_5120591_5125403_5295149_5302540_FF
17	HG38_1_109341939_109348573_109359719_109366704_RR
18	HG38_16_73137152_73141460_73235290_73240438_RR
19	HG38_5_67178844_67182260_67213797_67219491_FR
20	HG38_1_109359719_109366704_109565116_109566579_RF
21	HG38_15_65465777_65469194_65573794_65596385_RF
22	HG38_1_17044824_17050263_17192218_17198113_FF
23	HG38_9_77019945_77021308_77093295_77095880_FR
24	HG38_22_37732067_37737457_37944696_37945909_FF
25	HG38_16_20282299_20286605_20445721_20457266_FR
26	HG38_1_220397549_220404820_220583887_220590755_FR
27	HG38_2_13572319_13584069_13777052_13783676_RR

表12.a

	「S_SS」及「qPCR_ICU」中之27個共同元素	
	基因	RP
1	ENC1、HEXB、GFM2	0
2	CSNK1E、KCNJ4、KDELR3	0
3	KLRG1、M6PR、PHC1	0
4	AQR、ZNF770、ACTC1	0
5	CD3D、CD3G、UBE4A、ATP5L	0
6	TMEM260、PELI2、OTX2	0
7	TPTE、CH507-396I9.6、SMIM11	0
8	ANKRD46、SNX31、RNF19A	0
9	SLC25A36、SPSB4、TRIM42	0
10	IRAK2、TATDN2、RP11-438J1.1	0

11	TCF4、TXNL1、WDR7	0
12	RREB1、SSR1、CAGE1	0
13	KLHL32、MMS22L、NDUFAF4	0
14	STARD3NL、AMPH、SFRP4	0
15	NIPSNAP3A、NIPSNAP3B、ABCA1	0
16	CSMD1、MCPH1、ANGPT2	0
17	SORT1、PSMA5、MYBPHL	0
18	ZFHX3、AC004158.1、PMFBP1	0
19	CD180、MAST4、SREK1、ENC1、HEXB、GFM2	0
20	SORT1、PSMA5、SYPL2、ATXN7L2、CYB561D1、AMIGO1、GPR61、GNAI3	0
21	DPP8、PTPLAD1、VWA9	0
22	SDHB、PADI2、PADI1	0
23	FOXB2、VPS13A、PRUNE2	0
24	RP1-37E16.12、TRIOBP、H1F0、GCAT、GALR3、ANKRD54、EIF3L、MICALL1、C22orf23、	0
25	GP2、UMOD、PDILT、ACSM5、ACSM2A	0
26	MARK1、C1orf115、RAB3GAP2	0
27	TRIB2、FAM84A、NBAS	0

表12.b

	「S_SS」及「qPCR_ICU」中之27個共同元素			
	FC:(1類/2類)	pfp	P值	CCS
1	1.359710939	946	0.003881856	s_ss
2	1.363695069	556	0.004780674	s_ss
3	1.364393463	64	0.005040658	s_ss
4	1.357006645	495	0.005451143	s_ss
5	1.33204853	934	0.00612789	s_ss
6	1.286049269	541	0.006677679	s_ss
7	1.30336803	898	0.006727825	s_ss
8	1.393967224	112	0.006817258	s_ss
9	1.404566293	520	0.006834053	s_ss
10	1.292229756	958	0.006838559	s_ss
11	1.37980114	535	0.00763	s_ss
12	1.384554408	768	0.007802214	s_ss
13	1.379039382	656	0.007810288	s_ss
14	1.272419515	675	0.008120322	s_ss
15	1.398854779	465	0.008221288	s_ss
16	1.346863591	388	0.008240722	s_ss
17	1.36223914	433	0.008262184	s_ss

18	1.373224679	802	0.008285011	s_ss
19	1.342803094	397	0.008730791	s_ss
20	1.319227832	483	0.008821062	s_ss
21	1.351266752	995	0.008824207	s_ss
22	1.321633207	927	0.008936962	s_ss
23	1.313942476	661	0.009091699	s_ss
24	1.329740767	745	0.009593766	s_ss
25	1.326912217	710	0.009666081	s_ss
26	1.370652703	398	0.009686475	s_ss
27	1.275941414	456	0.009745654	s_ss

表12.c

	探針序列
	60 mer
1	TTCCAAAATTCTGAGATTCTTAATTATGTCGAACTCCTGACCTCAGTCAATCTGCCCACC
2	GAATGAGATCATGTATTTTGTGGGAACATCGAACTCCTGACCCTCATGTGATCCATCCAC
3	TTATCCAATTATAAGTCTATTGGCTCTTTCGAACTCCTGACCTCACGTAATTCTCCCACC
4	ATTCTAATATTCTTTAAAAACCATAAATTCGATCTCTTGACCTTGTGACTCACCCGCATC
5	TACCAGGGATGTCTGAAGGAACTAAGAGTCGATCTCCTGACTTTGTGATCCTCCCACGTC
6	TAATTTGCACTTCCCTGATGGCTAATTGTCGATCTCTTGACCTTATGATCTGCCCACCTC
7	GAAATTAAAATACCAAAAGAATTCAAGATCGAACTCCTGACCTCCAGTAAACCACCCGCC
8	AGACCCTGTCAGTTACCACATCTTAGCTTCGATCTCCTGACCTCGTAATCTACCTGCCTC
9	ATATGTCAAATTGTTTAATGCTTAAACATCGATCTCCTGACCTTGTGAACCTCCCACCTC
10	GAGCCCAGTAGTTCAAGGTTTCAGTGAGTCGAACTCCTGACCTCATGTGATTTGGCCGCT
11	AATTTTAGACCAACATCCCTGATGAACATCGAGACCAGCCTGAACAATATAGTGAGACCC
12	GCCTTCCATGCATCTTTTTTTTTTTTTTTCGAACTCCTGACCTAAGGTGATCCAAACCGC
13	GACAAAAAAGTAGAGAGACATACAGGAATCGAACTCCTGACCTCTAGTAATCCACCCACC
14	AGTACTCCTAAAGATGGGGGAATGCAAATCGAACTCCTGACCCCATGTGATCCACTTGCC
15	AATTTTAGATCAATATCCCTGATGAACATCGAACTCCTGACCTCAAGTGATTTTCCCGCC

16	TCACTCCCAAGCCATTGTGTTGTCTAAATCGAACTCCTGACCTCAACTGATTTGTCCACC
17	AGCTTTGAGCAGCTTTTATTTTTACATGTCGAACTCCTGACCTCAGGTAATCTTCCCACA
18	CTGCAGTGTAGGTATCTACAAAGCAGTATCGATCTCCTGACCTCATCATCCTCCTGCCTC
19	GACCTAAGGATTAAGAAGATTAATGGAGTCGATCTCCTGACATCGTGATCTATCCGCCTC
20	GAATGAAATGTCATTCTTTTTTGTTTGTTCGAACTCCTGACCTCAGGTAATCTTCCCACA
21	ATGTTGTAACCAAAAGAACTTAAACATTTCGATCTCCTGACCTTGTCATCCACCTACCTC
22	CCAGGATGTACTACACTGAATATCTAAGTCGAACTCCTGACCTCAGGTTATCCATCTGCC
23	AAAGCCTCATTCGCTGGTAAATTGGAAGTCGAACTCCTGACCTCAGGAGATCCATCTGCC
24	GAGGCAGGCAAATCACGAGCTCAGGAGATCGAACTCCTGACCTCATGATTTGCCTGCCTC
25	AGACTCAACCATTTGTCTAACCAATCAATCGAACTCCTGACCTCAGATGATTCACTCACC
26	TATTTATTCTACATATCCTGTGTGAAGTTCGATCTCCTGACCTCGTGATATACCCACCTC
27	CCAGTTACAACTGAGTCACTAAGGCTAGTCGAACTCCTGACCTCAAGTAATATCCCCGCC

表12.d

	探針位置				
	Chr	**開始1**	**結束1**	**開始2**	**結束2**
1	5	74329889	74329920	74537627	74537658
2	22	38364517	38364548	38446722	38446753
3	12	8956666	8956697	9052194	9052225
4	15	34889023	34889054	34980543	34980574
5	11	118323848	118323879	118462783	118462814
6	14	56302711	56302742	56523582	56523613
7	21	10476346	10476377	10564276	10564307
8	8	100527171	100527202	100566246	100566277
9	3	140880459	140880490	140923822	140923853
10	3	10166863	10166894	10269618	10269649
11	18	56075450	56075481	56154643	56154674
12	6	6910416	6910447	7173283	7173314
13	6	96916112	96916143	97164838	97164869
14	7	38195275	38195306	38347489	38347520
15	9	104717597	104717628	104860975	104861006

16	8	5125372	5125403	5302509	5302540
17	1	109341939	109341970	109359719	109359750
18	16	73137152	73137183	73235290	73235321
19	5	67182229	67182260	67213797	67213828
20	1	109359719	109359750	109566548	109566579
21	15	65465777	65465808	65596354	65596385
22	1	17050232	17050263	17198082	17198113
23	9	77021277	77021308	77093295	77093326
24	22	37737426	37737457	37945878	37945909
25	16	20286574	20286605	20445721	20445752
26	1	220404789	220404820	220583887	220583918
27	2	13572319	13572350	13777052	13777083

表12.d

	4 kb序列位置				
	Chr	**開始1**	**結束1**	**開始2**	**結束2**
1	5	74325919	74329920	74537627	74541628
2	22	38360547	38364548	38442752	38446753
3	12	8956666	8960667	9048224	9052225
4	15	34885053	34889054	34976573	34980574
5	11	118323848	118327849	118462783	118466784
6	14	56302711	56306712	56523582	56527583
7	21	10472376	10476377	10560306	10564307
8	8	100523201	100527202	100566246	100570247
9	3	140876489	140880490	140923822	140927823
10	3	10166863	10170864	10265648	10269649
11	18	56075450	56079451	56150673	56154674
12	6	6906446	6910447	7169313	7173314
13	6	96912142	96916143	97164838	97168839
14	7	38195275	38199276	38343519	38347520
15	9	104713627	104717628	104860975	104864976
16	8	5121402	5125403	5298539	5302540
17	1	109341939	109345940	109359719	109363720
18	16	73137152	73141153	73235290	73239291
19	5	67178259	67182260	67213797	67217798
20	1	109359719	109363720	109562578	109566579
21	15	65465777	65469778	65592384	65596385
22	1	17046262	17050263	17194112	17198113
23	9	77017307	77021308	77093295	77097296
24	22	37733456	37737457	37941908	37945909

25	16	20282604	20286605	20445721	20449722
26	1	220400819	220404820	220583887	220587888
27	2	13572319	13576320	13777052	13781053

表12.e

	「H_SS」及「qPCR_ICU」中之5個共同元素：		
	探針	基因	RP
1	HG38_5_112081094_112093775_112164631_112171972_FR	EPB41L4A、NREP、APC	0
2	HG38_18_539296_550050_584723_586397_RF	CETN1、CLUL1、COLEC12	0
3	HG38_6_35168716_35174569_35319888_35323579_FF	SCUBE3、ZNF76、DEF6	0
4	HG38_9_92703705_92712491_92968821_92970651_FR	BICD2、ZNF484、FGD3	0
5	HG38_10_72986605_72992630_73084937_73090858_FF	P4HA1、NUDT13、PLA2G12B	0

表13.a

	「H_SS」及「qPCR_ICU」中之5個共同元素：			
	FC:(1類/2類)	pfp	P值	CCS
1	1.362600286	619	0.000224402	H_SS
2	1.505671556	508	0.00078581	H_SS
3	1.385185238	626	0.001610638	H_SS
4	1.352905103	774	0.003730504	H_SS
5	1.366480602	578	0.003960953	H_SS

表13.b

	探針序列
	60 mer
1	TCACAAATAAAATTACATAGGAATCAACTCGAGACCAGCCTCCAACATGGCAAAGCCCTG
2	GTCTTTTGCCATATTAGTCTGTCTGGTCTCGATGCAAAAATCCTCAATAAAATACTGGCA
3	CTGATTCATGTTACAACATGAATGAACCTCGAGACTAGCCTGACCAACGTAGTGAAACCA
4	AAGGTGTTGAAAGAGAACACCCTAAAAATCGAACTCCTGACCTCAGGTGGAGGTCTGCCA
5	CACAAGAGAAAGCAAGAAAGATTTAAAATCGAACTCCTGACCGGGGGTGATCCATCAGCC

表13.c

	探針位置				
	Chr	**開始1**	**結束1**	**開始2**	**結束2**
1	5	112093744	112093775	112164631	112164662
2	18	539296	539327	586366	586397

3	6	35174538	35174569	35323548	35323579
4	9	92712460	92712491	92968821	92968852
5	10	72992599	72992630	73090827	73090858

表13.d

	4 kb序列位置				
	Chr	**開始1**	**結束1**	**開始2**	**結束2**
1	5	112089774	112093775	112164631	112168632
2	18	539296	543297	582396	586397
3	6	35170568	35174569	35319578	35323579
4	9	92708490	92712491	92968821	92972822
5	10	72988629	72992630	73086857	73090858

表13.e

	探針
1	Hg38_5_24973248_24983649_25162574_25164221_RF
2	Hg38_7_72710519_72716158_72886393_72889737_RR
3	Hg38_4_61417674_61420279_61603321_61613541_FF
4	Hg38_X_70847860_70854843_70935501_70940701_FF
5	Hg38_10_92119855_92132260_92208814_92210835_FR
6	Hg38_10_68133244_68143089_68154977_68161734_RF
7	Hg38_8_100518647_100527202_100566246_100573436_FR
8	Hg38_12_94767050_94775400_94927542_94930906_FR
9	Hg38_19_46541191_46545048_46610515_46614818_FF
10	Hg38_12_42074606_42080540_42126294_42137304_FF
11	Hg38_2_13599952_13609040_13777052_13783676_FR
12	Hg38_1_92634621_92645093_92816114_92818740_FF
13	Hg38_11_44414595_44424226_44592038_44600902_RR
14	Hg38_4_41259155_41269266_41430483_41435293_FR
15	Hg38_6_63302924_63308789_63399615_63406948_RF
16	Hg38_5_83038493_83043151_83194163_83201839_RR
17	Hg38_12_41928536_41933039_42126294_42137304_FF
18	Hg38_1_220076164_220080012_220133227_220135485_FR
19	Hg38_11_44553686_44560161_44592038_44600902_RR
20	Hg38_10_118536336_118552370_118688413_118690097_FF
21	Hg38_20_2492073_2494701_2607922_2616914_RF
22	Hg38_4_65379655_65403296_65477633_65486164_FR
23	Hg38_13_40166726_40179824_40323171_40327366_FR
24	Hg38_8_91499793_91509804_91549473_91558224_FF
25	Hg38_2_169803958_169808941_169880813_169885954_FF

26	Hg38_14_56302711_56310533_56523582_56531640_RR
27	Hg38_9_106695930_106705978_106918096_106923299_FR
28	Hg38_6_96956752_96964449_97164838_97174050_RR
29	Hg38_8_4152028_4162022_4182533_4190054_FF
30	Hg38_1_23317779_23324364_23388417_23393126_RF
31	Hg38_20_18124700_18129684_18141681_18142725_RR
32	Hg38_19_37532519_37537646_37734335_37739114_FR
33	Hg38_8_100380328_100387299_100566246_100573436_RR
34	Hg38_1_220397549_220404820_220583887_220590755_FR
35	Hg38_1_220556362_220569480_220583887_220590755_FR
36	Hg38_9_106918096_106923299_107019081_107028932_RF
37	Hg38_7_78342666_78352904_78461252_78471722_FF
38	Hg38_5_83018169_83019953_83194163_83201839_FR
39	Hg38_7_57120317_57122761_57287216_57294474_FF
40	Hg38_3_140876349_140880490_140923822_140931266_FR

表14.a1

	基因	RP
1	CDH10、PRDM9、CDH9	52
2	TYW1B、POM121、TRIM74	126
3	LPHN3、TECRL、EPHA5	69
4	TEX11、SLC7A3、SNX12	88
5	CPEB3、38412、BTAF1	127
6	MYPN、HERC4、ATOH7	134
7	ANKRD46、SNX31、RNF19A	112
8	NDUFA12、NR2C1、TMCC3	177
9	PPP5D1、CALM3、PTGIR	187
10	GXYLT1、YAF2、PPHLN1	160
11	FAM84A、TRIB2、NBAS	208
12	EVI5、RPL5、FAM69A	192
13	CD82、ALX4、TSPAN18	182
14	UCHL1、LIMCH1、APBB2	254
15	LGSN、FKBP1C、PTP4A1	258
16	TMEM167A、XRCC4、VCAN	216
17	GXYLT1、YAF2、PPHLN1	198
18	BPNT1、IARS2、RAB3GAP2	215
19	CD82、TSPAN18、ALX4	231
20	PRLHR、CACUL1、FAM204A	275

21	RP4-734P14.4、ZNF343、TMC2	305
22	EPHA5、TECRL、CENPC	251
23	FOXO1、COG6、MRPS31	288
24	SLC26A7、LRRC69、RUNX1T1	453
25	SSB、METTL5、UBR3	246
26	TMEM260、PELI2、OTX2	541
27	ZNF462、RP11-508N12.4、RAD23B	359
28	KLHL32、MMS22L、NDUFAF4	378
29	CSMD1、MYOM2、KBTBD11	327
30	HNRNPR、ZNF436、TCEA3	409
31	PET117、CSRP2BP、OVOL2	512
32	ZNF793、ZNF540、ZNF571、ZFP30、ZNF781、CTD-2528L19.4、ZNF607、ZNF573	440
33	RNF19A、ANKRD46、SNX31	369
34	MARK1、C1orf115、RAB3GAP2	398
35	MARK1、C1orf115、37316	459
36	ZNF462、RP11-508N12.4、RAD23B	437
37	MAGI2、PHTF2、TMEM60	429
38	TMEM167A、XRCC4、VCAN	482
39	ZNF479、ZNF716、AC118758.1	461
40	SLC25A36、SPSB4、TRIM42	520

表14.a2

	FC:(1類/2類)	pfp	P值	CCS
1	1.248362984	0	7.80613E-05	1
2	1.243630678	0	4.24314E-05	1
3	1.242303902	0	0.000101016	1
4	1.237445571	0	3.09684E-05	1
5	1.23697005	0	4.54925E-05	1
6	1.233014191	0	7.58171E-05	1
7	1.232403876	0	0.000102575	1
8	1.231712844	0	5.02649E-05	1
9	1.229257491	0	5.24871E-05	1
10	1.228476181	0	5.01227E-05	1
11	1.225619635	0	9.8463E-05	1
12	1.224598629	0	2.95823E-05	1
13	1.22454015	0	6.47719E-05	1
14	1.223781195	0	4.32218E-05	1
15	1.2223357	0	4.495E-06	1
16	1.222210481	0	9.76557E-05	1

17	1.221596892	0	9.69035E-05	1
18	1.221254864	0	6.41053E-05	1
19	1.220790096	0	8.81837E-05	1
20	1.220548479	0	3.72716E-05	1
21	1.22040349	0	7.80421E-05	1
22	1.219846003	0	3.64797E-05	1
23	1.218824964	0	5.33856E-05	1
24	1.217093275	0	0.000103853	1
25	1.217066766	0	7.97666E-05	1
26	1.214793337	0	0.00010348	1
27	1.213707267	0	8.94725E-05	1
28	1.212978086	0	5.42223E-05	1
29	1.211767306	0	7.04551E-05	1
30	1.211550308	0	4.06597E-05	1
31	1.210859097	0	2.82431E-06	1
32	1.210636001	0	6.67697E-05	1
33	1.210392694	0	8.35231E-05	1
34	1.209502819	0	3.32716E-05	1
35	1.207968315	0	2.62733E-05	1
36	1.207915759	0	9.27406E-05	1
37	1.206788233	0	6.78808E-05	1
38	1.206627152	0	0.000105129	1
39	1.205661004	0	6.91294E-05	1
40	1.205530632	0	3.67623E-05	1

表14.a3

	60 mer
1	TATATAAATGTCCTTGTGATCTACAGCTTCGAACTCCTGACCTCAAC AATTCACCCATCT
2	CCAGGCTGAAATTTAATGTCATAGGAAATCGAACTCCTGACCTCAG GTCACCCATCTGCC
3	AAAATAATATCACTATATGATGGTAGATTCGAACTCCTGACCTCAAC CAATTCACCTGCC
4	GGTGGACGAATTTCTTAAGCTCAGGAGTTCGACACATACACTCTTCC AAGACTAAACCAG
5	AATCAATATTCAATTCTAAGAACGCAAATCGAACTCCTGACCCCAA ATGATTCACCAGCC
6	ATCTTTTACTTTCTTTTCTTTTAGAACCTCGAACTCCTGACCTTATGC AATCCACTTGCC
7	AGACCCTGTCAGTTACCACATCTTAGCTTCGATCTCCTGACCTCGTA ATCTACCTGCCTC
8	ATACAAACCATGAAATGGTCTTAACATATCGAACTCCTGACCTCAAA TATTCCACCTGCC

9	GTGACATTTGGGAAAAGCATGCCACTCTTCGAACTCCTGACCTCAAA TAATCTACCTGCC
10	AATTAAAATATACAAAACTGAAAACTGTTCGATCTCCTGACTTTGTG ATCCTTCTGCCTC
11	AACAACAAAAAGCTGGACAAACTAAAAATCGAACTCCTGACCTCAA GTAATATCCCCGCC
12	TGCTTCATCAATTACTGAGACAGGGATGTCGAACTCCTGACCTCAGG TAATATGATGTCC
13	CATTATAAAAGACTCCATCTTAGCAGATTCGAACTCCTGACCTCAGG TCTTCTGCCAGTC
14	AATATTAACCATCACAGTTATTGACATATCGATCTCCTGACCTCAAG ATCTGTCTGCCTC
15	GAATATCTAGAAGAAATGGGTAAATTCCTCGAGTCCAGCCTGGCCA ATATAGTGAGACCC
16	TTTGTTTCTGTTTATTAAATACACTGAATCGAACTCCTGACCTCAGAT GAACTCCACCTG
17	AGCTTATTGTTTATTTGTATGGCAAAATTCGATCTCCTGACTTTGTGA TCCTTCTGCCTC
18	CTTTAATATATATTTACTAAAAGAGACTTCGAACTCCTGACCTCAGG ATTTGCCAGCCTC
19	TGTGTATGTTTGTATGATATTGGATAAATCGAACTCCTGACCTCAGG TCTTCTGCCAGTC
20	CCTGTTCTTGAACTTTAAGTGAATGGAATCGATCTCCTGACCTCAAG TGATACACTTGGC
21	TGAGGACTGCATGGTTCTGGCTTGATGATCGATCTCCTGACCTCGTT TAGGTTTGTAAAC
22	AAAGTGCCCAATTCTGTATATTTATGAGTCGATCTCTTGACCTCATG ATCACCCCTGCCT
23	GATCATGGGGATAAAGAGAGCCAAACTTTCGATCTCCTGACCTTGC GATGCCTTTTTAGT
24	GTTATTGTCCACTGGTAATTCTTTCTGCTCGAACTCCTGACCACAGAT TATCTGCCCACC
25	TATTACTGCTATCTAGTACATCTGTAATTCGATCTCCTGACCTAGGG ATCGCCCACCTCG
26	TAATTTGCACTTCCCTGATGGCTAATTGTCGATCTCTTGACCTTATGA TCTGCCCACCTC
27	TCAAAACTCACAAACTGAAAGAAATGTGTCGAACTCCTGACCTCCT GATTCATCCACCTC
28	GTGCTAATACACTTAATTCTTACAACAATCGAACTCCTGACCTCTAG TAATCCACCCACC
29	CCTTTGACTAACCATTCTGTATTTGCCTTCGATCTCCTGACCTCGTGT TCTACCTGCCTT
30	CTCATGAGAAGCATGCAACTTGGTTTCCTCGAGACCAGCCTGCAATA TGGTGAAATGCTG
31	GAAAATCTAGAAGAAATGGATAAATTCTTCGAGACCAGCTTGGCTG

	ACGTGGTGAAACCC
32	TTGGTGAGAAGTCATACCTCAATGTACATCGATCTCCTGACATGTGATCCACCCTCCTCA
33	AAGTCTACTTCCTCCCAGAGGTAAGCTGTCGATCTCCTGACCTCGTAATCTACCTGCCTC
34	TATTTATTCTACATATCCTGTGTGAAGTTCGATCTCCTGACCTCGTGATATACCCACCTC
35	CTGAGACTAAAAAACACTTGCTGAACTGTCGATCTCCTGACCTCGTGATATACCCACCTC
36	GGTCTTTGGTTAATCTCACTTTAATAAGTCGAACTCCTGACCTCCTGATTCATCCACCTC
37	TTACTCTTCACTAATTCCATGGAAAACTTCGAACTCCTGACCTCATTGATTCACCCACCT
38	ATATGAGGAACTTTTTCCCTCTTCCTATTCGAACTCCTGACCTCAGATGAACTCCACCTG
39	TCTTTATAGACACATGAAAGCAAATGAGTCGAACTCCTGACCTGAGGCAATCTGCTGGCC
40	ATATGTCAAATTGTTTAATGCTTAAACATCGATCTCCTGACCTTGTGAACCTCCCACCTC

表14.a4

	探針序列	探針位置				
	Chr	**開始1**	**結束1**	**開始2**	**結束2**	**Chr**
1	5	24973248	24973279	25164190	25164221	5
2	7	72710519	72710550	72886393	72886424	7
3	4	61420248	61420279	61613510	61613541	4
4	X	70854812	70854843	70940670	70940701	X
5	10	92132229	92132260	92208814	92208845	10
6	10	68133244	68133275	68161703	68161734	10
7	8	100527171	100527202	100566246	100566277	8
8	12	94775369	94775400	94927542	94927573	12
9	19	46545017	46545048	46614787	46614818	19
10	12	42080509	42080540	42137273	42137304	12
11	2	13609009	13609040	13777052	13777083	2
12	1	92645062	92645093	92818709	92818740	1
13	11	44414595	44414626	44592038	44592069	11
14	4	41269235	41269266	41430483	41430514	4
15	6	63302924	63302955	63406917	63406948	6
16	5	83038493	83038524	83194163	83194194	5
17	12	41933008	41933039	42137273	42137304	12
18	1	220079981	220080012	220133227	220133258	1
19	11	44553686	44553717	44592038	44592069	11

20	10	118552339	118552370	118690066	118690097	10
21	20	2492073	2492104	2616883	2616914	20
22	4	65403265	65403296	65477633	65477664	4
23	13	40179793	40179824	40323171	40323202	13
24	8	91509773	91509804	91558193	91558224	8
25	2	169808910	169808941	169885923	169885954	2
26	14	56302711	56302742	56523582	56523613	14
27	9	106705947	106705978	106918096	106918127	9
28	6	96956752	96956783	97164838	97164869	6
29	8	4161991	4162022	4190023	4190054	8
30	1	23317779	23317810	23393095	23393126	1
31	20	18124700	18124731	18141681	18141712	20
32	19	37537615	37537646	37734335	37734366	19
33	8	100380328	100380359	100566246	100566277	8
34	1	220404789	220404820	220583887	220583918	1
35	1	220569449	220569480	220583887	220583918	1
36	9	106918096	106918127	107028901	107028932	9
37	7	78352873	78352904	78471691	78471722	7
38	5	83019922	83019953	83194163	83194194	5
39	7	57122730	57122761	57294443	57294474	7
40	3	140880459	140880490	140923822	140923853	3

表14.a5

	4 kb序列位置			
	開始1	**結束1**	**開始2**	**結束2**
1	24973248	24977249	25160220	25164221
2	72710519	72714520	72886393	72890394
3	61416278	61420279	61609540	61613541
4	70850842	70854843	70936700	70940701
5	92128259	92132260	92208814	92212815
6	68133244	68137245	68157733	68161734
7	100523201	100527202	100566246	100570247
8	94771399	94775400	94927542	94931543
9	46541047	46545048	46610817	46614818
10	42076539	42080540	42133303	42137304
11	13605039	13609040	13777052	13781053
12	92641092	92645093	92814739	92818740
13	44414595	44418596	44592038	44596039
14	41265265	41269266	41430483	41434484
15	63302924	63306925	63402947	63406948
16	83038493	83042494	83194163	83198164

17	41929038	41933039	42133303	42137304
18	220076011	220080012	220133227	220137228
19	44553686	44557687	44592038	44596039
20	118548369	118552370	118686096	118690097
21	2492073	2496074	2612913	2616914
22	65399295	65403296	65477633	65481634
23	40175823	40179824	40323171	40327172
24	91505803	91509804	91554223	91558224
25	169804940	169808941	169881953	169885954
26	56302711	56306712	56523582	56527583
27	106701977	106705978	106918096	106922097
28	96956752	96960753	97164838	97168839
29	4158021	4162022	4186053	4190054
30	23317779	23321780	23389125	23393126
31	18124700	18128701	18141681	18145682
32	37533645	37537646	37734335	37738336
33	100380328	100384329	100566246	100570247
34	220400819	220404820	220583887	220587888
35	220565479	220569480	220583887	220587888
36	106918096	106922097	107024931	107028932
37	78348903	78352904	78467721	78471722
38	83015952	83019953	83194163	83198164
39	57118760	57122761	57290473	57294474
40	140876489	140880490	140923822	140927823

表14.a6

	qPCR引子集	
	探針	qPCR引子ID
1	Hg38_5_24973248_24983649_25162574_25164221_RF	OBD183-q1001
2	Hg38_7_72710519_72716158_72886393_72889737_RR	OBD183-q1005
3	Hg38_4_61417674_61420279_61603321_61613541_FF	OBD183-q1009
4	Hg38_X_70847860_70854843_70935501_70940701_FF	OBD183-q1013
5	Hg38_10_92119855_92132260_92208814_92210835_FR	OBD183-q1017
6	Hg38_10_68133244_68143089_68154977_68161734_RF	OBD183-q1021
7	Hg38_8_100518647_100527202_100566246_100573436_FR	OBD183-q1025
8	Hg38_12_94767050_94775400_94927542_94930906_FR	OBD183-q1029
9	Hg38_19_46541191_46545048_46610515_46614818_FF	OBD183-q1033
10	Hg38_12_42074606_42080540_42126294_42137304_FF	OBD183-q1037
11	Hg38_2_13599952_13609040_13777052_13783676_FR	OBD183-q1041
12	Hg38_1_92634621_92645093_92816114_92818740_FF	OBD183-q1045
13	Hg38_11_44414595_44424226_44592038_44600902_RR	OBD183-q1049
14	Hg38_4_41259155_41269266_41430483_41435293_FR	OBD183-q1053

15	Hg38_6_63302924_63308789_63399615_63406948_RF	OBD183-q1057
16	Hg38_5_83038493_83043151_83194163_83201839_RR	OBD183-q1061
17	Hg38_12_41928536_41933039_42126294_42137304_FF	OBD183-q1065
18	Hg38_1_220076164_220080012_220133227_220135485_FR	OBD183-q1069
19	Hg38_11_44553686_44560161_44592038_44600902_RR	OBD183-q1073
20	Hg38_10_118536336_118552370_118688413_118690097_FF	OBD183-q1077
21	Hg38_20_2492073_2494701_2607922_2616914_RF	OBD183-q1081
22	Hg38_4_65379655_65403296_65477633_65486164_FR	OBD183-q1085
23	Hg38_13_40166726_40179824_40323171_40327366_FR	OBD183-q1089
24	Hg38_8_91499793_91509804_91549473_91558224_FF	OBD183-q1093
25	Hg38_2_169803958_169808941_169880813_169885954_FF	OBD183-q1097
26	Hg38_14_56302711_56310533_56523582_56531640_RR	OBD183-q1101
27	Hg38_9_106695930_106705978_106918096_106923299_FR	OBD183-q1105
28	Hg38_6_96956752_96964449_97164838_97174050_RR	OBD183-q1109
29	Hg38_8_4152028_4162022_4182533_4190054_FF	OBD183-q1113
30	Hg38_1_23317779_23324364_23388417_23393126_RF	OBD183-q1117
31	Hg38_20_18124700_18129684_18141681_18142725_RR	OBD183-q1121
32	Hg38_19_37532519_37537646_37734335_37739114_FR	OBD183-q1125
33	Hg38_8_100380328_100387299_100566246_100573436_RR	OBD183-q1129
34	Hg38_1_220397549_220404820_220583887_220590755_FR	OBD183-q1133
35	Hg38_1_220556362_220569480_220583887_220590755_FR	OBD183-q1137
36	Hg38_9_106918096_106923299_107019081_107028932_RF	OBD183-q1141
37	Hg38_7_78342666_78352904_78461252_78471722_FF	OBD183-q1145
38	Hg38_5_83018169_83019953_83194163_83201839_FR	OBD183-q1149
39	Hg38_7_57120317_57122761_57287216_57294474_FF	OBD183-q1153
40	Hg38_3_140876349_140880490_140923822_140931266_FR	OBD183-q1157

表14.a7

	qPCR引子集		
	序列	qPCR引子ID	qPCR反向序列
1	GAAATCAATGTTCATAAGTCATTT	OBD183-q1003	AAGGCTGAATACATTGGCATTGTT
2	ACTACAGGCGCACGCCACCAT	OBD183-q1007	ATTTAGATTTACACAAAGGAA
3	CTTTTTAATTTCCTTTAATCTGA	OBD183-q1011	TAAAAATTGTTGTGTGTTTAAAA
4	GGCAACAGGCAAGACCCTGTTTCA	OBD183-q1015	TTGTACCTCTGGTAGAATTCGGCT
5	ACCATATCTCAAGTCAAACTAGT	OBD183-q1019	AGGAATTATGGGAGGACAAACAA
6	TCCTGAGTGTGCAAGAGACTG	OBD183-q1023	TCTATATGCTTTCTACCTTTG
7	AACTAAGTCTGGCCT	OBD183-q1027	TAAGAAGTCAGCTTGGGC

	ATTAAC		CTG
8	CTCTGTTCAAAAAAG GAAGGCTC	OBD183-q1031	GGATAAACTATAGGTGAA TATTA
9	GTTCCCTTCTCTGACT GTCACTTCCC	OBD183-q1035	CAGGAGTTTGAGACCAGC CTGGCCAA
10	TTTTAAACTTTCCTCA GAAGCCAT	OBD183-q1039	AAAAGTAATTTTCATTTC AAAATG
11	TTTGACAAAACCAGA AAAAAAATCA	OBD183-q1043	TGCACAAGGAGAAAACA CCAAGGAG
12	GTTCTATCTTCATAAA TCTTC	OBD183-q1047	ACCCCTAATCCACTGCAA ATC
13	ATGATCCTGTGGCAC ACATACCCA	OBD183-q1051	GGTGTTGCAGTTTCAGAA AGTCCG
14	TGCCTTTCCCAGTCCA CTGACTCAAG	OBD183-q1055	TTTCTTCATCATATTTAAG TTCTGAA
15	TAAAGGGGATTATCA CCACCGATCT	OBD183-q1059	GTCATGACACCAGTATAT TTTTAAA
16	TAGGGAATAAAGATT GTCAGGTTAA	OBD183-q1063	ATAAAGAATAAATAAATT GAAAGTA
17	GCTCCTGAACGCCCC CGCGACT	OBD183-q1067	TCAAAATGTCCAAGATAG GAGG
18	AACCGCATCAACACA GTGTTA	OBD183-q1071	AGCAGGCATTGTGTTAGA CCC
19	ACCTAGAGAAACAGA TTAAGT	OBD183-q1075	GTGGGGCATTCAGCAAAG GGC
20	GTAGTCTGACGAATT GTTACA	OBD183-q1079	AACCTATAACATCATACT CAG
21	CTGAGCAGCAATGCT GTTTTAT	OBD183-q1083	CTGGGGGCATGGTTTGCA AGGG
22	AATAATTTGCAATATT TTATAA	OBD183-q1087	ATTTCCTTATTTGATACTA GCA
23	AGGACAGATGTGGAA AATAAGCCCA	OBD183-q1091	TTTAAATCCAACAATGTA TAAAAGG
24	TGACCATTATTTTTTC AAATATTT	OBD183-q1095	CTCCAACCCTTAGACGGA AACCAT
25	GATTGGTTAACTTTAT TAGGACTTA	OBD183-q1099	AAAAGTAGGACAGTTGA AATAAAAA
26	TTACCTCTTGAGGAAT GCCAAAC	OBD183-q1103	AAATTCCTGTGATTAAGT GTTTG
27	ATTGCTCTGAGGTCA AGAACCTTG	OBD183-q1107	AATTTTAACTCATATATG GGCATA
28	GCAAGAAACATTAGA ACTGGGGAAA	OBD183-q1111	CTTTTCTCTATGTAGCTAT TACCTT
29	CCTTTCGTTTAAATAT TCAGTAAGT	OBD183-q1115	GTACGTAATACATAGCCT TGAATCA

30	GTAGAATTAGTGGGAGCCCTGAG	OBD183-q1119	CCACCTCCCAGGTTCAAGCGATT
31	GAGAAGAATCAAATAGATGCA	OBD183-q1123	GACAAGAGTCTCGCTCTGTCG
32	TGAATGTTTTTTTTGTGGGAA	OBD183-q1127	AAGACTGTTTGGCATATAGCG
33	CAGGTTTATAGACTAAGCTTGAAGG	OBD183-q1131	CTGTAGTCCCAGCTATTTGGGAGGC
34	TTCCTGGGCTAGTTGTATGGGCTGGT	OBD183-q1135	TTACATTTCAAATTTATGAACTATGA
35	TAAGGAGAGTTTTTTAAAAAA	OBD183-q1139	TTTCAAATTTATGAACTATGA
36	GAGATGTATCCAGATTGATGGAAA	OBD183-q1143	ATGGGCATATGCCCTCCAAATTTA
37	CACTAGGTTGAGCTTCTCAAAATGCA	OBD183-q1147	ATCACCTCTGGGGATTTTATTTATGA
38	ATTTTAACCTGATAGTTTAAAC	OBD183-q1151	AATAAGAAAGTTTTACCTATAT
39	TTTTCTATGCAACTGAAGTCATTT	OBD183-q1155	GAGATTGAGACCATCCTGGCCAAC
40	TATAAACGTTGTGAAAGACCAAGGA	OBD183-q1159	GAAGAAAGTACATGGCACCTTCTGC

表14.a8

	qPCR引子集	
	探針ID	探針序列
1	OBD183-p1001	TCCTTGTGATCTACAGCTTCGAACTCCTGACCTCAACAAT
2	OBD183-p1005	ATTTAATGTCATAGGAAATCGAACTCCTGACCTCAGGTCA
3	OBD183-p1009	CACTATATGATGGTAGATTCGAACTCCTGACCTCAACCAA
4	OBD183-p1013	TTTCTTAAGCTCAGGAGTTCGACACATACACTCTTCCAAG
5	OBD183-p1017	CAATTCTAAGAACGCAAATCGAACTCCTGACCCCAAATGA
6	OBD183-p1021	TTCTTTTCTTTTAGAACCTCGAACTCCTGACCTTATGCAA
7	OBD183-p1025	AGTTACCACATCTTAGCTTCGATCTCCTGACCTCGTAATC
8	OBD183-p1029	TGAAATGGTCTTAACATATCGAACTCCTGACCTCAAATAT
9	OBD183-p1033	GGAAAAGCATGCCACTCTTCGAACTCCTGACCTCAAATAA

10	OBD183-p1037	TACAAAACTGAAAACTGTTCGATCTCCTG ACTTTGTGATC
11	OBD183-p1041	AGCTGGACAAACTAAAAATCGAACTCCT GACCTCAAGTAA
12	OBD183-p1045	ATTACTGAGACAGGGATGTCGAACTCCTG ACCTCAGGTAA
13	OBD183-p1049	GACTCCATCTTAGCAGATTCGAACTCCTG ACCTCAGGTCT
14	OBD183-p1053	ATCACAGTTATTGACATATCGATCTCCTG ACCTCAAGATC
15	OBD183-p1057	AAGAAATGGGTAAATTCCTCGAGTCCAG CCTGGCCAATAT
16	OBD183-p1061	TTTATTAAATACACTGAATCGAACTCCTG ACCTCAGATGA
17	OBD183-p1065	TTATTTGTATGGCAAAATTCGATCTCCTG ACTTTGTGATC
18	OBD183-p1069	TATTTACTAAAAGAGACTTCGAACTCCTG ACCTCAGGATT
19	OBD183-p1073	TGTATGATATTGGATAAATCGAACTCCTG ACCTCAGGTCT
20	OBD183-p1077	AACTTTAAGTGAATGGAATCGATCTCCTG ACCTCAAGTGA
21	OBD183-p1081	ATGGTTCTGGCTTGATGATCGATCTCCTG ACCTCGTTTAG
22	OBD183-p1085	ATTCTGTATATTTATGAGTCGATCTCTTG ACCTCATGATC
23	OBD183-p1089	ATAAAGAGAGCCAAACTTTCGATCTCCTG ACCTTGCGATG
24	OBD183-p1093	ACTGGTAATTCTTTCTGCTCGAACTCCTG ACCACAGATTA
25	OBD183-p1097	ATCTAGTACATCTGTAATTCGATCTCCTG ACCTAGGGATC
26	OBD183-p1101	TTCCCTGATGGCTAATTGTCGATCTCTTG ACCTTATGATC
27	OBD183-p1105	CAAACTGAAAGAAATGTGTCGAACTCCT GACCTCCTGATT
28	OBD183-p1109	ACTTAATTCTTACAACAATCGAACTCCTG ACCTCTAGTAA
29	OBD183-p1113	ACCATTCTGTATTTGCCTTCGATCTCCTGA CCTCGTGTTC
30	OBD183-p1117	GCATGCAACTTGGTTTCCTCGAGACCAGC CTGCAATATGG
31	OBD183-p1121	AAGAAATGGATAAATTCTTCGAGACCAG CTTGGCTGACGT
32	OBD183-p1125	GTCATACCTCAATGTACATCGATCTCCTG

		ACATGTGATCC
33	OBD183-p1129	CCTCCCAGAGGTAAGCTGTCGATCTCCTG ACCTCGTAATC
34	OBD183-p1133	ACATATCCTGTGTGAAGTTCGATCTCCTG ACCTCGTGATA
35	OBD183-p1137	AAAACACTTGCTGAACTGTCGATCTCCTG ACCTCGTGATA
36	OBD183-p1141	TAATCTCACTTTAATAAGTCGAACTCCTG ACCTCCTGATT
37	OBD183-p1145	CTAATTCCATGGAAAACTTCGAACTCCTG ACCTCATTGAT
38	OBD183-p1149	CTTTTTCCCTCTTCCTATTCGAACTCCTGA CCTCAGATGA
39	OBD183-p1153	CACATGAAAGCAAATGAGTCGAACTCCT GACCTGAGGCAA
40	OBD183-p1157	TTGTTTAATGCTTAAACATCGATCTCCTG ACCTTGTGAAC

表14.a9

	qPCR引子集	
	探針ID	探針序列
1	OBD183-p1003	ATTGTTGAGGTCAGGAGTTCGAAGCTGTA GATCACAAGGA
2	OBD183-p1007	TGACCTGAGGTCAGGAGTTCGATTTCCTAT GACATTAAAT
3	OBD183-p1011	TTGGTTGAGGTCAGGAGTTCGAATCTACC ATCATATAGTG
4	OBD183-p1015	CTTGGAAGAGTGTATGTGTCGAACTCCTG AGCTTAAGAAA
5	OBD183-p1019	TCATTTGGGGTCAGGAGTTCGATTTGCGTT CTTAGAATTG
6	OBD183-p1023	TTGCATAAGGTCAGGAGTTCGAGGTTCTA AAAGAAAAGAA
7	OBD183-p1027	GATTACGAGGTCAGGAGATCGAAGCTAAG ATGTGGTAACT
8	OBD183-p1031	ATATTTGAGGTCAGGAGTTCGATATGTTA AGACCATTTCA
9	OBD183-p1035	TTATTTGAGGTCAGGAGTTCGAAGAGTGG CATGCTTTTCC
10	OBD183-p1039	GATCACAAAGTCAGGAGATCGAACAGTTT TCAGTTTTGTA
11	OBD183-p1043	TTACTTGAGGTCAGGAGTTCGATTTTTAGT TTGTCCAGCT
12	OBD183-p1047	TTACCTGAGGTCAGGAGTTCGACATCCCT

		GTCTCAGTAAT
13	OBD183-p1051	AGACCTGAGGTCAGGAGTTCGAATCTGCT AAGATGGAGTC
14	OBD183-p1055	GATCTTGAGGTCAGGAGATCGATATGTCA ATAACTGTGAT
15	OBD183-p1059	ATATTGGCCAGGCTGGACTCGAGGAATTT ACCCATTTCTT
16	OBD183-p1063	TCATCTGAGGTCAGGAGTTCGATTCAGTGT ATTTAATAAA
17	OBD183-p1067	GATCACAAAGTCAGGAGATCGAATTTTGC CATACAAATAA
18	OBD183-p1071	AATCCTGAGGTCAGGAGTTCGAAGTCTCT TTTAGTAAATA
19	OBD183-p1075	AGACCTGAGGTCAGGAGTTCGATTTATCC AATATCATACA
20	OBD183-p1079	TCACTTGAGGTCAGGAGATCGATTCCATTC ACTTAAAGTT
21	OBD183-p1083	CTAAACGAGGTCAGGAGATCGATCATCAA GCCAGAACCAT
22	OBD183-p1087	GATCATGAGGTCAAGAGATCGACTCATAA ATATACAGAAT
23	OBD183-p1091	CATCGCAAGGTCAGGAGATCGAAAGTTTG GCTCTCTTTAT
24	OBD183-p1095	TAATCTGTGGTCAGGAGTTCGAGCAGAAA GAATTACCAGT
25	OBD183-p1099	GATCCCTAGGTCAGGAGATCGAATTACAG ATGTACTAGAT
26	OBD183-p1103	GATCATAAGGTCAAGAGATCGACAATTAG CCATCAGGGAA
27	OBD183-p1107	AATCAGGAGGTCAGGAGTTCGACACATTT CTTTCAGTTTG
28	OBD183-p1111	TTACTAGAGGTCAGGAGTTCGATTGTTGTA AGAATTAAGT
29	OBD183-p1115	GAACACGAGGTCAGGAGATCGAAGGCAA ATACAGAATGGT
30	OBD183-p1119	CCATATTGCAGGCTGGTCTCGAGGAAACC AAGTTGCATGC
31	OBD183-p1123	ACGTCAGCCAAGCTGGTCTCGAAGAATTT ATCCATTTCTT
32	OBD183-p1127	GGATCACATGTCAGGAGATCGATGTACAT TGAGGTATGAC
33	OBD183-p1131	GATTACGAGGTCAGGAGATCGACAGCTTA CCTCTGGGAGG
34	OBD183-p1135	TATCACGAGGTCAGGAGATCGAACTTCAC ACAGGATATGT

35	OBD183-p1139	TATCACGAGGTCAGGAGATCGACAGTTCA GCAAGTGTTTT
36	OBD183-p1143	AATCAGGAGGTCAGGAGTTCGACTTATTA AAGTGAGATTA
37	OBD183-p1147	ATCAATGAGGTCAGGAGTTCGAAGTTTTC CATGGAATTAG
38	OBD183-p1151	TCATCTGAGGTCAGGAGTTCGAATAGGAA GAGGGAAAAAG
39	OBD183-p1155	TTGCCTCAGGTCAGGAGTTCGACTCATTTG CTTTCATGTG
40	OBD183-p1159	GTTCACAAGGTCAGGAGATCGATGTTTAA GCATTAAACAA

表14.a10

41	Hg38_2_13572319_13584069_13777052_13783676_RR
42	Hg38_11_61654302_61657376_61791076_61796129_RF
43	Hg38_2_27449755_27453484_27499977_27502563_RR
44	Hg38_1_166345772_166352895_166479691_166484996_RF
45	Hg38_3_122215059_122223774_122357299_122361064_FR
46	Hg38_9_104713365_104717628_104860975_104864532_FR
47	Hg38_8_113409304_113413871_113438847_113446082_RF
48	Hg38_11_44592038_44600902_44834704_44845205_RF
49	Hg38_6_35168716_35174569_35319888_35323579_FF
50	Hg38_5_112081094_112093775_112164631_112171972_FR
51	Hg38_22_38362202_38364548_38442867_38446753_FF
52	Hg38_21_10469195_10476377_10561289_10564307_FF
53	Hg38_10_72986605_72992630_73084937_73090858_FF
54	Hg38_6_96904639_96916143_97164838_97174050_RR
55	Hg38_2_13749083_13760607_13777052_13783676_FR
56	Hg38_7_38195275_38200060_38339555_38347520_RF
57	Hg38_6_96904639_96916143_97164838_97174050_FR
58	Hg38_12_121858404_121860997_122071931_122075862_RF
59	Hg38_16_73137152_73141460_73235290_73240438_RR
60	Hg38_22_32150471_32156851_32349194_32357683_FF
61	Hg38_16_73147488_73153243_73235290_73240438_FR
62	Hg38_5_55433718_55442449_55494916_55505697_RF
63	Hg38_9_77019945_77021308_77093295_77095880_FR
64	Hg38_1_220583887_220590755_220691405_220698377_RF
65	Hg38_15_65682913_65689631_65754053_65760294_RR
66	Hg38_1_220583887_220590755_220623254_220625991_RF
67	Hg38_12_42093320_42097578_42126294_42137304_FF
68	Hg38_10_29911467_29915859_30105543_30110107_FR

69	Hg38_3_115079613_115090182_115274886_115279463_FR
70	Hg38_2_130327268_130331286_130407716_130423252_FF
71	Hg38_6_6906046_6910447_7167574_7173314_FF
72	Hg38_18_54377256_54387140_54418492_54423189_RF
73	Hg38_9_96648122_96650296_96800444_96805664_RR
74	Hg38_20_25436043_25440608_25559938_25567438_RF
75	Hg38_9_92703705_92712491_92968821_92970651_FR
76	Hg38_5_118079546_118087664_118263492_118280818_FR
77	Hg38_X_458696_461140_599978_602768_RF
78	Hg38_19_22089092_22092256_22115487_22122996_FF
79	Hg38_13_40199951_40204969_40323171_40327366_FR

表14.b1

41	TRIB2、FAM84A、NBAS	456
42	DAGLA、MYRF、TMEM258、FEN1、FADS2	602
43	IFT172、FNDC4、GCKR	484
44	FAM78B、POGK、TADA1	591
45	CASR、CSTA、CCDC58	436
46	NIPSNAP3A、NIPSNAP3B、ABCA1	465
47	CSMD3、TRPS1、EIF3H	467
48	CD82、TSPAN18、TP53I11	518
49	SCUBE3、ZNF76、DEF6	626
50	EPB41L4A、NREP、APC	619
51	CSNK1E、KCNJ4、KDELR3	556
52	TPTE、CH507-396I9.6、SMIM11	898
53	P4HA1、NUDT13、PLA2G12B	578
54	KLHL32、MMS22L、NDUFAF4	554
55	FAM84A、TRIB2、NBAS	593
56	STARD3NL、AMPH、SFRP4	675
57	KLHL32、MMS22L、NDUFAF4	656
58	HPD、PSMD9、RP11-87C12.2、WDR66、BCL7A	643
59	ZFHX3、AC004158.1、PMFBP1	802
60	C22orf42、RFPL2、AL008723.1、SLC5A4、RFPL3	691
61	ZFHX3、AC004158.1、PMFBP1	783
62	PPAP2A、SKIV2L2、SLC38A9	731
63	FOXB2、VPS13A、PRUNE2	661
64	MARK1、C1orf115、37316	707
65	DENND4A、RAB11A、SLC24A1	1158
66	MARK1、C1orf115、37316	796

67	GXYLT1、YAF2、PPHLN1	673
68	KIAA1462、SVIL、MTPAP	819
69	ZBTB20、AC069063.1、AC069063.2	955
70	CCDC115、IMP4、PTPN18	687
71	RREB1、SSR1、CAGE1	768
72	C18orf54、STARD6、POLI	988
73	AAED1、ZNF510、ZNF782	1117
74	GINS1、NINL、ABHD12	1082
75	BICD2、ZNF484、FGD3	774
76	DTWD2、DMXL1、TNFAIP8	1033
77	SHOX、PPP2R3B、GTPBP6	1231
78	ZNF257、ZNF676、ZNF208	889
79	FOXO1、MRPS31、COG6	1039

表14.b2

41	1.205449904	0	0.000104438	1
42	1.205372719	0	7.99093E-05	1
43	1.204948353	0	4.47347E-05	1
44	1.204620445	0	3.14205E-05	1
45	1.204574665	0	4.51801E-05	1
46	1.204393887	0	2.18724E-05	1
47	1.204307036	0	4.76577E-05	1
48	1.203827073	0	4.13664E-05	1
49	1.202650814	0	2.19116E-05	1
50	1.202454994	0	1.90202E-05	1
51	1.20235937	0	5.29631E-05	1
52	1.20221134	0	1.19812E-05	1
53	1.202189482	0	5.09102E-05	1
54	1.202184391	0	5.95453E-05	1
55	1.201245724	0	8.13727E-05	1
56	1.20083295	0	2.17255E-05	1
57	1.200676807	0	4.74233E-05	1
58	1.199713596	0	3.1358E-05	1
59	1.197509015	0	4.49332E-05	1
60	1.196752615	0	0.000101486	1
61	1.196748478	0	5.71207E-05	1
62	1.196153322	0	5.44167E-05	1
63	1.19597974	0	2.84553E-05	1
64	1.19562989	0	5.25832E-05	1
65	1.19544322	0	4.79492E-05	1

66	1.193546721	0	3.23423E-05	1
67	1.193220497	0	8.08471E-05	1
68	1.193026967	0	8.6263E-05	1
69	1.192701056	0	9.93345E-05	1
70	1.192674461	0	7.33223E-05	1
71	1.19262132	0	5.17657E-05	1
72	1.192368785	0	1.22061E-05	1
73	1.192299516	0	4.96742E-06	1
74	1.192008806	0	1.20838E-05	1
75	1.191854775	0	5.93788E-05	1
76	1.190959743	0	3.29164E-05	1
77	1.190632952	0	1.28636E-05	1
78	1.190556313	0	8.19261E-05	1
79	1.190475822	0	2.47832E-05	1

表14.b3

41	CCAGTTACAACTGAGTCACTAAGGCTAGTCGAACTCCTGACCTCAAGTAATATCCCCGCC
42	GTGGACCTCATCCAGAAGCACAAGAGCATCGAACTCCTGACCTTAAGCAACCTACCTGCC
43	CTGAATCTGGACCTTGTCAAGGAAGCAATCGAACTCCTGACATCAGGTGCTCCACCTGCC
44	TTCCCCAAGCTTGAAATTATCTCCAGCTTCGAACTCCTGACCTTATGATGCACCTGCCTT
45	AAACTTCAGACAATATTCCTGATGAACATCGAACTCCTGGGCTCTTGATCCTTCCGACTC
46	AATTTTAGATCAATATCCCTGATGAACATCGAACTCCTGACCTCAAGTGATTTTCCCGCC
47	GATGTAACTATGTTAAGGATGTTGAGATTCGAACTCCTGACCTCGTGAAGCACCCCTCTC
48	ATTTAGTCCTGCATTTGGGCATTCAAAGTCGAACTCCTGACCTCAGGTCTTCTGCCAGTC
49	CTGATTCATGTTACAACATGAATGAACCTCGAGACTAGCCTGACCAACGTAGTGAAACCA
50	TCACAAATAAAATTACATAGGAATCAACTCGAGACCAGCCTCCAACATGGCAAAGCCCTG
51	GAATGAGATCATGTATTTTGTGGGAACATCGAACTCCTGACCCTCATGTGATCCATCCAC
52	GAAATTAAAATACCAAAAGAATTCAAGATCGAACTCCTGACCTCCAGTAAACCACCCGCC
53	CACAAGAGAAAGCAAGAAAGATTTAAAATCGAACTCCTGACCGGGGGTGATCCATCAGCC
54	TTTTCTGGATGAACTTTATTATCAGTGATCGAACTCCTGACCTCTAGT

	AATCCACCCACC
55	GATTCTGGGTAAAGGGTATCATTGTAAGTCGAACTCCTGACCTCAAG TAATATCCCCGCC
56	AGTACTCCTAAAGATGGGGGAATGCAAATCGAACTCCTGACCCCAT GTGATCCACTTGCC
57	GACAAAAAAGTAGAGAGACATACAGGAATCGAACTCCTGACCTCTA GTAATCCACCCACC
58	GCTGCCCGCTACTCAGCAGGAGGGGAAGTCGAACTCCTGACCTCAA GTATTTGCCTGCCT
59	CTGCAGTGTAGGTATCTACAAAGCAGTATCGATCTCCTGACCTCATC ATCCTCCTGCCTC
60	GGTTGTTTCATATTTATGGAGTATACCCTCGAGACCAGCCTGATGGG TGAAACCCCATCT
61	CTCTCAACTTTGGATGTAAGAATCATCTTCGATCTCCTGACCTCATCA TCCTCCTGCCTC
62	TAAAAGTGAACAAGGAAAATACCACAAGTCGATCTCCTGACCTCAT GATTCTCCTGCCTC
63	AAAGCCTCATTCGCTGGTAAATTGGAAGTCGAACTCCTGACCTCAGG AGATCCATCTGCC
64	CTTCACTTCCTGAAGCTTCAACTTCATGTCGATCTCCTGACCTCGTGA TATACCCACCTC
65	CTGTTCCCATATAAGATGGTAAACTTCATCGAACGCCTGACCTCAGT TGATCTACCCACC
66	CTTGCGCTCCATCTCTTCAGATACATGTTCGATCTCCTGACCTCGTGA TATACCCACCTC
67	AATTGCTTCCATATATACAATGATCTGGTCGATCTCCTGACTTTGTGA TCCTTCTGCCTC
68	GCAGTGAAATGTTTGATTGGCCCACACTTCGAACTCCTGACCTCAGA TGATTCATCTGCC
69	GATTCCGACATATAATAATCAACTAAAGTCGAACTCCTGACCTTGGC ATCTGCCCACCTT
70	CTCCCTGAAAGGATCAGTAACTTCAACATCGATCTCCTGATCTCATG ATCCACTTGCCTT
71	GCCTTCCATGCATCTTTTTTTTTTTTTTTCGAACTCCTGACCTAAGGTG ATCCAAACCGC
72	GGAGTTTTTAAATGAAAGGAAACAGGAATCGAACTCCTGACCTCAG GTGGTCATATCATC
73	GGTGGGAGGACTTCTTGAGTGTAGGAGTTCGACACATACACTCTCAC AAGACTAAACCAG
74	GAGCACCACACAGGATAATACCAAAAAATCGATCTCCTGACCTTGT GATCTCACCTTGGC
75	AAGGTGTTGAAAGAGAACACCCTAAAAATCGAACTCCTGACCTCAG GTGGAGGTCTGCCA
76	TTTTCATAACCTAATATCAAAAGTGACATCGAACTCTTGACATCATG ATCTGCCTGCCTC

77	GAGACGGGTGGATCATGACTCCAGGAGATCGAACTCCTGACCGCAG GTTACCTGCCCGAG
78	AAGGTGACTTATTAGAAAACTAAAAACCTCGAGACCATCCTGACCA ACATGTTGAAACCC
79	TGCTAAGGCCATGACCACAGGAGGAAGGTCGATCTCCTGACCTTGC GATGCCTTTTTAGT

表14.b4

41	2	13572319	13572350	13777052	13777083	2
42	11	61654302	61654333	61796098	61796129	11
43	2	27449755	27449786	27499977	27500008	2
44	1	166345772	166345803	166484965	166484996	1
45	3	122223743	122223774	122357299	122357330	3
46	9	104717597	104717628	104860975	104861006	9
47	8	113409304	113409335	113446051	113446082	8
48	11	44592038	44592069	44845174	44845205	11
49	6	35174538	35174569	35323548	35323579	6
50	5	112093744	112093775	112164631	112164662	5
51	22	38364517	38364548	38446722	38446753	22
52	21	10476346	10476377	10564276	10564307	21
53	10	72992599	72992630	73090827	73090858	10
54	6	96904639	96904670	97164838	97164869	6
55	2	13760576	13760607	13777052	13777083	2
56	7	38195275	38195306	38347489	38347520	7
57	6	96916112	96916143	97164838	97164869	6
58	12	121858404	121858435	122075831	122075862	12
59	16	73137152	73137183	73235290	73235321	16
60	22	32156820	32156851	32357652	32357683	22
61	16	73153212	73153243	73235290	73235321	16
62	5	55433718	55433749	55505666	55505697	5
63	9	77021277	77021308	77093295	77093326	9
64	1	220583887	220583918	220698346	220698377	1
65	15	65682913	65682944	65754053	65754084	15
66	1	220583887	220583918	220625960	220625991	1
67	12	42097547	42097578	42137273	42137304	12
68	10	29915828	29915859	30105543	30105574	10
69	3	115090151	115090182	115274886	115274917	3
70	2	130331255	130331286	130423221	130423252	2
71	6	6910416	6910447	7173283	7173314	6
72	18	54377256	54377287	54423158	54423189	18
73	9	96648122	96648153	96800444	96800475	9

74	20	25436043	25436074	25567407	25567438	20
75	9	92712460	92712491	92968821	92968852	9
76	5	118087633	118087664	118263492	118263523	5
77	X	458696	458727	602737	602768	X
78	19	22092225	22092256	22122965	22122996	19
79	13	40204938	40204969	40323171	40323202	13

表14.b5

41	13572319	13576320	13777052	13781053
42	61654302	61658303	61792128	61796129
43	27449755	27453756	27499977	27503978
44	166345772	166349773	166480995	166484996
45	122219773	122223774	122357299	122361300
46	104713627	104717628	104860975	104864976
47	113409304	113413305	113442081	113446082
48	44592038	44596039	44841204	44845205
49	35170568	35174569	35319578	35323579
50	112089774	112093775	112164631	112168632
51	38360547	38364548	38442752	38446753
52	10472376	10476377	10560306	10564307
53	72988629	72992630	73086857	73090858
54	96904639	96908640	97164838	97168839
55	13756606	13760607	13777052	13781053
56	38195275	38199276	38343519	38347520
57	96912142	96916143	97164838	97168839
58	121858404	121862405	122071861	122075862
59	73137152	73141153	73235290	73239291
60	32152850	32156851	32353682	32357683
61	73149242	73153243	73235290	73239291
62	55433718	55437719	55501696	55505697
63	77017307	77021308	77093295	77097296
64	220583887	220587888	220694376	220698377
65	65682913	65686914	65754053	65758054
66	220583887	220587888	220621990	220625991
67	42093577	42097578	42133303	42137304
68	29911858	29915859	30105543	30109544
69	115086181	115090182	115274886	115278887
70	130327285	130331286	130419251	130423252
71	6906446	6910447	7169313	7173314
72	54377256	54381257	54419188	54423189

73	96648122	96652123	96800444	96804445
74	25436043	25440044	25563437	25567438
75	92708490	92712491	92968821	92972822
76	118083663	118087664	118263492	118267493
77	458696	462697	598767	602768
78	22088255	22092256	22118995	22122996
79	40200968	40204969	40323171	40327172

表14.b6

41	Hg38_2_13572319_13584069_13777052_13783676_RR	OBD183-q1161
42	Hg38_11_61654302_61657376_61791076_61796129_RF	OBD183-q1165
43	Hg38_2_27449755_27453484_27499977_27502563_RR	OBD183-q1169
44	Hg38_1_166345772_166352895_166479691_166484996_RF	OBD183-q1173
45	Hg38_3_122215059_122223774_122357299_122361064_FR	OBD183-q1177
46	Hg38_9_104713365_104717628_104860975_104864532_FR	OBD183-q1181
47	Hg38_8_113409304_113413871_113438847_113446082_RF	OBD183-q1185
48	Hg38_11_44592038_44600902_44834704_44845205_RF	OBD183-q1189
49	Hg38_6_35168716_35174569_35319888_35323579_FF	OBD183-q1193
50	Hg38_5_112081094_112093775_112164631_112171972_FR	OBD183-q1197
51	Hg38_22_38362202_38364548_38442867_38446753_FF	OBD183-q1201
52	Hg38_21_10469195_10476377_10561289_10564307_FF	OBD183-q1205
53	Hg38_10_72986605_72992630_73084937_73090858_FF	OBD183-q1209
54	Hg38_6_96904639_96916143_97164838_97174050_RR	OBD183-q1213
55	Hg38_2_13749083_13760607_13777052_13783676_FR	OBD183-q1217
56	Hg38_7_38195275_38200060_38339555_38347520_RF	OBD183-q1221
57	Hg38_6_96904639_96916143_97164838_97174050_FR	OBD183-q1225
58	Hg38_12_121858404_121860997_122071931_122075862_RF	OBD183-q1229
59	Hg38_16_73137152_73141460_73235290_73240438_RR	OBD183-q1233
60	Hg38_22_32150471_32156851_32349194_32357683_FF	OBD183-q1237
61	Hg38_16_73147488_73153243_73235290_73240438_FR	OBD183-q1241
62	Hg38_5_55433718_55442449_55494916_55505697_RF	OBD183-q1245
63	Hg38_9_77019945_77021308_77093295_77095880_FR	OBD183-q1249
64	Hg38_1_220583887_220590755_220691405_220698377_RF	OBD183-q1253
65	Hg38_15_65682913_65689631_65754053_65760294_RR	OBD183-q1257
66	Hg38_1_220583887_220590755_220623254_220625991_RF	OBD183-q1261
67	Hg38_12_42093320_42097578_42126294_42137304_FF	OBD183-q1265
68	Hg38_10_29911467_29915859_30105543_30110107_FR	OBD183-q1269
69	Hg38_3_115079613_115090182_115274886_115279463_FR	OBD183-q1273
70	Hg38_2_130327268_130331286_130407716_130423252_FF	OBD183-q1277
71	Hg38_6_6906046_6910447_7167574_7173314_FF	OBD183-q1281

72	Hg38_18_54377256_54387140_54418492_54423189_RF	OBD183-q1285
73	Hg38_9_96648122_96650296_96800444_96805664_RR	OBD183-q1289
74	Hg38_20_25436043_25440608_25559938_25567438_RF	OBD183-q1293
75	Hg38_9_92703705_92712491_92968821_92970651_FR	OBD183-q1297
76	Hg38_5_118079546_118087664_118263492_118280818_FR	OBD183-q1301
77	Hg38_X_458696_461140_599978_602768_RF	OBD183-q1305
78	Hg38_19_22089092_22092256_22115487_22122996_FF	OBD183-q1309
79	Hg38_13_40199951_40204969_40323171_40327366_FR	OBD183-q1313

表14.b7

41	AACCAAAGAAATCATGAAGAA	OBD183-q1163	TCACCGAATTAGGAGGTTTAG
42	GAACAGTTTGTGGATCTGTGCATC	OBD183-q1167	TTGGCAAGTCCTGGATGGGGCAGG
43	AGGAAGGTGTGTGAGGTGGGCC	OBD183-q1171	AAAACAACAACGACAACCAAAA
44	GACACCACCACCAACATCCTG	OBD183-q1175	ATGCAAAGAAACTCTGTTGGA
45	ACTGAAATTATTCCAAAAAATTG	OBD183-q1179	TAATGCCCTTGTCTTTGAAAAGT
46	CTCCCTAACTCATTTTATGAGGCCA	OBD183-q1183	AATAAGGCTTTAAATCTCTCCAATT
47	TCATTCCTCATGTATCAAAATATCA	OBD183-q1187	GGAGTTTACAATGCGTCTCTCCTTG
48	GATGACTGTCTTATTCCATCA	OBD183-q1191	AGCCTCACGGTGGGGCATTCA
49	GGTCCATCAACAGATGTATGGATA	OBD183-q1195	CTGGAGCACAGTGCCTGATCAGTC
50	GATATAATCTTATATTAAAATCTAA	OBD183-q1199	GCAGCCTCCACTTACTGGGTTAAGC
51	CATATGAATGTTCACTGCAGCACTAT	OBD183-q1203	CCCAGCAGTGCCCTTGAGTGGTTGGG
52	GTATAAAAATGAACAAGATGC	OBD183-q1207	AGATGGTGCCACTGCACTCCA
53	TGCTCCTGAATGACTACTGGGTACAT	OBD183-q1211	AAATTGAGGTCTATTTTCAAAATATC
54	TTTGCCTATTCCTGTAACAATACC	OBD183-q1215	AATATTTGTATTTTATACTGTATA
55	GAGAGCTAAATAGTTTTATTGCTCTG	OBD183-q1219	ATGAATGTATGCACAAGGAGAAAACA
56	ACATTGGATAAAGGGTCATCATCTCT	OBD183-q1223	TCAAGGTGCATAATTAAGCTCTGCAA
57	CAGAAAGTGTTAAAAGAAAACTTCA	OBD183-q1227	TCATCAGATAAACAATATTTGTATTT

58	ATTCGTGGAGAAGAGACGACA	OBD183-q1231	GTGGATACATGACGTGCATGC
59	AAAAGAAAGGGGTAGGTGAGAGAGGC	OBD183-q1235	CTGGTGTGCACAGGTCCCTGGAGATT
60	TTTAGGTGGAAGTACCAGTTAATT	OBD183-q1239	TGCCCAGGCCGGAGTGCAATGGCA
61	TTTTAGCATCTCCTCAGGAAGC	OBD183-q1243	TTTCCGAGTTATGACCCCTGGT
62	ACGGAGAAAAAAAAAGGTCTCCCC	OBD183-q1247	AAAGTGCTGGGATTACAGGCGTAA
63	CCGAAAAGTGGATTCTCCAGTGGT	OBD183-q1251	CATAAGCCACTGCACCCAGCCTTC
64	TGTTGTCCCAAGGCATACAAAGG	OBD183-q1255	TGAAAAATATTATTTTATTGTCT
65	CAAACTTTTTTGTTATTATATCTGT	OBD183-q1259	AGGATTCATGCAGTTGCTATGATTA
66	CCATCCAATGAAGCCTCACCAAATCT	OBD183-q1263	AATTGATGTGTCCAAGTTTCAAAACT
67	AAAGTTAAAAAAAAGGAAAGGCAAAT	OBD183-q1267	ATGCAAAACTTACCAAAGAGTCAGTG
68	ATTATGACTTTTTCTTTTCCTGTGC	OBD183-q1271	TGATTCTTAATTTTCTGAAACTAAT
69	GATTCTCAAACCTTGCAATATT	OBD183-q1275	GTGCTTTCAGATTTATGCTCTT
70	CCATCCTCTTGTAGAAAGCAGTCT	OBD183-q1279	AATGGCAGGTGAGTTTAATATTTG
71	CGTGACATACACAAAAACTTAAA	OBD183-q1283	TGTTGTGGAGACTCTGCACTGTG
72	AAAAATGACAACTGAAAACCATTA	OBD183-q1287	GAAGGATATTAAGGAAAAACAGAG
73	CTTTGGACATAAGAAGAGAGT	OBD183-q1291	ATCCATCTGGTCCTGGACTCT
74	TATCAAAGGTGTAACACATGCATA	OBD183-q1295	ACCAGCCTAGGCAACATAGGGAGA
75	AGCTCTTCCCTGCTCGCTTTTG	OBD183-q1299	AGGCCCAGGGCACCCTGGCCAT
76	TAGATCTCTCCATTGGGTAGATCACA	OBD183-q1303	ATGTTGAAACCTAATCGGTAATGTAA
77	GAGCCACTGTGCCTGGCCAAG	OBD183-q1307	GCAGGATTGCAGGCGTGAGCC
78	GTAAGAAAATTATGAAGTAAGT	OBD183-q1311	CTGTCGCCAGGCTGGAGTGCAG
79	GATATGGAAAGAAAGCCATATA	OBD183-q1315	AAACCCAAGAAGACATCACAAG

表14.b8

41	OBD183-p1161	CTGAGTCACTAAGGCTAGTCGAACTCCTG ACCTCAAGTAA
42	OBD183-p1165	TCCAGAAGCACAAGAGCATCGAACTCCTG ACCTTAAGCAA
43	OBD183-p1169	ACCTTGTCAAGGAAGCAATCGAACTCCTG ACATCAGGTGC
44	OBD183-p1173	TTGAAATTATCTCCAGCTTCGAACTCCTGA CCTTATGATG
45	OBD183-p1177	CAATATTCCTGATGAACATCGAACTCCTG GGCTCTTGATC
46	OBD183-p1181	CAATATCCCTGATGAACATCGAACTCCTG ACCTCAAGTGA
47	OBD183-p1185	TGTTAAGGATGTTGAGATTCGAACTCCTG ACCTCGTGAAG
48	OBD183-p1189	GCATTTGGGCATTCAAAGTCGAACTCCTG ACCTCAGGTCT
49	OBD183-p1193	TTACAACATGAATGAACCTCGAGACTAGC CTGACCAACGT
50	OBD183-p1197	AATTACATAGGAATCAACTCGAGACCAGC CTCCAACATGG
51	OBD183-p1201	ATGTATTTTGTGGGAACATCGAACTCCTG ACCCTCATGTG
52	OBD183-p1205	TACCAAAAGAATTCAAGATCGAACTCCTG ACCTCCAGTAA
53	OBD183-p1209	AGCAAGAAAGATTTAAAATCGAACTCCTG ACCGGGGGTGA
54	OBD183-p1213	GAACTTTATTATCAGTGATCGAACTCCTG ACCTCTAGTAA
55	OBD183-p1217	AAAGGGTATCATTGTAAGTCGAACTCCTG ACCTCAAGTAA
56	OBD183-p1221	AAGATGGGGGAATGCAAATCGAACTCCTG ACCCCATGTGA
57	OBD183-p1225	TAGAGAGACATACAGGAATCGAACTCCTG ACCTCTAGTAA
58	OBD183-p1229	ACTCAGCAGGAGGGGAAGTCGAACTCCTG ACCTCAAGTAT
59	OBD183-p1233	GGTATCTACAAAGCAGTATCGATCTCCTG ACCTCATCATC
60	OBD183-p1237	TATTTATGGAGTATACCCTCGAGACCAGC CTGATGGGTGA
61	OBD183-p1241	TGGATGTAAGAATCATCTTCGATCTCCTG ACCTCATCATC
62	OBD183-p1245	CAAGGAAAATACCACAAGTCGATCTCCTG ACCTCATGATT
63	OBD183-p1249	TCGCTGGTAAATTGGAAGTCGAACTCCTG

		ACCTCAGGAGA
64	OBD183-p1253	TGAAGCTTCAACTTCATGTCGATCTCCTGA CCTCGTGATA
65	OBD183-p1257	ATAAGATGGTAAACTTCATCGAACGCCTG ACCTCAGTTGA
66	OBD183-p1261	ATCTCTTCAGATACATGTTCGATCTCCTGA CCTCGTGATA
67	OBD183-p1265	ATATATACAATGATCTGGTCGATCTCCTG ACTTTGTGATC
68	OBD183-p1269	GTTTGATTGGCCCACACTTCGAACTCCTG ACCTCAGATGA
69	OBD183-p1273	TATAATAATCAACTAAAGTCGAACTCCTG ACCTTGGCATC
70	OBD183-p1277	GGATCAGTAACTTCAACATCGATCTCCTG ATCTCATGATC
71	OBD183-p1281	CATCTTTTTTTTTTTTTTTCGAACTCCTGAC CTAAGGTGA
72	OBD183-p1285	AATGAAAGGAAACAGGAATCGAACTCCT GACCTCAGGTGG
73	OBD183-p1289	CTTCTTGAGTGTAGGAGTTCGACACATAC ACTCTCACAAG
74	OBD183-p1293	CAGGATAATACCAAAAAATCGATCTCCTG ACCTTGTGATC
75	OBD183-p1297	AAGAGAACACCCTAAAAATCGAACTCCTG ACCTCAGGTGG
76	OBD183-p1301	CTAATATCAAAAGTGACATCGAACTCTTG ACATCATGATC
77	OBD183-p1305	GATCATGACTCCAGGAGATCGAACTCCTG ACCGCAGGTTA
78	OBD183-p1309	ATTAGAAAACTAAAAACCTCGAGACCATC CTGACCAACAT
79	OBD183-p1313	ATGACCACAGGAGGAAGGTCGATCTCCTG ACCTTGCGATG

表14.b9

41	OBD183-p1163	TTACTTGAGGTCAGGAGTTCGACTAGCCT TAGTGACTCAG
42	OBD183-p1167	TTGCTTAAGGTCAGGAGTTCGATGCTCTT GTGCTTCTGGA
43	OBD183-p1171	GCACCTGATGTCAGGAGTTCGATTGCTTC CTTGACAAGGT
44	OBD183-p1175	CATCATAAGGTCAGGAGTTCGAAGCTGGA GATAATTTCAA
45	OBD183-p1179	GATCAAGAGCCCAGGAGTTCGATGTTCAT CAGGAATATTG
46	OBD183-p1183	TCACTTGAGGTCAGGAGTTCGATGTTCAT

		CAGGGATATTG
47	OBD183-p1187	CTTCACGAGGTCAGGAGTTCGAATCTCAA CATCCTTAACA
48	OBD183-p1191	AGACCTGAGGTCAGGAGTTCGACTTTGAA TGCCCAAATGC
49	OBD183-p1195	ACGTTGGTCAGGCTAGTCTCGAGGTTCAT TCATGTTGTAA
50	OBD183-p1199	CCATGTTGGAGGCTGGTCTCGAGTTGATT CCTATGTAATT
51	OBD183-p1203	CACATGAGGGTCAGGAGTTCGATGTTCCC ACAAAATACAT
52	OBD183-p1207	TTACTGGAGGTCAGGAGTTCGATCTTGAA TTCTTTTGGTA
53	OBD183-p1211	TCACCCCCGGTCAGGAGTTCGATTTTAAA TCTTTCTTGCT
54	OBD183-p1215	TTACTAGAGGTCAGGAGTTCGATCACTGA TAATAAAGTTC
55	OBD183-p1219	TTACTTGAGGTCAGGAGTTCGACTTACAA TGATACCCTTT
56	OBD183-p1223	TCACATGGGGTCAGGAGTTCGATTTGCAT TCCCCCATCTT
57	OBD183-p1227	TTACTAGAGGTCAGGAGTTCGATTCCTGT ATGTCTCTCTA
58	OBD183-p1231	ATACTTGAGGTCAGGAGTTCGACTTCCCC TCCTGCTGAGT
59	OBD183-p1235	GATGATGAGGTCAGGAGATCGATACTGCT TTGTAGATACC
60	OBD183-p1239	TCACCCATCAGGCTGGTCTCGAGGGTATA CTCCATAAATA
61	OBD183-p1243	GATGATGAGGTCAGGAGATCGAAGATGA TTCTTACATCCA
62	OBD183-p1247	AATCATGAGGTCAGGAGATCGACTTGTGG TATTTTCCTTG
63	OBD183-p1251	TCTCCTGAGGTCAGGAGTTCGACTTCCAA TTTACCAGCGA
64	OBD183-p1255	TATCACGAGGTCAGGAGATCGACATGAA GTTGAAGCTTCA
65	OBD183-p1259	TCAACTGAGGTCAGGCGTTCGATGAAGTT TACCATCTTAT
66	OBD183-p1263	TATCACGAGGTCAGGAGATCGAACATGTA TCTGAAGAGAT
67	OBD183-p1267	GATCACAAAGTCAGGAGATCGACCAGAT CATTGTATATAT
68	OBD183-p1271	TCATCTGAGGTCAGGAGTTCGAAGTGTGG GCCAATCAAAC
69	OBD183-p1275	GATGCCAAGGTCAGGAGTTCGACTTTAGT

		TGATTATTATA
70	OBD183-p1279	GATCATGAGATCAGGAGATCGATGTTGAAGTTACTGATCC
71	OBD183-p1283	TCACCTTAGGTCAGGAGTTCGAAAAAAAAAAAAAAGATG
72	OBD183-p1287	CCACCTGAGGTCAGGAGTTCGATTCCTGTTTCCTTTCATT
73	OBD183-p1291	CTTGTGAGAGTGTATGTGTCGAACTCCTACACTCAAGAAG
74	OBD183-p1295	GATCACAAGGTCAGGAGATCGATTTTTTGGTATTATCCTG
75	OBD183-p1299	CCACCTGAGGTCAGGAGTTCGATTTTTAGGGTGTTCTCTT
76	OBD183-p1303	GATCATGATGTCAAGAGTTCGATGTCACTTTTGATATTAG
77	OBD183-p1307	TAACCTGCGGTCAGGAGTTCGATCTCCTGGAGTCATGATC
78	OBD183-p1311	ATGTTGGTCAGGATGGTCTCGAGGTTTTTAGTTTTCTAAT
79	OBD183-p1315	CATCGCAAGGTCAGGAGATCGACCTTCCTCCTGTGGTCAT

表14.b10

	探針
1	Hg38_19_57094212_57098345_57233951_57237158_FF
2	Hg38_11_58003371_58011882_58059493_58060635_FF
3	Hg38_11_423049_424869_471314_474762_FR
4	Hg38_3_56607355_56616652_56720571_56723572_FR
5	Hg38_4_146008815_146016663_146119983_146126521_RF
6	Hg38_9_67783001_67787510_67902085_67907948_RF
7	Hg38_8_12770254_12777389_12847600_12851939_FF
8	Hg38_2_12250302_12255740_12311885_12323082_RF
9	Hg38_3_56607355_56616652_56720571_56723572_RR
10	Hg38_12_73177806_73182173_73290158_73302144_FR
11	Hg38_5_24973248_24983649_25125334_25130628_RF
12	Hg38_6_112124976_112130576_112348080_112349398_RF
13	Hg38_21_19716572_19725961_19893386_19899115_FF
14	Hg38_3_5191109_5196776_5335426_5339895_RR
15	Hg38_11_61654302_61657376_61784148_61789549_RF
16	Hg38_9_106745510_106754100_106918096_106923299_RR
17	Hg38_X_73452508_73461775_73496823_73501374_FF
18	Hg38_12_73230046_73239105_73290158_73302144_FR
19	Hg38_17_65419734_65426249_65591380_65595913_FF

20	Hg38_1_209668643_209679016_209760730_209763950_FR
21	Hg38_11_109262743_109271459_109410929_109414834_RF
22	Hg38_14_45200381_45204127_45351931_45360707_FR
23	Hg38_7_90352830_90358229_90537883_90542286_FF
24	Hg38_12_73170357_73177806_73290158_73302144_FR
25	Hg38_8_119806687_119811442_119882110_119888009_RF
26	Hg38_10_68133244_68143089_68227286_68228362_RF
27	Hg38_12_42048317_42055061_42126294_42137304_FF
28	Hg38_11_62904910_62910094_62999851_63003941_RF
29	Hg38_14_67749309_67754286_67764440_67773348_FR
30	Hg38_11_58059493_58060635_58217294_58225742_FF
31	Hg38_13_42841670_42853806_43043327_43045089_FR
32	Hg38_22_46128634_46134707_46231440_46235124_FR
33	Hg38_6_136250099_136253568_136360365_136366092_FR
34	Hg38_9_106918096_106923299_107077276_107084447_RF
35	Hg38_6_13822111_13826619_13862508_13871589_RF
36	Hg38_3_155824853_155826680_155955915_155960464_RR
37	Hg38_4_146008815_146016663_146187649_146189946_RF
38	Hg38_18_11833251_11835410_11882578_11887235_RF
39	Hg38_20_23826570_23834331_23940914_23949115_FF
40	Hg38_19_55526300_55531217_55609240_55610480_RR
41	Hg38_2_90190573_90199040_90333145_90337129_FR
42	Hg38_19_12529097_12534237_12582615_12585911_FR
43	Hg38_5_126808091_126812950_126922767_126931015_RF
44	Hg38_6_136288490_136289547_136360365_136366092_RR
45	Hg38_1_184918101_184920707_185055640_185064440_FR
46	Hg38_12_84283330_84285940_84364785_84372231_RR
47	Hg38_10_58233406_58242253_58413385_58420204_FF
48	Hg38_10_68016760_68020562_68133244_68143089_RR
49	Hg38_1_12733037_12738871_12861407_12863549_RR
50	Hg38_4_166975421_166983791_167206121_167210789_FR
51	Hg38_7_57219761_57227269_57287216_57294474_FF
52	Hg38_11_77608671_77611162_77692897_77698671_RR

表15.a1

	基因	RP
1	USP29、ZIM3、DUXA、ZNF264、AURKC	26
2	OR9Q1、OR6Q1、OR9I1	28
3	ANO9、PTDSS2、SIGIRR	35
4	CCDC66、FAM208A、ARHGEF3	43

5	LSM6、ZNF827、SLC10A7	46
6	ANKRD20A1、CBWD3、FOXD4L3	56
7	LONRF1、KIAA1456、DLC1	57
8	TRIB2、LPIN1、NTSR2	51
9	CCDC66、FAM208A、ARHGEF3	78
10	TRHDE、TPH2、ATXN7L3B	107
11	CDH10、PRDM9、CDH9	108
12	LAMA4、RP11-506B6.7、RFPL4B	82
13	NCAM2、TMPRSS15、CHODL	159
14	EDEM1、ARL8B、BHLHE40	183
15	DAGLA、MYRF、TMEM258	151
16	ZNF462、RP11-508N12.4、RAD23B	201
17	CDX4、CHIC1、NAP1L2	132
18	TRHDE、TPH2、ATXN7L3B	230
19	AXIN2、CTD-2535L24.2、CEP112	232
20	G0S2、HSD11B1、TRAF3IP3	264
21	C11orf87、DDX10、EXPH5	225
22	FANCM、MIS18BP1、FKBP3	188
23	GTPBP10、CLDN12、CDK14	343
24	TRHDE、TPH2、ATXN7L3B	346
25	TAF2、DSCC1、DEPTOR	372
26	MYPN、ATOH7、PBLD	308
27	GXYLT1、YAF2、PPHLN1	303
28	CHRM1、SLC22A6、SLC22A8	469
29	ZFYVE26、RDH12、RAD51B	324
30	OR9Q1、OR9I1、OR9Q2、OR1S2、OR1S1	377
31	EPSTI1、DNAJC15、FAM216B	374
32	PPARA、CDPF1、PKDREJ	511
33	MTFR2、BCLAF1、MAP7	454
34	ZNF462、RP11-508N12.4、RAD23B	530
35	MCUR1、RNF182、RANBP9	479
36	SLC33A1、GMPS、C3orf33	532
37	LSM6、SLC10A7、ZNF827	464
38	GNAL、CHMP1B、MPPE1	534
39	CST2、CST5、GGTLC1	592
40	SBK2、SBK3、ZNF579、FIZ1、ZNF524、ZNF865	477
41	RPIA、EIF2AK3、TEX37	443

42	ZNF709、ZNF564、CTD-2192J16.20、ZNF490	522
43	LMNB1、37681、C5orf63	598
44	BCLAF1、MAP7、MTFR2	579
45	FAM129A、RNF2、TRMT1L	502
46	SLC6A15、TSPAN19、LRRIQ1	558
47	IPMK、CISD1、UBE2D1、TFAM	753
48	HERC4、MYPN、ATOH7	762
49	C1orf158、PRAMEF12、PRAMEF1、PRAMEF11、PRAMEF11、HNRNPCL1、PRAMEF2	513
50	SPOCK3、TLL1、ANXA10	847
51	ZNF479、ZNF716、AC118758.1	953
52	CLNS1A、AQP11、RSF1	821

表15.a2

	FC:(1類/2類)	pfp	P值	CCS
1	1.272779004	0	4.15782E-05	1
2	1.268510446	0	6.15774E-05	1
3	1.266504681	0	5.75011E-05	1
4	1.264873268	0	9.71546E-06	1
5	1.260180676	0	1.86301E-05	1
6	1.253907413	0	2.81331E-05	1
7	1.248845685	0	9.03124E-05	1
8	1.247523197	0	9.3376E-05	1
9	1.246398025	0	2.41246E-05	1
10	1.242656697	0	1.32214E-05	1
11	1.242089241	0	2.01246E-05	1
12	1.241840904	0	8.81792E-05	1
13	1.234757028	0	1.38001E-05	1
14	1.232227857	0	5.59721E-05	1
15	1.23078193	0	8.77958E-05	1
16	1.229932177	0	4.94274E-05	1
17	1.22906246	0	5.67182E-05	1
18	1.226410896	0	2.62328E-05	1
19	1.226407137	0	3.28754E-05	1
20	1.225642341	0	2.90598E-05	1
21	1.224481364	0	6.05515E-05	1
22	1.224430968	0	3.43145E-05	1
23	1.219870413	0	2.24252E-05	1
24	1.217613216	0	5.25926E-05	1

25	1.216586669	0	9.38493E-05	1
26	1.216513651	0	8.88499E-05	1
27	1.216226656	0	7.77692E-05	1
28	1.21498261	0	1.5613E-05	1
29	1.214946013	0	6.58305E-05	1
30	1.214645136	0	1.1329E-05	1
31	1.211519329	0	7.63934E-05	1
32	1.211210897	0	1.88954E-05	1
33	1.210388246	0	2.4845E-05	1
34	1.209113296	0	1.27264E-05	1
35	1.207377604	0	6.40239E-05	1
36	1.207230774	0	2.44924E-05	1
37	1.206467348	0	9.40322E-05	1
38	1.206388534	0	4.4671E-05	1
39	1.206192943	0	6.1883E-05	1
40	1.206056247	0	8.76297E-05	1
41	1.205269496	0	5.28476E-05	1
42	1.203906289	0	7.81098E-05	1
43	1.202571961	0	3.9925E-05	1
44	1.202376975	0	4.18914E-05	1
45	1.201462248	0	8.39572E-05	1
46	1.201397033	0	4.63023E-05	1
47	1.20009129	0	3.92449E-05	1
48	1.199976527	0	6.89421E-05	1
49	1.199072247	0	8.77321E-05	1
50	1.198487768	0	2.07144E-05	1
51	1.198399541	0	5.47263E-06	1
52	1.197796032	0	9.37507E-05	1

表15.a3

	60 mer
1	TAAAAAAGAATCAACTTTTATTTTAGAATCGAACTCCTGACCTCACATGTTTATCTGCCT
2	TAAACATAATTGATAACATTGTTTGCCTTCGAACTCCTGACCATAGCTCCTGAAATATTT
3	ATTGTTAAACGTAAAACAAAGAAATCAATCGAACTCCTGACCTTTAATGATCCACCTACC
4	TAGATTTTTGTGGATGTACATTTTTAGTTCGAACTCCTGACCTCAGTTAACCTACCTGCC
5	ACTTTTCTAATTGGAAGACTCCTGACAATCGAACTCCTGACCTAAGGTAATTCACCTGCC

6	TAATATCATCACTGAAGTATAATGTGAATCGATCTCCTGACCCAGTG ATCTAACCCCCTT
7	TTGGTTCAGATTATTAGGGAAATAAAAATCGAACTCCTGACCTTAAG TGATTTTCCCACC
8	AAAACAAATTATGTTCAAATGTATACATTCGATCTCCTGACCTTTTGA TACACCCATCTT
9	ATACTTAGGAATATACCTAACAAAGGAGTCGAACTCCTGACCTCAGT TAACCTACCTGCC
10	CTGATTCTTCAAGTCTCTATGGATCACTTCGATCTCCTGACCACCTGA TCCATTCACCTC
11	AAATTGAGGAGTTCTGTAATAAATGTATTCGAACTCCTGACCTCAAC AATTCACCCATCT
12	CTTGTGATTATCTAGAGTTTGAAGAGTTTCGATCTCCTGACCTCTTTT TCCACCTGCCTT
13	AAATATGTAGTCAATGAAAGTATCAAAATCGAGACCAGCCGAAATT ACAAGAATTAGCCA
14	GTTTTAAACTTTCCTCAAGGCCTAGTATTCGAACTCCTGACCTTTTTA TTCCTCACTTTG
15	CTTCTAGGTGGTACATCCCAAAGGCAGATCGAACTCCTGACCTTAAG CAACCTACCTGCC
16	GAAAGTCACTACCTTTCTTTTCTATTCTTCGAACTCCTGACCTCCTGA TTCATCCACCTC
17	GAAGCAACTTGTCACATCTAAGAGATCCTCGATTTTAGATCTTTCCTG CTTTCTCTTATG
18	AATATGGAATTTCACAAAGGACTAAGAATCGATCTCCTGACCACCTG ATCCATTCACCTC
19	TATCTGACATATGAAATGGCTCTAAATTTCGAACTCCTGACCTCAAAT TATCCATCCTCC
20	AAAAAGGATTTGCTTAATAATTTCAGAATCGAGACCAGCCTTTTGAT AGAGACAAGACCC
21	CAATAAAAAGACTCTAAGACATAAAAGGTCGAACTCCTGACACCAG TGATCCAGCTTCCT
22	TTCTCATTTTACTATGCAGAATCAGAGTTCGAGGAATTTATCCATTTC TTCTAGATTTTC
23	AAATACCAAAGAATATACGTAACCAAGGTCGAACTCCTGACTTCATT ATCTGCTCACCTC
24	GCTTTTTATATTTTTATTTTGCTTTTCATCGATCTCCTGACCACCTGAT CCATTCACCTC
25	TGGCTAATTTTTTTAATTTTTAGTAGAGTCGAACTCCTAACCTCTAGT GATCCATTCACC
26	CTATAGCAAGTTTTAGGTTGCTTGGTAATCGAACTCCTGACCTTATGC AATCCACTTGCC
27	TTTTCCTTTTGTAAAATAAGTTTGTCTTTCGATCTCCTGACTTTGTGAT CCTTCTGCCTC
28	ATGAGAAAGAGAAACACTTCAATATTTTTCGAACTCCTGACCTTAGG

	CAATTCGTCCACC
29	AGGTGACTGAGGCCAGGAGACTGAGAAGTCGAACTCCTGGCCTCGGGATCCTCTTCCCTC
30	AAATATTTCAGGAGCTATGGTCAGGAGTTCGAATTGTAATCCCTATGTGCAGGGGACAGG
31	ATCTAGTGTAAAAAGCCTTCTGGGTAAGTCGAACTCCTGACTCTCAGTTGATCTACCCGC
32	TGTTTTTATTTTCATGTTTTAATTTTGTTCGAACTCTTGACCTCAGGTAAACCACCCACC
33	GTGGTATTTAAAATAATGTGAGGAAAGTTCGAACTCCTGACTTCGGTGATCTACCTGCCG
34	AAAATTTCAGTTAGACACAGGAATAAGTTCGAACTCCTGACCTCCTGATTCATCCACCTC
35	CCCCACTAAAGCAGCTAGATACAGACTGTCGATCTCCTTACCTCGTAATCTGCCTGCATA
36	ATTTTTTAAAAATATTAAACCTTTGAAATCGAACTCCTGGCCTTAAGTGATTTGTCTGCC
37	CTTCCTACAAGATTATTTAACTTAAGTTTCGAACTCCTGACCTAAGGTAATTCACCTGCC
38	ATTACTGGGAGTTCTGTCTAAGACACGATCGAACTCCTGACCCAAGTGTTCTCCCCACCT
39	TCATGACTGTCCAATCTTTGAGGAATCTTCGAGACCATCCTGGTAATACAATGAAACCCT
40	GCTCCTGTGGAGTGACCCCAAGGAGCCTTCGAACTCCTGACTATAGTTGATCCACCCACC
41	TTCATTTTTCCACTATTAAATATAAATTTCGATCTCCTGGTCTCGTGATAAGCCCGCCTT
42	CAACAAGACAGAGGAAATAAAAAGTATATCGATCTCCTGATCTCATGATCCACTGGCCTC
43	ATTCATGAAAAATGTGTATTTTGGGAAATCGAACTCCTGAACTCAAGTGCTCCATCTGCC
44	TGTTCCTCTTGTGAATTCTCATTTCAGTTCGAACTCCTGACTTCGGTGATCTACCTGCCG
45	TCTATCAACTGCTTTAAAATTATAAAAGTCGAACTCCTGATTTCAAGTGATCCATCTGCC
46	AGCCAAATTGTTTTCTTGATAGGAACATTCGATCTCCTGACCATCCTGATCCACCAGCCT
47	GATGAAAAGACATCACGAGGTAAGGAGATCGATGCAAAAATCCTCCATAAAGTACTGGCA
48	ATGTAACTGTTGGATCGGGGGTAAAATTTCGAACTCCTGACCTTATGCAATCCACTTGCC
49	AAGTTCAGACTAATATCCCTGATGAACATCGAGACCCTCGTGTTAGAGGGCTGTCAGATC
50	CCCCTATGTGGAATTATGTAGTTATCTCTCGAGACCAGCCTAGCTAATGTGGTGAAATTC

51	TACAGTTTAATTCTAAAAATATGTATTTTCGAACTCCTGACCTGAGGC AATCTGCTGGCC
52	CAAATAAAATATCTAAACAAAATTTCAGTCGATCTCTTGACCTTGTA ATATGCCCATCTC

表15.a4

	探針序列	探針位置				
	Chr	開始1	結束1	開始2	結束2	Chr
1	19	57098314	57098345	57237127	57237158	19
2	11	58011851	58011882	58060604	58060635	11
3	11	424838	424869	471314	471345	11
4	3	56616621	56616652	56720571	56720602	3
5	4	146008815	146008846	146126490	146126521	4
6	9	67783001	67783032	67907917	67907948	9
7	8	12777358	12777389	12851908	12851939	8
8	2	12250302	12250333	12323051	12323082	2
9	3	56607355	56607386	56720571	56720602	3
10	12	73182142	73182173	73290158	73290189	12
11	5	24973248	24973279	25130597	25130628	5
12	6	112124976	112125007	112349367	112349398	6
13	21	19725930	19725961	19899084	19899115	21
14	3	5191109	5191140	5335426	5335457	3
15	11	61654302	61654333	61789518	61789549	11
16	9	106745510	106745541	106918096	106918127	9
17	X	73461744	73461775	73501343	73501374	X
18	12	73239074	73239105	73290158	73290189	12
19	17	65426218	65426249	65595882	65595913	17
20	1	209678985	209679016	209760730	209760761	1
21	11	109262743	109262774	109414803	109414834	11
22	14	45204096	45204127	45351931	45351962	14
23	7	90358198	90358229	90542255	90542286	7
24	12	73177775	73177806	73290158	73290189	12
25	8	119806687	119806718	119887978	119888009	8
26	10	68133244	68133275	68228331	68228362	10
27	12	42055030	42055061	42137273	42137304	12
28	11	62904910	62904941	63003910	63003941	11
29	14	67754255	67754286	67764440	67764471	14
30	11	58060604	58060635	58225711	58225742	11
31	13	42853775	42853806	43043327	43043358	13
32	22	46134676	46134707	46231440	46231471	22
33	6	136253537	136253568	136360365	136360396	6

34	9	106918096	106918127	107084416	107084447	9
35	6	13822111	13822142	13871558	13871589	6
36	3	155824853	155824884	155955915	155955946	3
37	4	146008815	146008846	146189915	146189946	4
38	18	11833251	11833282	11887204	11887235	18
39	20	23834300	23834331	23949084	23949115	20
40	19	55526300	55526331	55609240	55609271	19
41	2	90199009	90199040	90333145	90333176	2
42	19	12534206	12534237	12582615	12582646	19
43	5	126808091	126808122	126930984	126931015	5
44	6	136288490	136288521	136360365	136360396	6
45	1	184920676	184920707	185055640	185055671	1
46	12	84283330	84283361	84364785	84364816	12
47	10	58242222	58242253	58420173	58420204	10
48	10	68016760	68016791	68133244	68133275	10
49	1	12733037	12733068	12861407	12861438	1
50	4	166983760	166983791	167206121	167206152	4
51	7	57227238	57227269	57294443	57294474	7
52	11	77608671	77608702	77692897	77692928	11

表15.a5

	4 kb序列位置			
	開始1	**結束1**	**開始2**	**結束2**
1	57094344	57098345	57233157	57237158
2	58007881	58011882	58056634	58060635
3	420868	424869	471314	475315
4	56612651	56616652	56720571	56724572
5	146008815	146012816	146122520	146126521
6	67783001	67787002	67903947	67907948
7	12773388	12777389	12847938	12851939
8	12250302	12254303	12319081	12323082
9	56607355	56611356	56720571	56724572
10	73178172	73182173	73290158	73294159
11	24973248	24977249	25126627	25130628
12	112124976	112128977	112345397	112349398
13	19721960	19725961	19895114	19899115
14	5191109	5195110	5335426	5339427
15	61654302	61658303	61785548	61789549
16	106745510	106749511	106918096	106922097
17	73457774	73461775	73497373	73501374
18	73235104	73239105	73290158	73294159

19	65422248	65426249	65591912	65595913
20	209675015	209679016	209760730	209764731
21	109262743	109266744	109410833	109414834
22	45200126	45204127	45351931	45355932
23	90354228	90358229	90538285	90542286
24	73173805	73177806	73290158	73294159
25	119806687	119810688	119884008	119888009
26	68133244	68137245	68224361	68228362
27	42051060	42055061	42133303	42137304
28	62904910	62908911	62999940	63003941
29	67750285	67754286	67764440	67768441
30	58056634	58060635	58221741	58225742
31	42849805	42853806	43043327	43047328
32	46130706	46134707	46231440	46235441
33	136249567	136253568	136360365	136364366
34	106918096	106922097	107080446	107084447
35	13822111	13826112	13867588	13871589
36	155824853	155828854	155955915	155959916
37	146008815	146012816	146185945	146189946
38	11833251	11837252	11883234	11887235
39	23830330	23834331	23945114	23949115
40	55526300	55530301	55609240	55613241
41	90195039	90199040	90333145	90337146
42	12530236	12534237	12582615	12586616
43	126808091	126812092	126927014	126931015
44	136288490	136292491	136360365	136364366
45	184916706	184920707	185055640	185059641
46	84283330	84287331	84364785	84368786
47	58238252	58242253	58416203	58420204
48	68016760	68020761	68133244	68137245
49	12733037	12737038	12861407	12865408
50	166979790	166983791	167206121	167210122
51	57223268	57227269	57290473	57294474
52	77608671	77612672	77692897	77696898

表15.a6

	探針	引子ID
1	Hg38_19_57094212_57098345_57233951_57237158_FF	OBD183-2909
2	Hg38_11_58003371_58011882_58059493_58060635_FF	OBD183-2913
3	Hg38_11_423049_424869_471314_474762_FR	OBD183-2917
4	Hg38_3_56607355_56616652_56720571_56723572_FR	OBD183-2921
5	Hg38_4_146008815_146016663_146119983_146126521_RF	OBD183-2925

6	Hg38_9_67783001_67787510_67902085_67907948_RF	OBD183-2929
7	Hg38_8_12770254_12777389_12847600_12851939_FF	OBD183-2933
8	Hg38_2_12250302_12255740_12311885_12323082_RF	OBD183-2937
9	Hg38_3_56607355_56616652_56720571_56723572_RR	OBD183-2941
10	Hg38_12_73177806_73182173_73290158_73302144_FR	OBD183-2945
11	Hg38_5_24973248_24983649_25125334_25130628_RF	OBD183-2949
12	Hg38_6_112124976_112130576_112348080_112349398_RF	OBD183-2953
13	Hg38_21_19716572_19725961_19893386_19899115_FF	OBD183-2957
14	Hg38_3_5191109_5196776_5335426_5339895_RR	OBD183-2961
15	Hg38_11_61654302_61657376_61784148_61789549_RF	OBD183-2965
16	Hg38_9_106745510_106754100_106918096_106923299_RR	OBD183-2969
17	Hg38_X_73452508_73461775_73496823_73501374_FF	OBD183-2973
18	Hg38_12_73230046_73239105_73290158_73302144_FR	OBD183-2977
19	Hg38_17_65419734_65426249_65591380_65595913_FF	OBD183-2981
20	Hg38_1_209668643_209679016_209760730_209763950_FR	OBD183-2985
21	Hg38_11_109262743_109271459_109410929_109414834_RF	OBD183-2989
22	Hg38_14_45200381_45204127_45351931_45360707_FR	OBD183-2993
23	Hg38_7_90352830_90358229_90537883_90542286_FF	OBD183-2997
24	Hg38_12_73170357_73177806_73290158_73302144_FR	OBD183-3001
25	Hg38_8_119806687_119811442_119882110_119888009_RF	OBD183-3005
26	Hg38_10_68133244_68143089_68227286_68228362_RF	OBD183-3009
27	Hg38_12_42048317_42055061_42126294_42137304_FF	OBD183-3013
28	Hg38_11_62904910_62910094_62999851_63003941_RF	OBD183-3017
29	Hg38_14_67749309_67754286_67764440_67773348_FR	OBD183-3021
30	Hg38_11_58059493_58060635_58217294_58225742_FF	OBD183-3025
31	Hg38_13_42841670_42853806_43043327_43045089_FR	OBD183-3029
32	Hg38_22_46128634_46134707_46231440_46235124_FR	OBD183-3033
33	Hg38_6_136250099_136253568_136360365_136366092_FR	OBD183-3037
34	Hg38_9_106918096_106923299_107077276_107084447_RF	OBD183-3041
35	Hg38_6_13822111_13826619_13862508_13871589_RF	OBD183-3045
36	Hg38_3_155824853_155826680_155955915_155960464_RR	OBD183-3049
37	Hg38_4_146008815_146016663_146187649_146189946_RF	OBD183-3053
38	Hg38_18_11833251_11835410_11882578_11887235_RF	OBD183-3057
39	Hg38_20_23826570_23834331_23940914_23949115_FF	OBD183-3061
40	Hg38_19_55526300_55531217_55609240_55610480_RR	OBD183-3065
41	Hg38_2_90190573_90199040_90333145_90337129_FR	OBD183-3069
42	Hg38_19_12529097_12534237_12582615_12585911_FR	OBD183-3073
43	Hg38_5_126808091_126812950_126922767_126931015_RF	OBD183-3077
44	Hg38_6_136288490_136289547_136360365_136366092_RR	OBD183-3081
45	Hg38_1_184918101_184920707_185055640_185064440_FR	OBD183-3085
46	Hg38_12_84283330_84285940_84364785_84372231_RR	OBD183-3089
47	Hg38_10_58233406_58242253_58413385_58420204_FF	OBD183-3093

48	Hg38_10_68016760_68020562_68133244_68143089_RR	OBD183-3097
49	Hg38_1_12733037_12738871_12861407_12863549_RR	OBD183-3101
50	Hg38_4_166975421_166983791_167206121_167210789_FR	OBD183-3105
51	Hg38_7_57219761_57227269_57287216_57294474_FF	OBD183-3109
52	Hg38_11_77608671_77611162_77692897_77698671_RR	OBD183-3113

表15.a7

	引子序列	引子ID	引子序列
1	CCCTTAGCTCTGCACTGGGGTT	OBD183-2911	AATAATGAAAACTCTGTCATGC
2	ATGTGTGTATAAAAGGAAGAAAAAA	OBD183-2915	AACATAAAAATCTTAGGTGAGTCCA
3	GAACATAAAAACACGGAAGGGATG	OBD183-2919	CCCAGAGGCCAGCTCAGACCGGGT
4	CATGTGTCAGTACTTCATTCC	OBD183-2923	AATATAATTTCTACAGATGAA
5	TGATTGCACAGATTCCTCCTTG	OBD183-2927	AAAAAGAGTGAAGAAGGCCTAC
6	TTATAAAATGCACTTTATACACCT	OBD183-2931	ATTTCTGTTACAGTGAAAAAATAC
7	TCTTGAAAGAGAAAATATATAAT	OBD183-2935	CTTGAAGTAGCGAGTAAAACAAA
8	CCATGAAACTCAAAGAACATTTCA	OBD183-2939	AGTGTAAGTATGTCTCATGCAATA
9	TCTATATACCAACAGCGACCAAGC	OBD183-2943	TGTTATAGCTGTATTCCATATTTT
10	CTGCCTCATATGGCTGATCATAT	OBD183-2947	GGTTCTCTGTTCTCAATCAGGCC
11	TTAAGATATACTTGCATTTTACTT	OBD183-2951	CATGTATCTGATGTGTAGGTATTA
12	TACTGAGATTCTGTTAAAGACC	OBD183-2955	AAAATGAAAAGAGATGCTCTGA
13	AATCTGAAATAGCACCAATAGCTAA	OBD183-2959	TCTCTCTCTCCTTTTATTTATTTTTT
14	CCCTGTCAATTAAACAAACAAA	OBD183-2963	CAAATTTTGTGTTGAGTAACTT
15	TTAAGCCCTGGATCTTGACCCCCTT	OBD183-2967	ATGTTCTTGGCAAGTCCTGGATGGG
16	TCCAGTGGGACTTGTTCCAAACTG	OBD183-2971	AATGACATCGGTACTATCTCCATG
17	AAAAGTCTCAATTTTAATCATAG	OBD183-2975	TTTGAAACCAACGAGAACAAAGA
18	GATATTATTCAAAGATTATCAT	OBD183-2979	CTGGGAGTAATAATATGAAGGG
19	TGACCACCTAGATATA	OBD183-2983	AACTTCTACTTGAATTGGA

	CAGCAGG		GGGA
20	CAGCCCCCAACACAAAGAATT	OBD183-2987	CTTCAAACTCCTGGGTTCAAG
21	TTCTTCCTAGTCAGTCATACT	OBD183-2991	ATGATGATGAATAAGTCACTT
22	AAACATATGAAACCTTCAAAAAAGT	OBD183-2995	GGACTCTTCTAGGGAAAAAAGTCC
23	TATACACCAACAACAACCAAGCTGA	OBD183-2999	TCGGAGTCCTTAAAACACTCCAATC
24	TATAATTTTAGATTCCGTTAA	OBD183-3003	AGCCTCAAAATTTGTGGGGCT
25	ACACTGCACCCTTAACCCTACCCGC	OBD183-3007	ATATAAGAAGATAAAATGCTTACAA
26	GTGTCGGTACTTGATAATATTTGTTG	OBD183-3011	AAACTGTGTACACTTCAGGACCCACA
27	AACTAGGCAATTACAATTGTG	OBD183-3015	AGGAGGCTTCAGTGAAAACTA
28	GTCTGGGTCCCTGAATGACTCTG	OBD183-3019	TATACTTAAATGAGCATGGCTGT
29	GAGGTCCCAGCACTTTCGCACC	OBD183-3023	CTCACATGTGTCGCCATGCAAA
30	GCTGGGAGGCTTTTGGAGCAG	OBD183-3027	ATGTTACATTGCTGCAGGCAA
31	GTATGTCATGGAATGCCATAGAAGC	OBD183-3031	ACACTGTCAGAAAAGGTCTAGAATA
32	TCCTTGTCATTCCCCATGAGC	OBD183-3035	TAATAGAGAACAAACAGTATA
33	AATCTGTATTGCCTTTCTACTT	OBD183-3039	CTTACTTCCACTTCATGTAGCT
34	CATGTTAGTGAAATAAGCCAGGCA	OBD183-3043	TTTAACTCATATATGGGCATATGC
35	TCTCCAAGGCCCCAGCAGAGTAA	OBD183-3047	CTCCTGACCTCATGATCCTCCTG
36	GCCTTGACCTCTCAAAATGCTGGGA	OBD183-3051	CATTTGATCTTTGACAAAGTTGACA
37	ATGTGAGTAAGATAAATGTATACA	OBD183-3055	ATCATTAAGCAAATAAATTTTTGC
38	CGCAGGTGAGGCCGCTGGGGGTATCA	OBD183-3059	CTACCTACCTAGTCCCTGCTGCTACA
39	ATGTTTCCTGTTTATTTCTCA	OBD183-3063	CGCCATTCTCCTGCCTCAGCC
40	CCTTGGCCTCAGGCCCAGAGCAAGGC	OBD183-3067	TAACCCTAGAAGATGGTTACAAGCAT
41	AGGTGGCAGGCCAGTGGTGCTC	OBD183-3071	AATATTGACATTATAAAAGACA
42	ACAAGACCAGAAACAG	OBD183-3075	TATTTCATAAATTTCAAAA

	GGTAAGA		GCCA
43	CAGTTAGATATTAAAACAGAGTAA	OBD183-3079	CAAGACCGTACCACTGCACACCAG
44	AAATTAAGACTGAAGTTGAAA	OBD183-3083	CTTACTTCCACTTCATGTAGC
45	TATGAGATGAACTTTTTTAAGCTTC	OBD183-3087	GGTTCATAAAACTAAACAACAGATA
46	CCCCAAGTTAGACTTAATTCT	OBD183-3091	AAGAACAAAAAAATGTAGATA
47	AACAGATAAAAAAGCAAGGAAAATA	OBD183-3095	TTATGTTTATTGATTTGCGTATGTT
48	AGTCCTTTGTGAAGTATCACAA	OBD183-3099	TATATGCTTTCTACCTTTGAGA
49	CTTCTGAAACTATTCCAAACAGTAC	OBD183-3103	CGTCAATAGACATGCAATTGCTGCC
50	AATAGCTAGAAGAGAGGATTTT	OBD183-3107	TGGCAAGATCTCAGCTCACTGC
51	GGCCTGTTCTTTGCACTTGCGGTGG	OBD183-3111	GACCATCCTGGCCAACATGGTTGAT
52	AAAACAATGTTAGGTTACTTTC	OBD183-3115	CTTTTAGAAACTGAAGAATCAG

表15.a8

53	Hg38_6_13651621_13658122_13822111_13826619_FR
54	Hg38_11_109262743_109271459_109299522_109301796_RF
55	Hg38_9_39437177_39452023_39582372_39586482_RR
56	Hg38_9_39354909_39358822_39582372_39586482_FR
57	Hg38_16_58543809_58546477_58562300_58568481_FR
58	Hg38_14_104502188_104508476_104617335_104622438_FR
59	Hg38_6_135898071_135904698_135916612_135930758_FR
60	Hg38_12_94413073_94417027_94523831_94528817_RF
61	Hg38_X_458696_461140_510375_518392_RF
62	Hg38_2_90287178_90294507_90333145_90337129_RR
63	Hg38_19_55562835_55568514_55609240_55610480_FR
64	Hg38_13_38320425_38329510_38537765_38539537_FF
65	Hg38_7_20213040_20221826_20334106_20338424_FF
66	Hg38_10_17475515_17484041_17588250_17593259_RF
67	Hg38_2_35364541_35376857_35410245_35413009_FF
68	Hg38_4_55256274_55264763_55389969_55392472_FR
69	Hg38_3_186029644_186033045_186196358_186204775_RR
70	Hg38_1_98980591_98992932_99140223_99144899_RR
71	Hg38_21_45869510_45874341_46036338_46042184_FF
72	Hg38_X_16371410_16382110_16645214_16647487_RR

73	Hg38_17_40875117_40878199_40974993_40978260_RR
74	Hg38_22_49729061_49733478_49865819_49868377_FF
75	Hg38_3_186121192_186124989_186196358_186204775_FR
76	Hg38_17_34866977_34875220_35076808_35078777_FF
77	Hg38_16_4059378_4065517_4136959_4138893_FR
78	Hg38_11_47497688_47501453_47634992_47637905_RR
79	Hg38_3_113626158_113631643_113781133_113785237_FF
80	Hg38_8_100427552_100431117_100566246_100573436_FR
81	Hg38_16_4059378_4065517_4136959_4138893_RR
82	Hg38_10_104492138_104497504_104612999_104618776_RF
83	Hg38_6_143932094_143936306_144020508_144030049_FR
84	Hg38_3_127239888_127246012_127487537_127491643_FF
85	Hg38_16_78585317_78592026_78737355_78740003_FR
86	Hg38_19_22083468_22086340_22115487_22122996_FF
87	Hg38_13_18427215_18437906_18455870_18459317_FR
88	Hg38_2_135760228_135765033_135928040_135933751_RF
89	Hg38_3_186196358_186204775_186335868_186340163_RF
90	Hg38_17_62402718_62405668_62571720_62577177_RF
91	Hg38_2_96810595_96813126_96951221_96955306_FF
92	Hg38_2_90319634_90323094_90333145_90337129_FR
93	Hg38_2_27499977_27502563_27626184_27635183_RF
94	Hg38_8_124679022_124686487_124844862_124848841_FR
95	Hg38_19_37692803_37698986_37734335_37739114_FR
96	Hg38_3_122297501_122303796_122357299_122361064_FR
97	Hg38_9_97327737_97334688_97421780_97430188_FR
98	Hg38_17_2244050_2248570_2310967_2312391_FR
99	Hg38_13_86162707_86169148_86370408_86375203_FF
100	Hg38_17_2310967_2312391_2404102_2407120_RF
101	Hg38_5_83044159_83047415_83194163_83201839_FR
102	Hg38_17_8317002_8318575_8465380_8468547_RF
103	Hg38_20_25436043_25440608_25643268_25648365_RF
104	Hg38_10_106531472_106538179_106719632_106724155_FR

表15.b1

53	RANBP9、MCUR1、NOL7	781
54	C11orf87、DDX10、EXPH5	937
55	SPATA31A1、CNTNAP3、ANKRD20A2	780
56	SPATA31A1、CNTNAP3、ANKRD20A2	740
57	CNOT1、AC010287.1、SETD6	769
58	TMEM179、C14orf180、INF2	864

59	PDE7B、MTFR2、BCLAF1	654
60	CEP83、TMCC3、PLXNC1	926
61	PPP2R3B、SHOX、GTPBP6	679
62	RPIA、EIF2AK3、TEX37	763
63	ZNF579、FIZ1、ZNF524、ZNF865	1403
64	UFM1、FREM2、STOML3	809
65	MACC1、ITGB8、ABCB5	1103
66	PTPLA、ST8SIA6、STAM	1301
67	CRIM1、FEZ2、VIT	906
68	SRD5A3、TMEM165、CLOCK	1058
69	ETV5、DGKG、TRA2B	1285
70	LPPR5、LPPR4、SNX7	1233
71	PCBP3、COL6A1、COL6A2	967
72	CTPS2、S100G、SYAP1	1063
73	KRT20、KRT23、KRT39、KRT40	1218
74	BRD1、ZBED4、ALG12	1423
75	DGKG、ETV5、TRA2B	1096
76	CCT6B、ZNF830、LIG3、RFFL、RAD51L3-RFFL	1348
77	ADCY9、SRL、TFAP4	1179
78	CELF1、NDUFS3、PTPMT1、KBTBD4、FAM180B、C1QTNF4、MTCH2	959
79	SIDT1、KIAA2018、NAA50、ATP6V1A	1130
80	ANKRD46、SNX31、RNF19A	807
81	ADCY9、SRL、TFAP4	1466
82	SORCS3、CFAP58、ITPRIP	1051
83	RP3-468K18.7、ZC2HC1B、PLAGL1	990
84	C3orf56、TPRA1、MCM2	994
85	WWOX、CLEC3A、VAT1L	1019
86	ZNF257、ZNF676、ZNF208	1224
87	AL356585.2、TUBA3C、TPTE2	1468
88	UBXN4、LCT、MCM6、DARS	1290
89	DGKG、ETV5、CRYGS	1176
90	EFCAB3、METTL2A、TLK2	853
91	CNNM4、CNNM3、ANKRD23、ANKRD39、SEMA4C、FAM178B	1136
92	RPIA、EIF2AK3、TEX37	1106
93	GCKR、AC109829.1、AC109829.2、C2orf16、ZNF512、CCDC121、GPN1	1199

94	MTSS1、NDUFB9、ZNF572	976
95	CTD-2528L19.4、ZNF607、ZNF573	1029
96	CSTA、CCDC58、CASR	1259
97	CCDC180、TDRD7、TMOD1	1319
98	SMG6、SRR、TSR1	1164
99	SLITRK6、SLITRK5、SLITRK1	1149
100	SRR、TSR1、SGSM2、MNT、METTL16	1284
101	TMEM167A、XRCC4、VCAN	1155
102	ARHGEF15、ODF4、KRBA2、RP11-849F2.7、RPL26、RNF222、NDEL1	1271
103	GINS1、NINL、NANP	1023
104	SORCS1、SORCS3、CFAP58	1525

表15.b2

53	1.197580138	0	4.97678E-05	1
54	1.197377721	0	8.15385E-05	1
55	1.1973556	0	4.00278E-05	1
56	1.197258152	0	6.21142E-05	1
57	1.197149562	0	4.19587E-05	1
58	1.196967801	0	7.55242E-05	1
59	1.195984545	0	6.94169E-05	1
60	1.195032134	0	8.68368E-05	1
61	1.194996143	0	5.03574E-05	1
62	1.194773293	0	5.30731E-05	1
63	1.192241907	0	1.60683E-05	1
64	1.191938366	0	8.98521E-05	1
65	1.191552053	0	5.95308E-05	1
66	1.191523361	0	1.10543E-05	1
67	1.191050008	0	5.47707E-05	1
68	1.190541469	0	1.95483E-05	1
69	1.190515678	0	2.23503E-05	1
70	1.190431942	0	1.49215E-05	1
71	1.190402171	0	2.9352E-05	1
72	1.190296077	0	4.54438E-05	1
73	1.190183505	0	6.85199E-05	1
74	1.189975235	0	1.85898E-05	1
75	1.189948487	0	4.16628E-05	1
76	1.189736169	0	2.01334E-05	1
77	1.189537848	0	1.01708E-05	1

78	1.18951171	0	2.84403E-05	1
79	1.189333524	0	3.19468E-05	1
80	1.189281993	0	0.000100437	1
81	1.189183951	0	1.29335E-05	1
82	1.188925639	0	1.87607E-05	1
83	1.188598812	0	2.86448E-05	1
84	1.188140985	0	8.32975E-05	1
85	1.188041135	0	5.05104E-05	1
86	1.187954643	0	3.3294E-05	1
87	1.187861057	0	1.90741E-05	1
88	1.187845707	0	3.67662E-05	1
89	1.187739215	0	3.38344E-05	1
90	1.187681065	0	2.73429E-05	1
91	1.187630355	0	2.65725E-05	1
92	1.187247796	0	1.7679E-05	1
93	1.187205611	0	2.99571E-05	1
94	1.18710832	0	0.000101632	1
95	1.187089661	0	6.92267E-05	1
96	1.186954365	0	9.63658E-05	1
97	1.186892139	0	1.72958E-05	1
98	1.186882958	0	1.51952E-05	1
99	1.186202204	0	4.54695E-05	1
100	1.186158973	0	1.89074E-05	1
101	1.186147318	0	0.000104402	1
102	1.186142668	0	8.05E-05	1
103	1.185911778	0	5.8288E-05	1
104	1.185831949	0	9.41733E-06	1

表15.b3

53	CTCTTCCTTAGTTTACTTTAAGTATTAGTCGATCTCCTTACCTCGTAATCTGCCTGCATA
54	AATTTATTGAACACTCAATAGGCACTAATCGAACTCCTGACACCAGTGATCCAGCTTCCT
55	GTAGACAAGAACACTTAGAATGCTACTGTCGAACTCCTGACCTCTAGAGTCAGGCCTCCT
56	AAAAAGAAAATGTTGGATCATTTACAGATCGAACTCCTGACCTCTAGAGTCAGGCCTCCT
57	GTCTAATGCAAGGTTCTTGCAGAGAACCTCGAGACCAGCCTGTGAACACAGCCAAGACTT
58	AGAACTAGACCCATAAATACATTTCCCATCGAACTCCTGACCTGATCTCGGGTGATCCAC
59	GGACATAGTCTTACTTTTAGTCATAGCATCGATCTCTTGATCCCATGAT

	CCACCTGCCTC
60	ATGGAATACTTTGCCTTTTCTCATGAATTCGAACTCCTGACATCAGGC ATTCTGCCTGCC
61	TTTGTTCACCTCTAACAATGTATTTTGTTCGAACTCCTGACCGCAGGTT ACCTGCCCGAG
62	AAATATTCATCTTAGATATGGCCCGTGTTCGATCTCCTGGTCTCGTGAT AAGCCCGCCTT
63	AATGACACGCTAAAAGGAAAAAGGAACGTCGAACTCCTGACTATAGT TGATCCACCCACC
64	GACTTTCCAGGTTCCTAAATATCCATTTTCGAACTCCTGACTTCTTGAT CTGTCCGCCTC
65	AGTGAGTAAGTTCTTTGAGAATGGAATATCGAACTCCTGACATCAAGT GTTCCTCCCACC
66	TCCTTTAGATGAAATAATTTGTATCATGTCGAACTCTCAACCTCAGGT AATCCTCCCACC
67	TTTTTTATACATATAATTAAGGTATATTTCGAACTCCTGACTTCATGAT ACACCCACCTT
68	GTATTTTTCTTCATTTTGGAGCTTCAGGTCGAACTCCTGAGCTCAGGTT ATCCACCTGCC
69	TCACAGGGATTTTTTTTTAACCATAATTTCGAACTCCTGACTGCAGGTG TTCCACCTGCC
70	AAAAACACTGATTGTAATTAATGTGAAGTCGAACTCTTGACCTCTGGT GATCTACCCACC
71	AGAATTAACATTTTAAATTATGGAGAGTTCGAACTCCTGGCCTCAGGT GATATCCATCTG
72	GAAATGACCTCTTGCTGGTTGCAGTAAGTCGATCTCCTGACCCTGTGA ACCACACGCCTC
73	CTGATACATGCTATAACAGAGATGAACTTCGATCTCTTGACCTTGTAA TCCATCCTCCTT
74	CTTCATTTGGTTAACATGGTGTACAACATCGAACTCCTGATCCTGGGT GATCCACCAGCC
75	GAGTCATTTATTGATTCAGGAATATTTGTCGAACTCCTGACTGCAGGT GTTCCACCTGCC
76	AATGTGTCAGAAACCTCATCTTTAATCTTCGAACTCCTGACCTAAAGC GATCTGTCTGCC
77	GGTGCGAAATCTGAAATAATGGCAGAAGTCGAACTCCTGACCTCATG ATCCTCTCACCTC
78	CAGCATGTTTTTTTGTGCACACTAAAGTTCGATTTCCTGACCTCGTGAT CTCCACCTGCC
79	TAAATCTTAGGCCTTAACCCCCATGAATTCGATCTCCTGACCTTGTGCT CTGCCCATCTC
80	ATTTAACCCTCGCAATAACCATCTGAGGTCGATCTCCTGACCTCGTAA TCTACCTGCCTC
81	TTTCTTTTTTTTTCTTTTTTTTTTTTTTTCGAACTCCTGACCTCATGATCC TCTCACCTC

82	TTTGCCAGATCAGGTGGCTACAGGGAAGTCGATCTCCTGACCTCGTGACTGGCCCACCTC
83	ATTTAATTCTCACAATAGCGTGAGGAGGTCGAACTCCTGACCTTGTATCCACCCACCTCG
84	TCATTTCTATGGAAAGTGGGTGACACAGTCGAACTCCTGACCAAAAAGTGATCCACCCGC
85	CCAGATTGATTATCCCTCAAGGTAAGCATCGAACTTCTGACCTCAGAATGATCCGCCTGC
86	CAAAAATTTTTCCTCATTACATCTGCCCTCGAGACCATCCTGACCAACATGTTGAAACCC
87	GAAAAAATTAGGGAAGAATTAGGAAAAATCGAGACCAGCCTGATGAACCTGGTGAAACCC
88	AATTATTTTTAATAATGTAAAAGGCAACTCGAGACCAGCCTCGGCAGTGTGACAAAACCC
89	AAAGTATGAATTTAGAGATGAAAAATCTTCGAACTCCTGACTGCAGGTGTTCCACCTGCC
90	AGACGGGGGTCTCACCATTAGGCTGGTCTCGATGTTCATCAGGGATATTGGTCTAAAATT
91	TAGCTCCAATAACCTTGAGCCAACCTAGTCGATCTCCTGACCTCATGATCTTCCCACCTT
92	TATTTGAAAGTTCAAGATTTTTGAGCTTTCGATCTCCTGGTCTCGTGATAAGCCCGCCTT
93	AACAGTTGTCATCTATGTAATGGACACATCGAACTCCTGACATCAGGTGCTCCACCTGCC
94	TTTTTCAGATGAAACAATGCATGGACTGTCGAGACCATACTGGCCAACAAGGTAAAACCC
95	GTTTCTTACCACTATGAATACCCTGATGTCGATCTCCTGACATGTGATCCACCCTCCTCA
96	CATTCAAAAGATGTCTGTTCTTCCCAAGTCGAACTCCTGGGCTCTTGATCCTTCCGACTC
97	TAGGCTATTTTTTCCCACTGATGAAATGTCGAACTCCTGAGCTCAGGTGACCCATGTGCC
98	GCCACTACCGTATTTTAACTGCAAAAAGTCGATCTCCTGACCTTGTGATCTTCCCACCTC
99	TTTTAGCATGAAGAGTTGTTGAATTTTGTCGATCTCCTGACCTCGTGATTTACTTAGGTG
100	TGAGCTCTTCTGAGAAACCAGAGCCCAGTCGATCTCCTGACCTTGTGATCTTCCCACCTC
101	AATGTTCTGTGGTATGCCCACAGCCTCATCGAACTCCTGACCTCAGATGAACTCCACCTG
102	TGTTGTCATTCTGGGATTAGAAGTCGCTTCGAACTCCTGACCTCATGTAGTCCACCTGCC
103	CAGTGATGTGTCTCCTTTTTTTTTTTTTTCGATCTCCTGACCTTGTGATCTCACCTTGGC
104	TCATTTTACCGAGTGTAAATTGTTGTTTTCGATCTCTTGATGTTGTGAT

	CCACCTGCCTC

表15.b4

53	6	13658091	13658122	13822111	13822142	6
54	11	109262743	109262774	109301765	109301796	11
55	9	39437177	39437208	39582372	39582403	9
56	9	39358791	39358822	39582372	39582403	9
57	16	58546446	58546477	58562300	58562331	16
58	14	104508445	104508476	104617335	104617366	14
59	6	135904667	135904698	135916612	135916643	6
60	12	94413073	94413104	94528786	94528817	12
61	X	458696	458727	518361	518392	X
62	2	90287178	90287209	90333145	90333176	2
63	19	55568483	55568514	55609240	55609271	19
64	13	38329479	38329510	38539506	38539537	13
65	7	20221795	20221826	20338393	20338424	7
66	10	17475515	17475546	17593228	17593259	10
67	2	35376826	35376857	35412978	35413009	2
68	4	55264732	55264763	55389969	55390000	4
69	3	186029644	186029675	186196358	186196389	3
70	1	98980591	98980622	99140223	99140254	1
71	21	45874310	45874341	46042153	46042184	21
72	X	16371410	16371441	16645214	16645245	X
73	17	40875117	40875148	40974993	40975024	17
74	22	49733447	49733478	49868346	49868377	22
75	3	186124958	186124989	186196358	186196389	3
76	17	34875189	34875220	35078746	35078777	17
77	16	4065486	4065517	4136959	4136990	16
78	11	47497688	47497719	47634992	47635023	11
79	3	113631612	113631643	113785206	113785237	3
80	8	100431086	100431117	100566246	100566277	8
81	16	4059378	4059409	4136959	4136990	16
82	10	104492138	104492169	104618745	104618776	10
83	6	143936275	143936306	144020508	144020539	6
84	3	127245981	127246012	127491612	127491643	3
85	16	78591995	78592026	78737355	78737386	16
86	19	22086309	22086340	22122965	22122996	19
87	13	18437875	18437906	18455870	18455901	13
88	2	135760228	135760259	135933720	135933751	2
89	3	186196358	186196389	186340132	186340163	3

90	17	62402718	62402749	62577146	62577177	17
91	2	96813095	96813126	96955275	96955306	2
92	2	90323063	90323094	90333145	90333176	2
93	2	27499977	27500008	27635152	27635183	2
94	8	124686456	124686487	124844862	124844893	8
95	19	37698955	37698986	37734335	37734366	19
96	3	122303765	122303796	122357299	122357330	3
97	9	97334657	97334688	97421780	97421811	9
98	17	2248539	2248570	2310967	2310998	17
99	13	86169117	86169148	86375172	86375203	13
100	17	2310967	2310998	2407089	2407120	17
101	5	83047384	83047415	83194163	83194194	5
102	17	8317002	8317033	8468516	8468547	17
103	20	25436043	25436074	25648334	25648365	20
104	10	106538148	106538179	106719632	106719663	10

表15.b5

53	13654121	13658122	13822111	13826112
54	109262743	109266744	109297795	109301796
55	39437177	39441178	39582372	39586373
56	39354821	39358822	39582372	39586373
57	58542476	58546477	58562300	58566301
58	104504475	104508476	104617335	104621336
59	135900697	135904698	135916612	135920613
60	94413073	94417074	94524816	94528817
61	458696	462697	514391	518392
62	90287178	90291179	90333145	90337146
63	55564513	55568514	55609240	55613241
64	38325509	38329510	38535536	38539537
65	20217825	20221826	20334423	20338424
66	17475515	17479516	17589258	17593259
67	35372856	35376857	35409008	35413009
68	55260762	55264763	55389969	55393970
69	186029644	186033645	186196358	186200359
70	98980591	98984592	99140223	99144224
71	45870340	45874341	46038183	46042184
72	16371410	16375411	16645214	16649215
73	40875117	40879118	40974993	40978994
74	49729477	49733478	49864376	49868377
75	186120988	186124989	186196358	186200359

76	34871219	34875220	35074776	35078777
77	4061516	4065517	4136959	4140960
78	47497688	47501689	47634992	47638993
79	113627642	113631643	113781236	113785237
80	100427116	100431117	100566246	100570247
81	4059378	4063379	4136959	4140960
82	104492138	104496139	104614775	104618776
83	143932305	143936306	144020508	144024509
84	127242011	127246012	127487642	127491643
85	78588025	78592026	78737355	78741356
86	22082339	22086340	22118995	22122996
87	18433905	18437906	18455870	18459871
88	135760228	135764229	135929750	135933751
89	186196358	186200359	186336162	186340163
90	62402718	62406719	62573176	62577177
91	96809125	96813126	96951305	96955306
92	90319093	90323094	90333145	90337146
93	27499977	27503978	27631182	27635183
94	124682486	124686487	124844862	124848863
95	37694985	37698986	37734335	37738336
96	122299795	122303796	122357299	122361300
97	97330687	97334688	97421780	97425781
98	2244569	2248570	2310967	2314968
99	86165147	86169148	86371202	86375203
100	2310967	2314968	2403119	2407120
101	83043414	83047415	83194163	83198164
102	8317002	8321003	8464546	8468547
103	25436043	25440044	25644364	25648365
104	106534178	106538179	106719632	106723633

表15.b6

53	Hg38_6_13651621_13658122_13822111_13826619_FR	OBD183-3117
54	Hg38_11_109262743_109271459_109299522_109301796_RF	OBD183-3121
55	Hg38_9_39437177_39452023_39582372_39586482_RR	OBD183-3125
56	Hg38_9_39354909_39358822_39582372_39586482_FR	OBD183-3129
57	Hg38_16_58543809_58546477_58562300_58568481_FR	OBD183-3133
58	Hg38_14_104502188_104508476_104617335_104622438_FR	OBD183-3137
59	Hg38_6_135898071_135904698_135916612_135930758_FR	OBD183-3141
60	Hg38_12_94413073_94417027_94523831_94528817_RF	OBD183-3145
61	Hg38_X_458696_461140_510375_518392_RF	OBD183-3149

62	Hg38_2_90287178_90294507_90333145_90337129_RR	OBD183-3153
63	Hg38_19_55562835_55568514_55609240_55610480_FR	OBD183-3157
64	Hg38_13_38320425_38329510_38537765_38539537_FF	OBD183-3161
65	Hg38_7_20213040_20221826_20334106_20338424_FF	OBD183-3165
66	Hg38_10_17475515_17484041_17588250_17593259_RF	OBD183-3169
67	Hg38_2_35364541_35376857_35410245_35413009_FF	OBD183-3173
68	Hg38_4_55256274_55264763_55389969_55392472_FR	OBD183-3177
69	Hg38_3_186029644_186033045_186196358_186204775_RR	OBD183-3181
70	Hg38_1_98980591_98992932_99140223_99144899_RR	OBD183-3185
71	Hg38_21_45869510_45874341_46036338_46042184_FF	OBD183-3189
72	Hg38_X_16371410_16382110_16645214_16647487_RR	OBD183-3193
73	Hg38_17_40875117_40878199_40974993_40978260_RR	OBD183-3197
74	Hg38_22_49729061_49733478_49865819_49868377_FF	OBD183-3201
75	Hg38_3_186121192_186124989_186196358_186204775_FR	OBD183-3205
76	Hg38_17_34866977_34875220_35076808_35078777_FF	OBD183-3209
77	Hg38_16_4059378_4065517_4136959_4138893_FR	OBD183-3213
78	Hg38_11_47497688_47501453_47634992_47637905_RR	OBD183-3217
79	Hg38_3_113626158_113631643_113781133_113785237_FF	OBD183-3221
80	Hg38_8_100427552_100431117_100566246_100573436_FR	OBD183-3225
81	Hg38_16_4059378_4065517_4136959_4138893_RR	OBD183-3229
82	Hg38_10_104492138_104497504_104612999_104618776_RF	OBD183-3233
83	Hg38_6_143932094_143936306_144020508_144030049_FR	OBD183-3237
84	Hg38_3_127239888_127246012_127487537_127491643_FF	OBD183-3241
85	Hg38_16_78585317_78592026_78737355_78740003_FR	OBD183-3245
86	Hg38_19_22083468_22086340_22115487_22122996_FF	OBD183-3249
87	Hg38_13_18427215_18437906_18455870_18459317_FR	OBD183-3253
88	Hg38_2_135760228_135765033_135928040_135933751_RF	OBD183-3257
89	Hg38_3_186196358_186204775_186335868_186340163_RF	OBD183-3261
90	Hg38_17_62402718_62405668_62571720_62577177_RF	OBD183-3265
91	Hg38_2_96810595_96813126_96951221_96955306_FF	OBD183-3269
92	Hg38_2_90319634_90323094_90333145_90337129_FR	OBD183-3273
93	Hg38_2_27499977_27502563_27626184_27635183_RF	OBD183-3277
94	Hg38_8_124679022_124686487_124844862_124848841_FR	OBD183-3281
95	Hg38_19_37692803_37698986_37734335_37739114_FR	OBD183-3285
96	Hg38_3_122297501_122303796_122357299_122361064_FR	OBD183-3289
97	Hg38_9_97327737_97334688_97421780_97430188_FR	OBD183-3293
98	Hg38_17_2244050_2248570_2310967_2312391_FR	OBD183-3297
99	Hg38_13_86162707_86169148_86370408_86375203_FF	OBD183-3301
100	Hg38_17_2310967_2312391_2404102_2407120_RF	OBD183-3305
101	Hg38_5_83044159_83047415_83194163_83201839_FR	OBD183-3309

102	Hg38_17_8317002_8318575_8465380_8468547_RF	OBD183-3313
103	Hg38_20_25436043_25440608_25643268_25648365_RF	OBD183-3317
104	Hg38_10_106531472_106538179_106719632_106724155_FR	OBD183-3321

表15.b7

53	TTCATGTAGTTTGACATTGACAGTT	OBD183-3119	AGAGGCATGAGCCACAGCGCCCAGC
54	TAAAAAATTTTAAAAGTTTGGATG	OBD183-3123	AACAGTATAAATCTCACTGATAAA
55	ATTACCAAGAATTCAAGGGAGAA	OBD183-3127	ACTTCTCCAGGGACTTTCATTAT
56	AGACCTACCAGATGGAAGCTG	OBD183-3131	TACTTCTCCAGGGACTTTCAT
57	TCTTTGGAGCAGAGAGTTGCT	OBD183-3135	TTATTTTTTTTAGAGACAGGG
58	AAAAGAAACATGATCCTGGATAA	OBD183-3139	TGGGGGAACAGGTTAAGACTGCA
59	AACCATCTCATGGTAATAGTAT	OBD183-3143	GAAGAAAACATTCTGAATATAT
60	TATTGTGTTTTGAGCCTCATCAGAA	OBD183-3147	TATTTGCATTTTGTTTTATGAACAA
61	TGGGGTGGGAGGTGAAGGGGC	OBD183-3151	CAGGCTGGTCTTAAACTCCTT
62	TATAAACATATATTTTTATATGTTA	OBD183-3155	ATTGACATTATAAAAGACAGTAAAA
63	GGATGGATGTGGGAATGGATG	OBD183-3159	ACGAATCCTCCCAGTAACCCT
64	CTATATATATAACTATATATATAAC	OBD183-3163	GGTTTTGATGCTTCCATAATAGCTA
65	CATTCCATTAACAAATATATGTGTAT	OBD183-3167	AGTCTGTTATGCTCACTGCTATTTGT
66	CTGAGATGGCGCCACTGCACTCCAG	OBD183-3171	GTAACAGTTGGAAGAAAGAATGCTA
67	TGATAGCTGAAAAAAACTGTAAA	OBD183-3175	GGTAAAAGCATATCAGTTCTAGT
68	CTGTACATATTTTGACATTTGT	OBD183-3179	TGCTTAAAAGTAATGACTTCTA
69	GAAATGGGTGAGTTTCTAGGAAAA	OBD183-3183	TATTTGGACTGGTTCACCTTTCAA
70	GTGTGTTCACCTGTATAATAC	OBD183-3187	GGGCTACAACACTGTATAGCA
71	ATCTCTAGTAAAATAAATCGGCTCAC	OBD183-3191	AACACAGACACATCACACACTCAAGA
72	TTTCTTTCCATTTCCAAGG	OBD183-3195	GTCTCCCCTGTTAGTTT

	GTAA		TTAATA
73	TCATAAAAGCCCCAAAGC GAAAC	OBD183-3199	TGGCAGGTATGTCACC ATAAACC
74	TCCTACATGGCCATTGTTA TGTTG	OBD183-3203	TAACATCAGAGGATTG TGGTTTTA
75	CGCCTGCACAATTGGTTC CAC	OBD183-3207	ACCTTTCAAGCCCTTCA GGTC
76	GCCCAATGACCTTCAATG CAAACC	OBD183-3211	CCTCCCAAAGTGCCAG AATTACAG
77	GGAATAATACTTACTACT TGG	OBD183-3215	TAATCCCGGCAATTTG GGAGG
78	GCTTTCTAATCTTTTAAGA GATTG	OBD183-3219	CTTGAGTCCAGGACGT CAAGACTG
79	ATAGTAGTTTTGTTTTTTG TTTTTT	OBD183-3223	TGTTTAGGCATAGAAT AGACTTTGA
80	TTACTAACAAAAATAGCA ACAA	OBD183-3227	AAGTCCAGACTGCAGT AAGTCA
81	CTTGTCTAGTTTTGTTGTT ACTTTTT	OBD183-3231	AATCCCGGCAATTTGG GAGGCTGCGG
82	GGGTTTCTCTCGTTGCACC ATCTT	OBD183-3235	ATGTGTCTGTATGTAGA GCGTATG
83	GTCAACAGCCTTATTGAT CCCAGAG	OBD183-3239	ACATAGTAAGTCCTTGT CTCTAAAA
84	GCCTGGTGGAAAAGGGAG AAACA	OBD183-3243	TGGGGTATGGGGAGTT AGTGTTT
85	GCCTCTGTGAGCTACCAC CACT	OBD183-3247	CATGTAACCAAACACC ACCTGT
86	TCCATTGTGTCTGTTTCAT TT	OBD183-3251	GGCTCACTGCAACCTCT GCCT
87	CTAACAAAATGAATTTTA AGATAA	OBD183-3255	TTAATATTTTTTCTAAT AGGAGCA
88	ACTACATATGCAAACATG TAT	OBD183-3259	GATCTTGGCTCACTGCA ACCT
89	GGCACAGGTCTCCACAGA TGTTAATT	OBD183-3263	CAGTTTTCTCTTCTATA AAATGAGAT
90	TGCAACCTCCACCTCCCG GGCTC	OBD183-3267	ACTATTCCAATCAATA GAAAAAG
91	AGCCTCACAAGGGTAGGG ACTTAATT	OBD183-3271	CAGCACTTTGGGAGGC CAAGGCAGGT
92	TATAATTTTATATGAAAA AAAT	OBD183-3275	GAATCCACATTTTAAA AAAAGC
93	TATTTTTAATTGCCTTGGA CTTTAT	OBD183-3279	AACGACAACCAAAACA AAAACAAAA
94	AAAAAGGAAGCAGTCTTT TTTTAGT	OBD183-3283	CTAGCTCTGTTGCCAGG CTGGAGTT

95	TTTGTAACCAGTATGAATTCTGTT	OBD183-3287	GGGAAGACTGTTTGGCATATAGCG
96	CAAAATCGGTATGAAGAAAATTTTGA	OBD183-3291	AAAAAGGGTGTTTTCTAATATGTCAT
97	GTACATACACCTTTATGCTCTG	OBD183-3295	TTCTAAAAAATACACAGGAGTA
98	GGAAACTCATACTGTTTGAACCAC	OBD183-3299	CCAGCACTTTTGGAGGCCAAAGCA
99	GATATTGGCTGTGGGTTTGTCATAG	OBD183-3303	AGCAAATCATATATGTCAGGCAAGT
100	GCATGAAAGGTGACGGGAGAAAGG	OBD183-3307	CCAGCACTTTTGGAGGCCAAAGCA
101	CAATCTCCTACAACTTCCATTA	OBD183-3311	ATAAAGAATAAATAAATTGAAA
102	GAAAATCTGAAAGGAAGGACC	OBD183-3315	GCCGTGATCGTGCCAGTGCTC
103	GGGGGACCCTAGGCTAAGGCAAGTG	OBD183-3319	AGAGAGGGCTGGGCAGGGTGGCTCA
104	CACACACAGAAAACTCAAGGCTG	OBD183-3323	CATACTGTTCTTTGTTGAGCATC

表15.b8

105	Hg38_13_33292777_33300074_33379042_33381537_FF
106	Hg38_13_33157099_33165940_33379042_33381537_FF
107	Hg38_14_20125056_20127850_20254086_20264765_FF
108	Hg38_22_22390196_22400635_22417372_22422635_RF
109	Hg38_2_90319634_90323094_90333145_90337129_FF
110	Hg38_1_205467613_205472592_205597487_205602829_RF
111	Hg38_8_105814873_105824107_105983420_105991962_RR
112	Hg38_3_139359866_139369158_139422950_139429189_FF
113	Hg38_11_93646250_93651617_93812658_93816548_FF
114	Hg38_2_218413367_218414625_218468442_218469889_FR
115	Hg38_21_33535825_33540136_33702336_33704782_RF
116	Hg38_15_25940901_25954083_26010869_26013845_RR
117	Hg38_2_152664286_152673031_152810778_152818515_FR
118	Hg38_16_88673445_88677147_88717058_88720423_RF
119	Hg38_11_55658006_55664056_55913134_55916714_FR
120	Hg38_19_12529097_12534237_12582615_12585911_RR
121	Hg38_9_106918096_106923299_106956084_106960240_RF
122	Hg38_5_178637588_178642104_178716116_178719743_FR
123	Hg38_5_55225977_55227096_55433718_55442449_RR
124	Hg38_1_212366521_212376213_212479522_212483636_FF

125	Hg38_3_155955915_155960464_156024474_156028938_RF
126	Hg38_6_135916612_135930758_136101114_136107621_RF
127	Hg38_6_13822111_13826619_13925547_13933665_RF
128	Hg38_19_16814077_16821664_16982325_16986644_FR
129	Hg38_20_47283636_47287468_47423313_47430412_FF
130	Hg38_2_127661293_127665982_127811240_127815683_FF
131	Hg38_11_47497688_47501453_47634992_47637905_FR
132	Hg38_9_35866168_35873586_35894481_35899234_RR
133	Hg38_12_113432110_113434599_113565905_113569926_RF
134	Hg38_2_74592023_74597081_74625034_74640403_RF
135	Hg38_2_27611917_27620712_27682649_27683957_FF
136	Hg38_3_63854804_63862312_63879711_63888574_FF
137	Hg38_7_72635553_72638872_72886393_72889737_RR
138	Hg38_11_20372802_20380788_20390846_20402338_RR
139	Hg38_9_72302739_72305851_72372195_72373448_FF
140	Hg38_Y_22235354_22244714_22295566_22300306_FF
141	Hg38_12_11258018_11266085_11544315_11547606_RR
142	Hg38_3_15171181_15180791_15414574_15417883_FR
143	Hg38_2_12713910_12715388_12794236_12801750_RR
144	Hg38_3_63794524_63806241_63879711_63888574_FF
145	Hg38_1_228460859_228462578_228712981_228719527_FF
146	Hg38_3_122243786_122250257_122357299_122361064_RR
147	Hg38_7_8143002_8149481_8188538_8195338_FF
148	Hg38_20_47296001_47298222_47423313_47430412_FF
149	Hg38_3_62505737_62515246_62564826_62570608_RR
150	Hg38_15_65754053_65760294_65952282_65960161_RF
151	Hg38_16_2687219_2688470_2801058_2807279_RR
152	Hg38_12_41964098_41967819_42126294_42137304_FF
153	Hg38_12_113432110_113434599_113654632_113664477_RF
154	Hg38_22_49757913_49762178_49865819_49868377_FF
155	Hg38_11_77692897_77698671_77781318_77787851_RF

表15.c1

105	STARD13、KL、RFC3	1162
106	STARD13、KL、PDS5B	1150
107	OR4N5、OR11G2、OR11H6、OR11H4、TTC5	1347
108	ZNF280B、ZNF280A、PRAME	1174
109	RPIA、EIF2AK3、TEX37	1156
110	CDK18、MFSD4、ELK4	2075
111	ZFPM2、OXR1、ABRA	1632

112	COPB2、MRPS22、RBP2	1254
113	CEP295、TAF1D、C11orf54、MED17	1191
114	VIL1、USP37、CTDSP1	1343
115	GART、SON、DONSON、AP000304.12、CRYZL1、ITSN1	1569
116	ATP10A、UBE3A、GABRB3	1354
117	PRPF40A、ARL6IP6、FMNL2	1545
118	SNAI3、AC138028.1、RNF166、CTU2、PIEZO1	1442
119	OR4C6、OR5D13、OR5D14、OR5L1、OR5D18、OR5L2、OR5D16、TRIM51、OR5W2	1391
120	ZNF709、ZNF564、CTD-2192J16.20、ZNF490	1461
121	ZNF462、RP11-508N12.4、RAD23B	1427
122	ZNF354A、CLK4、COL23A1	1696
123	MCIDAS、CCNO、DHX29、SKIV2L2、PPAP2A	1480
124	TMEM206、NENF、PPP2R5A	1596
125	KCNAB1、GMPS、SLC33A1	1383
126	PDE7B、MTFR2、BCLAF1	1351
127	RNF182、MCUR1、RANBP9	1584
128	NWD1、SIN3B、F2RL3、CPAMD8	1812
129	ZMYND8、NCOA3、EYA2	1345
130	LIMS2、WDR33、SFT2D3	1428
131	CELF1、NDUFS3、PTPMT1、KBTBD4、FAM180B、C1QTNF4、MTCH2	1324
132	OR13J1、HRCT1、TMEM8B	1236
133	SDSL、LHX5、SDS	1325
134	M1AP、SEMA4F、DOK1	1184
135	ZNF512、CCDC121、GPN1、SUPT7L、SLC4A1AP	1559
136	THOC7、ATXN7、C3orf49	1368
137	TYW1B、POM121、TRIM74	1300
138	HTATIP2、PRMT3、SLC6A5	1477
139	ZFAND5、GDA、TMC1	1404
140	RBMY1J、RBMY1F、PRY2	1745
141	PRB3、PRB4、PRB1、PRB2	1416
142	CAPN7、SH3BP5、METTL6	1607
143	TRIB2、LPIN1、NTSR2	1017
144	C3orf49、THOC7、ATXN7	1139
145	RNF187、HIST3H2BB、HIST3H2A	1733
146	CASR、CSTA、CCDC58	1845

147	ICA1、GLCCI1、NXPH1	1495
148	ZMYND8、NCOA3、EYA2	1454
149	CADPS、FEZF2、C3orf14	1688
150	DENND4A、RAB11A、MEGF11	1747
151	KCTD5、PRSS27、SRRM2、TCEB2、PRSS33	1697
152	GXYLT1、YAF2、PPHLN1	1520
153	SDSL、LHX5、SDS	1781
154	BRD1、ZBED4、ALG12	1847
155	RSF1、AAMDC、CLNS1A	1807

表15.c2

105	1.185806036	0	4.02275E-05	1
106	1.185774508	0	7.85908E-05	1
107	1.185456961	0	7.64782E-05	1
108	1.185377481	0	4.86717E-05	1
109	1.185363774	0	5.62754E-05	1
110	1.185254901	0	2.15225E-05	1
111	1.18486403	0	2.0681E-05	1
112	1.184855428	0	6.56875E-05	1
113	1.184736602	0	8.53256E-05	1
114	1.184435662	0	2.98335E-05	1
115	1.184397162	0	3.35116E-05	1
116	1.184290346	0	4.04684E-05	1
117	1.184152777	0	4.18896E-05	1
118	1.184123958	0	2.7662E-05	1
119	1.183990252	0	4.52014E-05	1
120	1.183745573	0	1.76209E-05	1
121	1.183724391	0	8.3569E-05	1
122	1.183521321	0	1.75208E-05	1
123	1.183474385	0	2.13304E-05	1
124	1.183343163	0	9.39209E-05	1
125	1.183279337	0	5.20407E-05	1
126	1.1832702	0	3.8987E-05	1
127	1.18310412	0	1.66998E-05	1
128	1.1830933	0	3.57588E-05	1
129	1.183088494	0	6.65706E-05	1
130	1.182903809	0	7.16202E-05	1
131	1.182844511	0	2.22498E-05	1
132	1.182673185	0	9.90263E-05	1
133	1.182516099	0	6.24329E-05	1
134	1.182473004	0	8.10701E-05	1

135	1.182368422	0	3.71456E-05	1
136	1.182308028	0	4.25684E-05	1
137	1.182181908	0	7.40079E-05	1
138	1.182021449	0	5.8333E-05	1
139	1.181788051	0	4.64856E-05	1
140	1.181763292	0	6.59963E-05	1
141	1.181643659	0	1.187E-05	1
142	1.181540055	0	6.24772E-05	1
143	1.18144712	0	7.22288E-05	1
144	1.181443612	0	4.75063E-05	1
145	1.18139825	0	2.87469E-05	1
146	1.181386664	0	4.5188E-05	1
147	1.180957541	0	7.28191E-05	1
148	1.180919534	0	4.66965E-05	1
149	1.180904051	0	3.61204E-05	1
150	1.180673349	0	5.56902E-05	1
151	1.180660229	0	1.12106E-05	1
152	1.18051619	0	7.05768E-05	1
153	1.180414981	0	7.44108E-05	1
154	1.180158626	0	5.2818E-05	1
155	1.180096347	0	0.000103236	1

表15.c3

105	AAGAACACCTAGAAATGTGGCTTTGGAGTCGAACTCCTGACCTCAAATGGTCAGCCCACC
106	CAAATTGATTCTATCCAAAAAGAATAATTCGAACTCCTGACCTCAAATGGTCAGCCCACC
107	TTTGGGGTTGAGGAATATGTTCACAATCTCGAGGAATTTATCCATTTCTTCTAGATTTTC
108	TAAAAATTAACACCATGTAACACTAAAATCGAACTCCTGACCTCAGGTGAGGTGATCCAC
109	TATTTGAAAGTTCAAGATTTTTGAGCTTTCGATCTCCTGACCTCGTGATGAACCCACCCC
110	GATTTAGAAAGAAGAATCAATGGCTATATCGAACTCCTGGCCTTAAGCCACTCACCTGCT
111	CTGGGTTGGTTACTGAAACAGAAAAAGGTCGAACTCCTGATCTCAAGTTATACACCTGCC
112	GTTTTATATTTTAAATGGCTTTTGATAATCGAACTCCTGACCTCAGGTAATCCATTACTT
113	GATTAAAAGTGCTTTATCTACATAAGATTCGAACTCCTGACCTCAGGTTATCGGCCTACC
114	TTGTCAATCAAACTGATAGAGAGCTTCATCGAACTCCTGACGTCAGGTGATCCATCAGCC
115	AAGTTGTCATTTGAATGAGATAAGGACCTCGAGACCAGCCTGAACAA

	TATGATGAAACCC
116	TTCTTCTTTAATGCTGTTTGAAACAAAATCGAACTCCTGACCTCAAGTTATCCAACCGCT
117	ATTTTCATAGCCTGCTCCCATGAAGCATTCGAACTCCTGACTTTGGGTGATCCACTCACC
118	CCAGAAGCCAAAAATGATGATGATGAAGTCGAACTCCTGGCCTCAGATGATCTATCCACC
119	TCATGTGGTGGGATATACTAGGTATGAATCGAGACCAGCCTGGTCAAAATGTTGGAACCC
120	AATGTTTGGAGACTGCCACATCGTTTTGTCGATCTCCTGATCTCATGATCCACTGGCCTC
121	ACCCAGATGTGCTCTTTCCTCTTGATTATCGAACTCCTGACCTCCTGATTCATCCACCTC
122	CCTTATCTCCTTGAAGGATGGAGCCTCTTCGAACTCCTGATCTCATGTTCCGCCCACCTC
123	GCGCTTTTTCAAAGTCCTGTTCAGCCCTTCGATCTCCTGACCTCATGATTCTCCTGCCTC
124	AGCTCCACCCAGAGGCTCAGATCCATCATCGAACTCCTGACCTCAATTGATCCATTTGCC
125	TCGTGTAATAGCCAGCGATAAGATCCAGTCGAACTCCTGGCCTTAAGTGATTTGTCTGCC
126	TTATTTTAGCTTCTCTGACAAGGACACTTCGATCTCTTGATCCCATGATCCACCTGCCTC
127	TAAACATTTTCATTTTGCACAAACTATTTCGATCTCCTTACCTCGTAATCTGCCTGCATA
128	GAGTTTCATCATATTTATCAGGCTGGTCTCGATGTGCGGTGAGTCATGATCATGCCACTG
129	TCACATTATGTGATTCCTCCCATCAATGTCGATCTCTTGACCTCGTGATTTGCTCACCTT
130	CAACAAATATTTACTATAAAAGCGGACATCGAACTCCTGATCTTAGTTGATCCGCCCGCT
131	AAGCTGCCTAGACCAAAGAATAACTGAGTCGATTTCCTGACCTCGTGATCTCCACCTGCC
132	GACTGGAAGCCTTATCAATAACATAAAGTCGAATTCCTGATCTTAGGTGATCCACCCACC
133	CGGCTGGCCACAATCACGGGCCCAGCAGTCGAACTCCTGACCTCAGGTAATCTTCCTGTC
134	TGTGCTCTGTTGAAATATAAAATACAAGTCGAACTACTGACCTAAGTGATCCACCCACCT
135	CCTACCCCTTAATTTTTTAAAGTGAGCCTCGAGACCAGTCTGGCCATGGTGAAAAACTGT
136	TATTTATTCTTCAAAAATGGGATTAACTTCGATCTCTTGACCTCAAGATCCACCTGCCTC
137	ACTGTAGGATTTTTCAACGTTGGCACCATCGAACTCCTGACCTCAGGTCACCCATCTGCC

138	ATTCTATTTACAGATGAAAGGAGCGATCTCGAGACCATCCTGGCTAACCCAGTGAAAACC
139	AAGATTAGCAGCAAAAGCGCATGTGATGTCGATCTTCTGACCTCGTGATCTTCCTGCCTC
140	ATCTAAAGATGATTTCCTATATTTTTGTTCGAACTCCTGACATGAAGAGATCTGCCCACC
141	ATGATTATATGTTTTGGGGTTGCTCTTCTCGAACTCCTGAGCTCAGTGAGACTCCCACCT
142	GATTCTGACTAAATTCTCCTTCAATGAATCGAACTCCTGACCTCAAGTAATTTGCCCACC
143	AAAGCGAGCCGATCACGAGGTCAAGAGATCGAACTCCTGACCTCGTGATTGGCCCACTTT
144	CACTGGATTCCTGAGTACCCCAATGAAATCGATCTCTTGACCTCAAGATCCACCTGCCTC
145	ATAAAGAATATGTGGTACATTTACACATTCGAACTCCAGACCTCAAGTGATTCACCAACC
146	TAACACATTTTTTGTATCCATTCATCTTTCGAACTCCTGGGCTCTTGATCCTTCCGACTC
147	GATCAGCGTGACAGAGGAAACTCGCAGATCGAACTCCTGACCTCAAGAGATCCAGGGATC
148	AATGATCCATGCCTGTTTTTGTGCACTGTCGATCTCTTGACCTCGTGATTTGCTCACCTT
149	CAGGGCCAGAAGTGCTCAAGTAGAAGCATCGAACTCCTGACCTTGTAATCCACCTGACTC
150	AATCTAAAATATGAAAACGATATAGACATCGAACGCCTGACCTCAGTTGATCTACCCACC
151	TCAGAAACGTTCCATTTCATCACCAGAGTCGAACTCCTGACCTCAGGTGAACTACCCACC
152	CCAACTCTCTGTTTCATTTTATGCAGTGTCGATCTCCTGACTTTGTGATCCTTCTGCCTC
153	CATCCTCCTAAGTGTTTGACCAACAAAATCGAACTCCTGACCTCAGGTAATCTTCCTGTC
154	CATTTTTATTAAACAATCGTTCCTGTCATCGAACTCCTGATCCTGGGTGATCCACCAGCC
155	CTTCAGAACAGTAAAAAAAAAAAAAAGTTCGATCTCTTGACCTTGTAATATGCCCATCTC

表15.c4

105	13	33300043	33300074	33381506	33381537	13
106	13	33165909	33165940	33381506	33381537	13
107	14	20127819	20127850	20264734	20264765	14
108	22	22390196	22390227	22422604	22422635	22
109	2	90323063	90323094	90337098	90337129	2
110	1	205467613	205467644	205602798	205602829	1

111	8	105814873	105814904	105983420	105983451	8
112	3	139369127	139369158	139429158	139429189	3
113	11	93651586	93651617	93816517	93816548	11
114	2	218414594	218414625	218468442	218468473	2
115	21	33535825	33535856	33704751	33704782	21
116	15	25940901	25940932	26010869	26010900	15
117	2	152673000	152673031	152810778	152810809	2
118	16	88673445	88673476	88720392	88720423	16
119	11	55664025	55664056	55913134	55913165	11
120	19	12529097	12529128	12582615	12582646	19
121	9	106918096	106918127	106960209	106960240	9
122	5	178642073	178642104	178716116	178716147	5
123	5	55225977	55226008	55433718	55433749	5
124	1	212376182	212376213	212483605	212483636	1
125	3	155955915	155955946	156028907	156028938	3
126	6	135916612	135916643	136107590	136107621	6
127	6	13822111	13822142	13933634	13933665	6
128	19	16821633	16821664	16982325	16982356	19
129	20	47287437	47287468	47430381	47430412	20
130	2	127665951	127665982	127815652	127815683	2
131	11	47501422	47501453	47634992	47635023	11
132	9	35866168	35866199	35894481	35894512	9
133	12	113432110	113432141	113569895	113569926	12
134	2	74592023	74592054	74640372	74640403	2
135	2	27620681	27620712	27683926	27683957	2
136	3	63862281	63862312	63888543	63888574	3
137	7	72635553	72635584	72886393	72886424	7
138	11	20372802	20372833	20390846	20390877	11
139	9	72305820	72305851	72373417	72373448	9
140	Y	22244683	22244714	22300275	22300306	Y
141	12	11258018	11258049	11544315	11544346	12
142	3	15180760	15180791	15414574	15414605	3
143	2	12713910	12713941	12794236	12794267	2
144	3	63806210	63806241	63888543	63888574	3
145	1	228462547	228462578	228719496	228719527	1
146	3	122243786	122243817	122357299	122357330	3
147	7	8149450	8149481	8195307	8195338	7
148	20	47298191	47298222	47430381	47430412	20
149	3	62505737	62505768	62564826	62564857	3
150	15	65754053	65754084	65960130	65960161	15

151	16	2687219	2687250	2801058	2801089	16
152	12	41967788	41967819	42137273	42137304	12
153	12	113432110	113432141	113664446	113664477	12
154	22	49762147	49762178	49868346	49868377	22
155	11	77692897	77692928	77787820	77787851	11

表15.c5

105	33296073	33300074	33377536	33381537
106	33161939	33165940	33377536	33381537
107	20123849	20127850	20260764	20264765
108	22390196	22394197	22418634	22422635
109	90319093	90323094	90333128	90337129
110	205467613	205471614	205598828	205602829
111	105814873	105818874	105983420	105987421
112	139365157	139369158	139425188	139429189
113	93647616	93651617	93812547	93816548
114	218410624	218414625	218468442	218472443
115	33535825	33539826	33700781	33704782
116	25940901	25944902	26010869	26014870
117	152669030	152673031	152810778	152814779
118	88673445	88677446	88716422	88720423
119	55660055	55664056	55913134	55917135
120	12529097	12533098	12582615	12586616
121	106918096	106922097	106956239	106960240
122	178638103	178642104	178716116	178720117
123	55225977	55229978	55433718	55437719
124	212372212	212376213	212479635	212483636
125	155955915	155959916	156024937	156028938
126	135916612	135920613	136103620	136107621
127	13822111	13826112	13929664	13933665
128	16817663	16821664	16982325	16986326
129	47283467	47287468	47426411	47430412
130	127661981	127665982	127811682	127815683
131	47497452	47501453	47634992	47638993
132	35866168	35870169	35894481	35898482
133	113432110	113436111	113565925	113569926
134	74592023	74596024	74636402	74640403
135	27616711	27620712	27679956	27683957
136	63858311	63862312	63884573	63888574
137	72635553	72639554	72886393	72890394

138	20372802	20376803	20390846	20394847
139	72301850	72305851	72369447	72373448
140	22240713	22244714	22296305	22300306
141	11258018	11262019	11544315	11548316
142	15176790	15180791	15414574	15418575
143	12713910	12717911	12794236	12798237
144	63802240	63806241	63884573	63888574
145	228458577	228462578	228715526	228719527
146	122243786	122247787	122357299	122361300
147	8145480	8149481	8191337	8195338
148	47294221	47298222	47426411	47430412
149	62505737	62509738	62564826	62568827
150	65754053	65758054	65956160	65960161
151	2687219	2691220	2801058	2805059
152	41963818	41967819	42133303	42137304
153	113432110	113436111	113660476	113664477
154	49758177	49762178	49864376	49868377
155	77692897	77696898	77783850	77787851

表15.c6

105	Hg38_13_33292777_33300074_33379042_33381537_FF	OBD183-3325
106	Hg38_13_33157099_33165940_33379042_33381537_FF	OBD183-3329
107	Hg38_14_20125056_20127850_20254086_20264765_FF	OBD183-3333
108	Hg38_22_22390196_22400635_22417372_22422635_RF	OBD183-3337
109	Hg38_2_90319634_90323094_90333145_90337129_FF	OBD183-3341
110	Hg38_1_205467613_205472592_205597487_205602829_RF	OBD183-3345
111	Hg38_8_105814873_105824107_105983420_105991962_RR	OBD183-3349
112	Hg38_3_139359866_139369158_139422950_139429189_FF	OBD183-3353
113	Hg38_11_93646250_93651617_93812658_93816548_FF	OBD183-3357
114	Hg38_2_218413367_218414625_218468442_218469889_FR	OBD183-3361
115	Hg38_21_33535825_33540136_33702336_33704782_RF	OBD183-3365
116	Hg38_15_25940901_25954083_26010869_26013845_RR	OBD183-3369
117	Hg38_2_152664286_152673031_152810778_152818515_FR	OBD183-3373
118	Hg38_16_88673445_88677147_88717058_88720423_RF	OBD183-3377
119	Hg38_11_55658006_55664056_55913134_55916714_FR	OBD183-3381
120	Hg38_19_12529097_12534237_12582615_12585911_RR	OBD183-3385
121	Hg38_9_106918096_106923299_106956084_106960240_RF	OBD183-3389
122	Hg38_5_178637588_178642104_178716116_178719743_FR	OBD183-3393
123	Hg38_5_55225977_55227096_55433718_55442449_RR	OBD183-3397
124	Hg38_1_212366521_212376213_212479522_212483636_FF	OBD183-3401

125	Hg38_3_155955915_155960464_156024474_156028938_RF	OBD183-3405
126	Hg38_6_135916612_135930758_136101114_136107621_RF	OBD183-3409
127	Hg38_6_13822111_13826619_13925547_13933665_RF	OBD183-3413
128	Hg38_19_16814077_16821664_16982325_16986644_FR	OBD183-3417
129	Hg38_20_47283636_47287468_47423313_47430412_FF	OBD183-3421
130	Hg38_2_127661293_127665982_127811240_127815683_FF	OBD183-3425
131	Hg38_11_47497688_47501453_47634992_47637905_FR	OBD183-3429
132	Hg38_9_35866168_35873586_35894481_35899234_RR	OBD183-3433
133	Hg38_12_113432110_113434599_113565905_113569926_RF	OBD183-3437
134	Hg38_2_74592023_74597081_74625034_74640403_RF	OBD183-3441
135	Hg38_2_27611917_27620712_27682649_27683957_FF	OBD183-3445
136	Hg38_3_63854804_63862312_63879711_63888574_FF	OBD183-3449
137	Hg38_7_72635553_72638872_72886393_72889737_RR	OBD183-3453
138	Hg38_11_20372802_20380788_20390846_20402338_RR	OBD183-3457
139	Hg38_9_72302739_72305851_72372195_72373448_FF	OBD183-3461
140	Hg38_Y_22235354_22244714_22295566_22300306_FF	OBD183-3465
141	Hg38_12_11258018_11266085_11544315_11547606_RR	OBD183-3469
142	Hg38_3_15171181_15180791_15414574_15417883_FR	OBD183-3473
143	Hg38_2_12713910_12715388_12794236_12801750_RR	OBD183-3477
144	Hg38_3_63794524_63806241_63879711_63888574_FF	OBD183-3481
145	Hg38_1_228460859_228462578_228712981_228719527_FF	OBD183-3485
146	Hg38_3_122243786_122250257_122357299_122361064_RR	OBD183-3489
147	Hg38_7_8143002_8149481_8188538_8195338_FF	OBD183-3493
148	Hg38_20_47296001_47298222_47423313_47430412_FF	OBD183-3497
149	Hg38_3_62505737_62515246_62564826_62570608_RR	OBD183-3501
150	Hg38_15_65754053_65760294_65952282_65960161_RF	OBD183-3505
151	Hg38_16_2687219_2688470_2801058_2807279_RR	OBD183-3509
152	Hg38_12_41964098_41967819_42126294_42137304_FF	OBD183-3513
153	Hg38_12_113432110_113434599_113654632_113664477_RF	OBD183-3517
154	Hg38_22_49757913_49762178_49865819_49868377_FF	OBD183-3521
155	Hg38_11_77692897_77698671_77781318_77787851_RF	OBD183-3525

表15.c7

105	TGGATGGGCCACTGGAACTCTAC	OBD183-3327	GGAGAGGCTATATACATATGGGC
106	GGTTTCACGAAATACTTAATTTGGC	OBD183-3331	AATAGGCAATAAGGGTGTGACCCAG
107	AAGGAAAGAAGCCAGACTAAAAAAA	OBD183-3335	AAGAAACAAATAGATGCCATAAAAA
108	TAAATATTTGGTTATTTTCTTTTT	OBD183-3339	AGAACTAAATAAAATTCAAACAAA

109	TGGGTTTATCATCAGATCCGCTAA	OBD183-3343	TCAATGAAATCACAAACTTCCTTA
110	TATAGTTTTAATTATATTTGTAAA	OBD183-3347	AGCCTGAGCACGGAGCCTTGTGAC
111	TGTAGGCCAACCAGAAGAAAAAAAAA	OBD183-3351	ATGAGCTTAAAATAGCCTGTTATAAG
112	TCAAAGCATGCTTTTTTCCTGTCAAA	OBD183-3355	CAGCTGAATATAAGCTCTAGTGGGGC
113	TTAAGTACAAAACAACAAAACATA	OBD183-3359	CTAGCCTGATACATAGAAAGTTTG
114	GGCAAATTACCAGCCTTAAGACATTA	OBD183-3363	CGTATACAAACTCAATAACAGTATGT
115	AGGTGTACTTGCAAGCACTTAAA	OBD183-3367	TTTTTTTTGAGACAGAGTTTCGT
116	CCCTGCAGGCACCTTGATGTT	OBD183-3371	AAATTGGAGCACAAAGTGACA
117	TTAGACATAAAACAACTCTATACTTG	OBD183-3375	AAAAAATAGATTTTTTAAAAGCTATG
118	GACGTGATGTCTGTGGCCGCCGAGTG	OBD183-3379	TCTTGAGGGGTTGAGTTAGTCACAAA
119	TGAGGCATTCTTTACTGCAGGTTTTT	OBD183-3383	GTGATGGAATCTGACCCTATTGCCCA
120	AGACCAATAAAACTTGTAGTG	OBD183-3387	TAATTATATAGCCCCTGAGAG
121	CTCTGTGCTTTGAAATGTGGCTG	OBD183-3391	AACTCATATATGGGCATATGCCC
122	TGTGTACACCAAAGCTGAGAC	OBD183-3395	TCAAGACTCTTAAGAGACTTC
123	TTTGCAGTTGGAAGAAGCAGGAA	OBD183-3399	TCCCAAAGTGCTGGGATTACAGG
124	ACTTAGTAGGTGTGCTTGGTGAGAT	OBD183-3403	GGTGTCAGACACGGGCCTCTAGGGT
125	GAGATTTGGCTATTGCTTTCTAATA	OBD183-3407	TACCATTTGATCTTTGACAAAGTTG
126	TACCAGACAGCATTCAAAGTGCTATT	OBD183-3411	AGTCAATTAACTACAGTTAGTAATAA
127	ATTTTTAGTAGTAGATTTTAT	OBD183-3415	GCCTCCCAAAGTGCTGGGATT
128	TCAAGAGATTCCCCTGTCTCAGCCT	OBD183-3419	TTCCAAATTTGGCTGTGGGAGTCCC
129	AACAGGATTAATTCTAATGGAAA	OBD183-3423	GGACTTTAGAAGGCCGAGACCAG
130	TAGCACTGGAAAGGAGGCTAC	OBD183-3427	CTCCCCCCTTTCTAGAGGCAG
131	GCCCATGCCTGTCAGGC	OBD183-3431	GAGGTTGAGGTGAGAGG

	AGAAG		ATCAC
132	GAAATATTGGGGAGATAGATATAGAT	OBD183-3435	TTCCTCCCCAACTATTTTAATAATTG
133	GAAAGATGAGAAGGTACTGAGG	OBD183-3439	GAGAGAGAGAGAAAGAAAGAAA
134	CAGCAAAACCAGAGGGGGAAC	OBD183-3443	ACAAAAATGCATGTATATACA
135	CAGAGAGATTGGGCTCAACTCCCTAT	OBD183-3447	GTTTCATTGAGAGACAGTCTCACACT
136	TCTAGCAATACTTGTCAGCTTT	OBD183-3451	ATTTTCATGTAATCACTACCAC
137	CTAAAATGTACATGGATATGCA	OBD183-3455	CCTTCAGGCAGAAGTAAAATGA
138	GGTCAACAGCTTTCAAAGACTTAAA	OBD183-3459	TTTTTTTTTTTTTGAGACGGCGTCT
139	TTAAGGTTTGTGTACTTTACTG	OBD183-3463	AAACATTAGCTTCACCAAAGAA
140	TCACAGCATCCATGCACTGTTTTCAT	OBD183-3467	TAGTTGTTTTGTAAACATAAAGCATT
141	TACAGGGTTTCTGCAGAGAGA	OBD183-3471	TAGAGGATGATATTTCAACAT
142	AAGTTTTTAATATCTATTTTTTT	OBD183-3475	TGTAGAGATGGGGTCTCACTATA
143	ATATTTTAATCTATAAAGTGAA	OBD183-3479	CAAAGCGTTCAACTTCACAGCA
144	TCTCCTGCACAAAGGATAAGCCAGAG	OBD183-3483	AGTACATATATGGTTCTGTGTCATCT
145	CATTGCTGGGTATATATCCAAAAG	OBD183-3487	TTTATAAAATCGTGTGTTTTCCAA
146	TCACTTAACATAATGATCTCCA	OBD183-3491	TACCAAGTAAGTGCAGTAATAA
147	CTAAGAAACTTTTCTCTGTTAA	OBD183-3495	TAGGGAACTGCAAATTAAAACA
148	CCATCCTGAATTTGTTTTCTT	OBD183-3499	AAGGCCGAGACCAGAGGATTG
149	TCTACCAATATTTGATGACCTAC	OBD183-3503	GGCCAACTTATCACCCATATCAG
150	TATACAAAGCCATTTCTATCAATCA	OBD183-3507	CATTAGGATTCATGCAGTTGCTATG
151	GAATGCCGAAGACCGCGGGCCCATG	OBD183-3511	TACAACAATAGTTGGAGATGTTAAT
152	AGGGAGACACTGACTCTTACTTACA	OBD183-3515	TTCAGTGAAAACTATGCAAAACTTA
153	GCCTAAACCCTTCCTACCCTGAACC	OBD183-3519	AGAAAGAAAGAAAGAAAGAAAA

154	AACAGCCAGCCCCAGAC TGCGTA	OBD183-3523	TGGTTTTACTGTTCTAGTT TTCC
155	GAACAAATATCAAGAAT ATCA	OBD183-3527	TCTCACAAACCTACTTTC ATT

表15.c8

	探針
1	Hg38_9_68303527_68306746_68525104_68533571_RF
2	Hg38_9_68229567_68233653_68303527_68306746_FR
3	Hg38_9_68303527_68306746_68514399_68520631_RF
4	Hg38_9_68257826_68261506_68303527_68306746_RR
5	Hg38_4_123688_131841_56291_68086_RR
6	Hg38_9_68303527_68306746_68456540_68471355_RF
7	Hg38_9_41124595_41127807_41231309_41234910_FR
8	Hg38_9_42182844_42186868_42375307_42380261_FF
9	Hg38_9_41124595_41127807_41178751_41183992_FF
10	Hg38_19_55776223_55778463_55877718_55881612_FR
11	Hg38_9_68242804_68246345_68303527_68306746_RR
12	Hg38_9_68242804_68246345_68303527_68306746_FR
13	Hg38_19_55776223_55778463_55820651_55823597_FR
14	Hg38_19_55776223_55778463_55881612_55885514_FR
15	Hg38_9_68235316_68242804_68303527_68306746_FR
16	Hg38_9_68303527_68306746_68412497_68421040_RF
17	Hg38_9_41124595_41127807_41166195_41173449_FF
18	Hg38_9_68303527_68306746_68329298_68333260_RF
19	Hg38_9_68257826_68261506_68303527_68306746_FR
20	Hg38_9_68303527_68306746_68504141_68510372_RR
21	Hg38_9_42088567_42092704_42182844_42186868_RF
22	Hg38_9_40955464_40963306_41124595_41127807_FF
23	Hg38_9_68303527_68306746_68378236_68383399_RF
24	Hg38_9_41124595_41127807_41382785_41386749_FF
25	Hg38_9_41124595_41127807_41277212_41282871_FR
26	Hg38_19_55776223_55778463_55915657_55927416_FF
27	Hg38_9_41124595_41127807_41188485_41195978_FR
28	Hg38_9_41124595_41127807_41266229_41270939_FF
29	Hg38_9_68303527_68306746_68359355_68363452_RR
30	Hg38_9_68303527_68306746_68482926_68489040_RF
31	Hg38_9_41068286_41072384_41124595_41127807_FF
32	Hg38_9_68303527_68306746_68421040_68425366_RR
33	Hg38_19_55776223_55778463_55885514_55887939_FF
34	Hg38_9_68229567_68233653_68303527_68306746_RR

35	Hg38_9_68303527_68306746_68525104_68533571_RR
36	Hg38_9_41124595_41127807_41188485_41195978_FF
37	Hg38_19_14562521_14568972_14688475_14695766_RF
38	Hg38_9_42182844_42186868_42196959_42202881_FF
39	Hg38_6_160589652_160594057_160698179_160704800_RR
40	Hg38_9_41048707_41054187_41124595_41127807_FF
41	Hg38_19_55776223_55778463_55854191_55856013_FF
42	Hg38_9_41124595_41127807_41303420_41308041_FF
43	Hg38_9_41124595_41127807_41318958_41323334_FF
44	Hg38_7_44468808_44471840_44579216_44580744_FR
45	Hg38_9_42182844_42186868_42337524_42343490_FR
46	Hg38_9_41124595_41127807_41359875_41368304_FF
47	Hg38_16_33810752_33813317_33866559_33876905_FR
48	Hg38_9_41124595_41127807_41372258_41379258_FF
49	Hg38_1_52914878_52920522_53043894_53056058_FR
50	Hg38_9_42004836_42010624_42182844_42186868_RF
51	Hg38_9_68303527_68306746_68378236_68383399_RR

表16.a

	基因	RP	FC:(1類/2類)
1	FOXD4L3、PGM5、TMEM252	110	-1.290134865
2	CBWD3、FOXD4L3、PGM5	158	-1.254348408
3	FOXD4L3、PGM5、CBWD3	224	-1.219042046
4	CBWD3、FOXD4L3、PGM5	207	-1.217965422
5	ZNF595、ZNF718、ZNF732	318	-1.216393188
6	FOXD4L3、PGM5、CBWD3	245	-1.212078575
7	FOXD4L6、CBWD7、CNTNAP3B	266	-1.210652608
8	SPATA31A6、CNTNAP3B、FP325317.1	377	-1.209875096
9	FOXD4L6、CBWD7、CNTNAP3B	344	-1.205770516
10	NLRP11、NLRP4、RFPL4AL1	374	-1.20555403
11	CBWD3、FOXD4L3、PGM5	287	-1.205119193
12	CBWD3、FOXD4L3、PGM5	326	-1.203167293
13	NLRP11、RFPL4AL1、NLRP4	425	-1.201939263
14	NLRP11、NLRP4、RFPL4AL1	484	-1.201300719
15	CBWD3、FOXD4L3、PGM5	453	-1.20126487
16	FOXD4L3、PGM5、CBWD3	296	-1.200977647
17	FOXD4L6、CBWD7、CNTNAP3B	325	-1.200419041
18	FOXD4L3、PGM5、CBWD3	384	-1.200314977
19	CBWD3、FOXD4L3、PGM5	408	-1.19957175

20	FOXD4L3、PGM5、CBWD3	354	-1.197651144
21	CNTNAP3B、SPATA31A6、CBWD7	447	-1.197247871
22	FOXD4L6、CBWD7、ANKRD20A2	438	-1.197034408
23	FOXD4L3、PGM5、CBWD3	393	-1.196839438
24	FOXD4L6、CBWD7、CNTNAP3B	417	-1.196163732
25	FOXD4L6、CBWD7、CNTNAP3B	410	-1.195190919
26	NLRP11、NLRP4、NLRP13	539	-1.192636225
27	FOXD4L6、CBWD7、CNTNAP3B	480	-1.19231014
28	FOXD4L6、CBWD7、CNTNAP3B	473	-1.190017758
29	FOXD4L3、PGM5、CBWD3	462	-1.189773923
30	FOXD4L3、PGM5、CBWD3	642	-1.188681121
31	FOXD4L6、CBWD7、CNTNAP3B	489	-1.188452991
32	FOXD4L3、PGM5、CBWD3	512	-1.188210085
33	NLRP11、NLRP4、RFPL4AL1	696	-1.187556712
34	CBWD3、FOXD4L3、PGM5	552	-1.186657847
35	FOXD4L3、PGM5、TMEM252	543	-1.186301372
36	FOXD4L6、CBWD7、CNTNAP3B	625	-1.185271258
37	TECR、NDUFB7、CLEC17A、EMR3、ZNF333	391	-1.183247059
38	SPATA31A6、CNTNAP3B、FP325317.1	918	-1.182902642
39	LPA、PLG、SLC22A3	644	-1.181168734
40	FOXD4L6、CBWD7、CNTNAP3B	728	-1.181031129
41	NLRP11、NLRP4、RFPL4AL1	749	-1.180850253
42	FOXD4L6、CBWD7、CNTNAP3B	691	-1.180838599
43	FOXD4L6、CBWD7、CNTNAP3B	722	-1.180746186
44	NUDCD3、NPC1L1、DDX56、TMED4	772	-1.177479228
45	SPATA31A6、CNTNAP3B、FP325317.1	1193	-1.175718431
46	FOXD4L6、CBWD7、CNTNAP3B	892	-1.175338282
47	RP11-812E19.9、TP53TG3C、TP53TG3B	560	-1.175336428
48	FOXD4L6、CBWD7、CNTNAP3B	903	-1.175282894
49	ECHDC2、SCP2、AL445183.1	1392	-1.171331332
50	CNTNAP3B、SPATA31A6、CBWD7	1241	-1.171176337
51	FOXD4L3、PGM5、CBWD3	987	-1.170887047

表16.b

					探針序列
	pfp	P值	CCS	**60 mer**	**Chr**
1	0	0.001084986	-1	9	68303527

2	0	0.000686863	-1	9	68233622
3	0	0.000173094	-1	9	68303527
4	0	0.000277015	-1	9	68257826
5	0	0.000759224	-1	4	123688
6	0	0.000537615	-1	9	68303527
7	0	0.000151233	-1	9	41127776
8	0	0.000268632	-1	9	42186837
9	0	0.000151381	-1	9	41127776
10	0	9.19074E-05	-1	19	55778432
11	0	0.000725742	-1	9	68242804
12	0	0.000653777	-1	9	68246314
13	0	0.000100087	-1	19	55778432
14	0	5.13774E-05	-1	19	55778432
15	0	0.000183863	-1	9	68242773
16	0	0.001110921	-1	9	68303527
17	0	0.000412487	-1	9	41127776
18	0	0.000293966	-1	9	68303527
19	0	0.000251118	-1	9	68261475
20	0	0.0004102	-1	9	68303527
21	0	0.000137602	-1	9	42088567
22	0	0.000324869	-1	9	40963275
23	0	0.000615417	-1	9	68303527
24	0	0.000535934	-1	9	41127776
25	0	0.000436084	-1	9	41127776
26	0	0.000146252	-1	19	55778432
27	0	0.000607614	-1	9	41127776
28	0	0.000704153	-1	9	41127776
29	0	0.000586521	-1	9	68303527
30	0	0.000178992	-1	9	68303527
31	0	0.001065991	-1	9	41072353
32	0	0.000876809	-1	9	68303527
33	0	0.000168308	-1	19	55778432
34	0	0.001049628	-1	9	68229567
35	0	0.000890121	-1	9	68303527
36	0	0.000499625	-1	9	41127776
37	0	0.001064797	-1	19	14562521
38	0	7.25727E-05	-1	9	42186837
39	0	0.000361285	-1	6	160589652
40	0	0.000923513	-1	9	41054156
41	0	0.000446969	-1	19	55778432
42	0	0.000661902	-1	9	41127776
43	0	0.000859979	-1	9	41127776
44	0	0.001148017	-1	7	44471809

45	0	5.24152E-05	-1	9	42186837
46	0	0.00073806	-1	9	41127776
47	0	0.001283737	-1	16	33813286
48	0	0.001209464	-1	9	41127776
49	0	0.001791256	-1	1	52920491
50	0	0.00012103	-1	9	42004836
51	0	0.001013134	-1	9	68303527

表16.c

	探針位置				
	開始1	結束1	開始2	結束2	Chr
1	68303558	68533540	68533571	9	68303527
2	68233653	68303527	68303558	9	68229652
3	68303558	68520600	68520631	9	68303527
4	68257857	68303527	68303558	9	68257826
5	123719	56291	56322	4	123688
6	68303558	68471324	68471355	9	68303527
7	41127807	41231309	41231340	9	41123806
8	42186868	42380230	42380261	9	42182867
9	41127807	41183961	41183992	9	41123806
10	55778463	55877718	55877749	19	55774462
11	68242835	68303527	68303558	9	68242804
12	68246345	68303527	68303558	9	68242344
13	55778463	55820651	55820682	19	55774462
14	55778463	55881612	55881643	19	55774462
15	68242804	68303527	68303558	9	68238803
16	68303558	68421009	68421040	9	68303527
17	41127807	41173418	41173449	9	41123806
18	68303558	68333229	68333260	9	68303527
19	68261506	68303527	68303558	9	68257505
20	68303558	68504141	68504172	9	68303527
21	42088598	42186837	42186868	9	42088567
22	40963306	41127776	41127807	9	40959305
23	68303558	68383368	68383399	9	68303527
24	41127807	41386718	41386749	9	41123806
25	41127807	41277212	41277243	9	41123806
26	55778463	55927385	55927416	19	55774462
27	41127807	41188485	41188516	9	41123806
28	41127807	41270908	41270939	9	41123806
29	68303558	68359355	68359386	9	68303527
30	68303558	68489009	68489040	9	68303527
31	41072384	41127776	41127807	9	41068383
32	68303558	68421040	68421071	9	68303527

33	55778463	55887908	55887939	19	55774462
34	68229598	68303527	68303558	9	68229567
35	68303558	68525104	68525135	9	68303527
36	41127807	41195947	41195978	9	41123806
37	14562552	14695735	14695766	19	14562521
38	42186868	42202850	42202881	9	42182867
39	160589683	160698179	160698210	6	160589652
40	41054187	41127776	41127807	9	41050186
41	55778463	55855982	55856013	19	55774462
42	41127807	41308010	41308041	9	41123806
43	41127807	41323303	41323334	9	41123806
44	44471840	44579216	44579247	7	44467839
45	42186868	42337524	42337555	9	42182867
46	41127807	41368273	41368304	9	41123806
47	33813317	33866559	33866590	16	33809316
48	41127807	41379227	41379258	9	41123806
49	52920522	53043894	53043925	1	52916521
50	42004867	42186837	42186868	9	42004836
51	68303558	68378236	68378267	9	68303527

表16.d

	4 kb序列位置		
	開始1	**結束1**	**開始2**
1	68307528	68529570	68533571
2	68233653	68303527	68307528
3	68307528	68516630	68520631
4	68261827	68303527	68307528
5	127689	56291	60292
6	68307528	68467354	68471355
7	41127807	41231309	41235310
8	42186868	42376260	42380261
9	41127807	41179991	41183992
10	55778463	55877718	55881719
11	68246805	68303527	68307528
12	68246345	68303527	68307528
13	55778463	55820651	55824652
14	55778463	55881612	55885613
15	68242804	68303527	68307528
16	68307528	68417039	68421040
17	41127807	41169448	41173449
18	68307528	68329259	68333260

19	68261506	68303527	68307528
20	68307528	68504141	68508142
21	42092568	42182867	42186868
22	40963306	41123806	41127807
23	68307528	68379398	68383399
24	41127807	41382748	41386749
25	41127807	41277212	41281213
26	55778463	55923415	55927416
27	41127807	41188485	41192486
28	41127807	41266938	41270939
29	68307528	68359355	68363356
30	68307528	68485039	68489040
31	41072384	41123806	41127807
32	68307528	68421040	68425041
33	55778463	55883938	55887939
34	68233568	68303527	68307528
35	68307528	68525104	68529105
36	41127807	41191977	41195978
37	14566522	14691765	14695766
38	42186868	42198880	42202881
39	160593653	160698179	160702180
40	41054187	41123806	41127807
41	55778463	55852012	55856013
42	41127807	41304040	41308041
43	41127807	41319333	41323334
44	44471840	44579216	44583217
45	42186868	42337524	42341525
46	41127807	41364303	41368304
47	33813317	33866559	33870560
48	41127807	41375257	41379258
49	52920522	53043894	53047895
50	42008837	42182867	42186868
51	68307528	68378236	68382237

表16.e

	qPCR引子集	
	探針	qPCR引子ID
1	Hg38_9_68303527_68306746_68525104_68533571_RF	OBD183-q1317
2	Hg38_9_68229567_68233653_68303527_68306746_FR	OBD183-q1321
3	Hg38_9_68303527_68306746_68514399_68520631_RF	OBD183-q1325
4	Hg38_9_68257826_68261506_68303527_68306746_RR	OBD183-q1329

5	Hg38_4_123688_131841_56291_68086_RR	OBD183-q1333
6	Hg38_9_68303527_68306746_68456540_68471355_RF	OBD183-q1337
7	Hg38_9_41124595_41127807_41231309_41234910_FR	OBD183-q1341
8	Hg38_9_42182844_42186868_42375307_42380261_FF	OBD183-q1345
9	Hg38_9_41124595_41127807_41178751_41183992_FF	OBD183-q1349
10	Hg38_19_55776223_55778463_55877718_55881612_FR	OBD183-q1353
11	Hg38_9_68242804_68246345_68303527_68306746_RR	OBD183-q1357
12	Hg38_9_68242804_68246345_68303527_68306746_FR	OBD183-q1361
13	Hg38_19_55776223_55778463_55820651_55823597_FR	OBD183-q1365
14	Hg38_19_55776223_55778463_55881612_55885514_FR	OBD183-q1369
15	Hg38_9_68235316_68242804_68303527_68306746_FR	OBD183-q1373
16	Hg38_9_68303527_68306746_68412497_68421040_RF	OBD183-q1377
17	Hg38_9_41124595_41127807_41166195_41173449_FF	OBD183-q1381
18	Hg38_9_68303527_68306746_68329298_68333260_RF	OBD183-q1385
19	Hg38_9_68257826_68261506_68303527_68306746_FR	OBD183-q1389
20	Hg38_9_68303527_68306746_68504141_68510372_RR	OBD183-q1393
21	Hg38_9_42088567_42092704_42182844_42186868_RF	OBD183-q1397
22	Hg38_9_40955464_40963306_41124595_41127807_FF	OBD183-q1401
23	Hg38_9_68303527_68306746_68378236_68383399_RF	OBD183-q1405
24	Hg38_9_41124595_41127807_41382785_41386749_FF	OBD183-q1409
25	Hg38_9_41124595_41127807_41277212_41282871_FR	OBD183-q1413
26	Hg38_19_55776223_55778463_55915657_55927416_FF	OBD183-q1417
27	Hg38_9_41124595_41127807_41188485_41195978_FR	OBD183-q1421
28	Hg38_9_41124595_41127807_41266229_41270939_FF	OBD183-q1425
29	Hg38_9_68303527_68306746_68359355_68363452_RR	OBD183-q1429
30	Hg38_9_68303527_68306746_68482926_68489040_RF	OBD183-q1433
31	Hg38_9_41068286_41072384_41124595_41127807_FF	OBD183-q1437
32	Hg38_9_68303527_68306746_68421040_68425366_RR	OBD183-q1441
33	Hg38_19_55776223_55778463_55885514_55887939_FF	OBD183-q1445
34	Hg38_9_68229567_68233653_68303527_68306746_RR	OBD183-q1449
35	Hg38_9_68303527_68306746_68525104_68533571_RR	OBD183-q1453
36	Hg38_9_41124595_41127807_41188485_41195978_FF	OBD183-q1457
37	Hg38_19_14562521_14568972_14688475_14695766_RF	OBD183-q1461
38	Hg38_9_42182844_42186868_42196959_42202881_FF	OBD183-q1465
39	Hg38_6_160589652_160594057_160698179_160704800_RR	OBD183-q1469
40	Hg38_9_41048707_41054187_41124595_41127807_FF	OBD183-q1473
41	Hg38_19_55776223_55778463_55854191_55856013_FF	OBD183-q1477
42	Hg38_9_41124595_41127807_41303420_41308041_FF	OBD183-q1481
43	Hg38_9_41124595_41127807_41318958_41323334_FF	OBD183-q1485
44	Hg38_7_44468808_44471840_44579216_44580744_FR	OBD183-q1489
45	Hg38_9_42182844_42186868_42337524_42343490_FR	OBD183-q1493
46	Hg38_9_41124595_41127807_41359875_41368304_FF	OBD183-q1497
47	Hg38_16_33810752_33813317_33866559_33876905_FR	OBD183-q1501

48	Hg38_9_41124595_41127807_41372258_41379258_FF	OBD183-q1505
49	Hg38_1_52914878_52920522_53043894_53056058_FR	OBD183-q1509
50	Hg38_9_42004836_42010624_42182844_42186868_RF	OBD183-q1513
51	Hg38_9_68303527_68306746_68378236_68383399_RR	OBD183-q1517

表16.f

	qPCR引子集		
	序列	qPCR引子ID	qPCR反向序列
1	TGAGATCGTTTGTCAACTTTTACTG	OBD183-q1319	GATGCGGGTGCAGCAGAGCGTAAGG
2	TAAGAAATTAATATTAAAATATATTG	OBD183-q1323	GGGTAGGCCCCCGGGACTGGCTGCGG
3	TAACACACCTGACTTAATAGGCACA	OBD183-q1327	CCCGGGGGCGGTGTTGGGGTAGGCC
4	AGAATGAGTTTAATTATGCTAA	OBD183-q1331	GGGCCTGGGCGGGGGTTGTGCA
5	GCATACACAAACTTGTTCACAAA	OBD183-q1335	AAACTTGTATTTCTCAAATAAAA
6	TAGTCAGAGACTGAAGACTTCCA	OBD183-q1339	CCGGGACTGGCTGCGGCGGGGCA
7	CAGGGCGGCGTGTGCAGCAGGT	OBD183-q1343	GACTAAATGGCATTAAAAGAGG
8	AAATGTTGGATCATTTACAAATCAA	OBD183-q1347	CTTAAGGCACAAATACAAAATAATG
9	CCCGGGGGCGGTGTTGGGGTA	OBD183-q1351	TATTCATGCAGCCTTGATACC
10	AAATATTTGGGTCTGTGCAGTAGA	OBD183-q1355	CTGCCAAAATTTATACGTTGAAGT
11	CGGAAACAGTATTATTTTATT	OBD183-q1359	GAGCGTAAGGGCGTCTCCCGG
12	AGACGATTTCTTTTAAAATGTACT	OBD183-q1363	ATGCGGGTGCAGCAGAGCGTAAGG
13	CTGTGCAGTAGAAAGGCAGAG	OBD183-q1367	CAACACGACACCTGTATGTAC
14	GTGTGTGTCTTTGCTGAACTAC	OBD183-q1371	CAGTGACTCATCCAAGGCCACA
15	CAGGAAGTGCTCCTATCTTAAA	OBD183-q1375	GACTGGCTGCGGCGGGGCAGGG
16	GCACAGATGGTTTTGAATGTGCTTT	OBD183-q1379	GTAGGCCCCCGGGACTGGCTGCGGC
17	AGGGCCTGGGTGGGGGTTGTGC	OBD183-q1383	TACCAATTCATTTTGCAATCTC
18	CTCCCAAAGTGCTGGGATTACAGG	OBD183-q1387	GCGGGTGCAGCAGAGCGTAAGGGC
19	CCCTATAGCCCTTCATGA	OBD183-q1391	CCCGGGGGCGGTGTTGGG

	AGTTAGGT		GTAGGCCC
20	GCGGCGTGTGCAGCAGGTAGA	OBD183-q1395	CTGAGATGGAGAAGAATGAAA
21	ACAGAAACAGCCAAGGTCAACATTT	OBD183-q1399	ACTAAATTTTTTATCTGTGCCTTTT
22	CTAGACGTGCTGGCACACACCT	OBD183-q1403	GGGCCCCAAGCAGAGGGCCTGG
23	CACATACATACTTTACATTTTTA	OBD183-q1407	TGCGGCGGGGCAGGGGCCCCAAG
24	GGGCGGTGTTGGGGTAGGCCCCC	OBD183-q1411	AGACTGTCAATGACAACTGTGTC
25	GCAGGGCGGCGTGTGCAGCAGGTAGA	OBD183-q1415	AAACACCTATGTCAAAAAGTATGAAA
26	GTGTGTGTCTTTGCTGAACTACCG	OBD183-q1419	CTGGGTGTGGTGGTGGGCGCCTGT
27	GGGTTGTGCAGGGCGGCGTGTGC	OBD183-q1423	AGTGCTCCTATCTTAAACACTTT
28	GCGTCTCCCGGGGGCGGTGTT	OBD183-q1427	GGAGTATACTGTGAACAACTG
29	CAGGGGCCCCAAGCAGAGGGCCTGG	OBD183-q1431	TTGCTTATAATTATCCAGTTCTTTT
30	GCTAAGTAGTTAAAGGAGTTCCCAG	OBD183-q1435	CTGGGCGGGGGTTGTGCAGGGCGGC
31	TTCACTTTAGCATAAGCCCCCAAG	OBD183-q1439	GGCGGTGTTGGGGTAGGCCCCCGG
32	TTGGGGTAGGCCCCCGGGACTGGC	OBD183-q1443	AGAAGAAGCAGGCCCTAGGCAGAG
33	TAAAATATTTGGGTCTGTGCAGTAGA	OBD183-q1447	TTTTATAAGCTATGAAATGCTAAATG
34	TAGCACTATTGTTTTAAAGGTGAGA	OBD183-q1451	GGGCGGTGTTGGGGTAGGCCCCCGG
35	CGGCGGGGCAGGGGCCCCAAGCAGA	OBD183-q1455	AATGAATGATATATTTGATGAAAAG
36	GAGGGCCTGGGTGGGGGTTGTGCAG	OBD183-q1459	GTATGGTGTAATAGTTTAGGAGAGA
37	GTTGGTGAGTACCAGGCAGGCTGT	OBD183-q1463	TCCTGGGCTATAAGGATTGGGGTC
38	GACCCCAGAAAAGCACTTAAAT	OBD183-q1467	AATATGTTGTTATTAACTATAG
39	CTCATGCTTCTGTGTTCTGGAAA	OBD183-q1471	AACTGCCATTCTAGGACAGCTCA
40	GCAGGGTAGGGGGAGCACTGAC	OBD183-q1475	TCTCCCGGGGGCGGTGTTGGGG
41	TTCTTTGCACAGTGGATATGAC	OBD183-q1479	GGGAAGCTCACTGTTAGAACTG
42	CCAAGCAGAGGGCCTGG	OBD183-q1483	CCATCACTAACCTCTGGA

	GTGG		AAT
43	CAGGGCGGCGTGTGCAGCAGG	OBD183-q1487	GCTGCCCTCCAGATCCCAGAA
44	CCTACTCAGGGACACACTGAGGCCAC	OBD183-q1491	AACCATTCAGATCAGCCACTTGCTGA
45	AAGGTCAACATTTGGGAAGAAA	OBD183-q1495	AATTCTTCCCATTACCGTGTTT
46	GCGGTGTTGGGGTAGGCCCCCGGGA	OBD183-q1499	TAACTTAATCACAAGCATTGCCATA
47	TTCTTCCTCCCATCCCTCTCCCT	OBD183-q1503	TTCCAAAATTGTATGAGATCCA
48	GCCCCCGGGACTGGCTGCGGCGGGGC	OBD183-q1507	GCCATAGACTGTGATAAATTATTCCA
49	ATGGCAAAGCCCCGCTTCAAAC	OBD183-q1511	AAATCACTGAAACAAGATAGAA
50	GTCACAGAAACAGCCAAGGTCA	OBD183-q1515	GAAAATTAAAGATAGAGATCAA
51	GCGTCTCCCGGGGGCGGTGTTGGG	OBD183-q1519	TATAATAATATAAGAGGAAAGAAA

表16.g

	qPCR引子集	
	探針ID	探針序列
1	OBD183-p1317	GGCTTTCTGCACAGGAAGTCGACAATGGCAGCTTTCTCCG
2	OBD183-p1321	AATATGTTGAATTTACTTTCGACAATGGCAGCTTTCTCCG
3	OBD183-p1325	TTATAAGGGCAACTGAATTCGACAATGGCAGCTTTCTCCG
4	OBD183-p1329	TGAAAAAGTAAGAAAATTTCGACAATGGCAGCTTTCTCCG
5	OBD183-p1333	AATTTTTTATTAGCCACATCGATTAAACCTGAGAAATTCT
6	OBD183-p1337	AATCCCTAAAGTTGTGCTTCGACAATGGCAGCTTTCTCCG
7	OBD183-p1341	CGGAGAAAGCTGCCATTGTCGAAAATATTTTTCTTGGAAT
8	OBD183-p1345	TGGAACATGGGAGAGAACTCGATCAGTCAGTGAGACTTGC
9	OBD183-p1349	CGGAGAAAGCTGCCATTGTCGATTTAGAAAGTTTACCCTG
10	OBD183-p1353	AGGAGCAAGCTGAGAGGTTCGATAACCATCTGTCTTCTCC
11	OBD183-p1357	GTTCACAAACTTGTGGTTTCGACAATGGCAGCTTTCTCCG
12	OBD183-p1361	GTTATATTCCAGTTATATTCGACAATGGCAGCTTTCTCCG
13	OBD183-p1365	AGGAGCAAGCTGAGAGGTTCGAAAACTTAGTTTTTCAAAA
14	OBD183-p1369	AGGAGCAAGCTGAGAGGTTCGAACACCTGCAAAGGACAGG
15	OBD183-p1373	TAGAGTGTACAGGGATACTCGACAATGGCAGCTTTCTCCG
16	OBD183-p1377	AAGCTGATGAAAGCTAGGTCGACAATGGCAGCTTTCTCCG
17	OBD183-p1381	CGGAGAAAGCTGCCATTGTCGAAATTTTCTTACTTTTTCA
18	OBD183-p1385	TGTATTAATGAATGAGGTTCGACAATGGCAGCTTTCTCCG
19	OBD183-p1389	AATTACATTATCAAACAATCGACAATGGCAGCTTTCTCCG
20	OBD183-p1393	CGGAGAAAGCTGCCATTGTCGATCTCTGTCTTCTAGACTT
21	OBD183-p1397	TGGAACATGGGAGAGAACTCGAAACACATTTTGCTATAGA

22	OBD183-p1401	GTGTATTATGAGCTACGATCGACAATGGCAGCTTTCTCCG
23	OBD183-p1405	TAAAAATTATTAATGCAATCGACAATGGCAGCTTTCTCCG
24	OBD183-p1409	CGGAGAAAGCTGCCATTGTCGAAGACAACAAGAGTATGTG
25	OBD183-p1413	CGGAGAAAGCTGCCATTGTCGATTTTGTTTATCTTTTCAA
26	OBD183-p1417	AGGAGCAAGCTGAGAGGTTCGAAGGCAAATGTGTCATATA
27	OBD183-p1421	CGGAGAAAGCTGCCATTGTCGAGTATCCCTGTACACTCTA
28	OBD183-p1425	CGGAGAAAGCTGCCATTGTCGATTACTAATTCAATCTGCT
29	OBD183-p1429	CGGAGAAAGCTGCCATTGTCGACTCTTAAATAATCTGAAA
30	OBD183-p1433	GACTTCATTGTGCAAACATCGACAATGGCAGCTTTCTCCG
31	OBD183-p1437	TTTCAGATTCTTTAAGAGTCGACAATGGCAGCTTTCTCCG
32	OBD183-p1441	CGGAGAAAGCTGCCATTGTCGACGAATAATGTGTGATGAG
33	OBD183-p1445	AGGAGCAAGCTGAGAGGTTCGATGTGTCATGGATGGAAAT
34	OBD183-p1449	AAGGCTTTGCATCGTATTTCGACAATGGCAGCTTTCTCCG
35	OBD183-p1453	CGGAGAAAGCTGCCATTGTCGATGACATGAGAGAAGAGTT
36	OBD183-p1457	CGGAGAAAGCTGCCATTGTCGAGGGAATAGAAAGGGGAAG
37	OBD183-p1461	CTTTGTTCTGAGGGGACATCGAGGTGGAGATTCTGGACGC
38	OBD183-p1465	TGGAACATGGGAGAGAACTCGAATCTGAAAAAGCTAAACT
39	OBD183-p1469	TGGTGATGGACAGAGTTATCGAAGGCACAGATAAACTTGC
40	OBD183-p1473	AACATCTGCTTCTGATAATCGACAATGGCAGCTTTCTCCG
41	OBD183-p1477	AGGAGCAAGCTGAGAGGTTCGAAAACTAAAACCAGTTGCT
42	OBD183-p1481	CGGAGAAAGCTGCCATTGTCGACACATGCAATAACTTGCA
43	OBD183-p1485	CGGAGAAAGCTGCCATTGTCGATGTTCCAAAATAATCTGC
44	OBD183-p1489	ATGAAGCAACAGGTCTAATCGAGGCAAAAGAAGCAGGACT
45	OBD183-p1493	TGGAACATGGGAGAGAACTCGATCTTATATTTTCATGGTG
46	OBD183-p1497	CGGAGAAAGCTGCCATTGTCGAGTTTAGTAGGCCGAATAG
47	OBD183-p1501	CTGCATCCGTCCTGAGCATCGAATAGCCATGGTTAAAGGC
48	OBD183-p1505	CGGAGAAAGCTGCCATTGTCGATGCATTTTGGTTGCATTT
49	OBD183-p1509	AAGAGGAGCAGAAGAAACTCGAGTATTAAGAGAAGATTTT
50	OBD183-p1513	TGGAACATGGGAGAGAACTCGATGAATACACAAAGCTTTC
51	OBD183-p1517	CGGAGAAAGCTGCCATTGTCGACACCTGCGGTCTCCTGCA

表16.h

	qPCR引子集	
	探針ID	探針序列
1	OBD183-p1319	CGGAGAAAGCTGCCATTGTCGACTTCCTGTGCAGAAAGCC
2	OBD183-p1323	CGGAGAAAGCTGCCATTGTCGAAAGTAAATTCAACATATT
3	OBD183-p1327	CGGAGAAAGCTGCCATTGTCGAATTCAGTTGCCCTTATAA
4	OBD183-p1331	CGGAGAAAGCTGCCATTGTCGAAATTTTCTTACTTTTTCA
5	OBD183-p1335	AGAATTTCTCAGGTTTAATCGATGTGGCTAATAAAAAATT
6	OBD183-p1339	CGGAGAAAGCTGCCATTGTCGAAGCACAACTTTAGGGATT
7	OBD183-p1343	ATTCCAAGAAAAATATTTTCGACAATGGCAGCTTTCTCCG
8	OBD183-p1347	GCAAGTCTCACTGACTGATCGAGTTCTCTCCCATGTTCCA
9	OBD183-p1351	CAGGGTAAACTTTCTAAATCGACAATGGCAGCTTTCTCCG

10	OBD183-p1355	GGAGAAGACAGATGGTTATCGAACCTCTCAGCTTGCTCCT
11	OBD183-p1359	CGGAGAAAGCTGCCATTGTCGAAACCACAAGTTTGTGAAC
12	OBD183-p1363	CGGAGAAAGCTGCCATTGTCGAATATAACTGGAATATAAC
13	OBD183-p1367	TTTTGAAAAACTAAGTTTTCGAACCTCTCAGCTTGCTCCT
14	OBD183-p1371	CCTGTCCTTTGCAGGTGTTCGAACCTCTCAGCTTGCTCCT
15	OBD183-p1375	CGGAGAAAGCTGCCATTGTCGAGTATCCCTGTACACTCTA
16	OBD183-p1379	CGGAGAAAGCTGCCATTGTCGACCTAGCTTTCATCAGCTT
17	OBD183-p1383	TGAAAAAGTAAGAAAATTTCGACAATGGCAGCTTTCTCCG
18	OBD183-p1387	CGGAGAAAGCTGCCATTGTCGAACCTCATTCATTAATACA
19	OBD183-p1391	CGGAGAAAGCTGCCATTGTCGATTGTTTGATAATGTAATT
20	OBD183-p1395	AAGTCTAGAAGACAGAGATCGACAATGGCAGCTTTCTCCG
21	OBD183-p1399	TCTATAGCAAAATGTGTTTCGAGTTCTCTCCCATGTTCCA
22	OBD183-p1403	CGGAGAAAGCTGCCATTGTCGATCGTAGCTCATAATACAC
23	OBD183-p1407	CGGAGAAAGCTGCCATTGTCGATTGCATTAATAATTTTTA
24	OBD183-p1411	CACATACTCTTGTTGTCTTCGACAATGGCAGCTTTCTCCG
25	OBD183-p1415	TTGAAAAGATAAACAAAATCGACAATGGCAGCTTTCTCCG
26	OBD183-p1419	TATATGACACATTTGCCTTCGAACCTCTCAGCTTGCTCCT
27	OBD183-p1423	TAGAGTGTACAGGGATACTCGACAATGGCAGCTTTCTCCG
28	OBD183-p1427	AGCAGATTGAATTAGTAATCGACAATGGCAGCTTTCTCCG
29	OBD183-p1431	TTTCAGATTATTTAAGAGTCGACAATGGCAGCTTTCTCCG
30	OBD183-p1435	CGGAGAAAGCTGCCATTGTCGATGTTTGCACAATGAAGTC
31	OBD183-p1439	CGGAGAAAGCTGCCATTGTCGACTCTTAAAGAATCTGAAA
32	OBD183-p1443	CTCATCACACATTATTCGTCGACAATGGCAGCTTTCTCCG
33	OBD183-p1447	ATTTCCATCCATGACACATCGAACCTCTCAGCTTGCTCCT
34	OBD183-p1451	CGGAGAAAGCTGCCATTGTCGAAATACGATGCAAAGCCTT
35	OBD183-p1455	AACTCTTCTCTCATGTCATCGACAATGGCAGCTTTCTCCG
36	OBD183-p1459	CTTCCCCTTTCTATTCCCTCGACAATGGCAGCTTTCTCCG
37	OBD183-p1463	GCGTCCAGAATCTCCACCTCGATGTCCCCTCAGAACAAAG
38	OBD183-p1467	AGTTTAGCTTTTTCAGATTCGAGTTCTCTCCCATGTTCCA
39	OBD183-p1471	GCAAGTTTATCTGTGCCTTCGATAACTCTGTCCATCACCA
40	OBD183-p1475	CGGAGAAAGCTGCCATTGTCGATTATCAGAAGCAGATGTT
41	OBD183-p1479	AGCAACTGGTTTTAGTTTTCGAACCTCTCAGCTTGCTCCT
42	OBD183-p1483	TGCAAGTTATTGCATGTGTCGACAATGGCAGCTTTCTCCG
43	OBD183-p1487	GCAGATTATTTTGGAACATCGACAATGGCAGCTTTCTCCG
44	OBD183-p1491	AGTCCTGCTTCTTTTGCCTCGATTAGACCTGTTGCTTCAT
45	OBD183-p1495	CACCATGAAAATATAAGATCGAGTTCTCTCCCATGTTCCA
46	OBD183-p1499	CTATTCGGCCTACTAAACTCGACAATGGCAGCTTTCTCCG
47	OBD183-p1503	GCCTTTAACCATGGCTATTCGATGCTCAGGACGGATGCAG
48	OBD183-p1507	AAATGCAACCAAAATGCATCGACAATGGCAGCTTTCTCCG
49	OBD183-p1511	AAAATCTTCTCTTAATACTCGAGTTTCTTCTGCTCCTCTT
50	OBD183-p1515	GAAAGCTTTGTGTATTCATCGAGTTCTCTCCCATGTTCCA
51	OBD183-p1519	TGCAGGAGACCGCAGGTGTCGACAATGGCAGCTTTCTCCG

表16.i

	探針
1	Hg38_8_1065878_1072182_1294593_1298847_FR
2	Hg38_8_1065878_1072182_1251550_1259542_FF
3	Hg38_21_32595335_32598768_32668930_32673465_RR
4	Hg38_7_30804622_30809524_31042032_31049335_RR
5	Hg38_8_1065878_1072182_1294593_1298847_FF
6	Hg38_20_62119683_62122759_62181248_62187845_FF
7	Hg38_5_21320172_21325144_21521563_21530474_FR
8	Hg38_8_127032863_127038478_127164971_127180591_FR
9	Hg38_X_471766_472952_572091_577133_FF
10	Hg38_2_226398167_226405087_226440513_226448036_RF
11	Hg38_9_79741852_79744338_79874571_79886027_FR
12	Hg38_X_471766_472952_505129_507941_FR
13	Hg38_8_1065878_1072182_1234660_1244165_FF
14	Hg38_3_115538014_115553821_115677249_115687258_FR
15	Hg38_10_16636423_16644321_16683873_16690220_RR
16	Hg38_4_189601545_189607715_189807488_189815403_FR
17	Hg38_2_103810436_103819784_103869265_103870416_RF
18	Hg38_19_56611172_56614578_56759775_56765600_FF
19	Hg38_8_1065878_1072182_1234660_1244165_FR
20	Hg38_11_44700518_44702687_44834704_44845205_FR
21	Hg38_16_85802241_85804577_85821758_85824343_RR
22	Hg38_9_42157848_42164656_42182844_42186868_RF
23	Hg38_16_33810752_33813317_33866559_33876905_FF
24	Hg38_5_21320172_21325144_21422901_21430361_FF
25	Hg38_9_42094972_42099378_42182844_42186868_RF
26	Hg38_2_103801409_103809996_103869265_103870416_RF
27	Hg38_9_42054487_42058368_42182844_42186868_RF
28	Hg38_19_21616344_21621521_21718358_21724849_RF
29	Hg38_9_42182844_42186868_42375307_42380261_FR
30	Hg38_4_56291_68086_79642_82274_RF
31	Hg38_16_1478329_1482863_1534600_1537498_FR
32	Hg38_16_69335108_69337953_69444355_69445761_RR
33	Hg38_9_42182844_42186868_42204492_42209146_FR
34	Hg38_1_94081020_94084795_94209095_94219006_FF
35	Hg38_5_21320172_21325144_21422901_21430361_FR
36	Hg38_9_40955464_40963306_41124595_41127807_RF
37	Hg38_20_62119683_62122759_62223291_62234122_FF
38	Hg38_4_9448543_9452043_9532817_9534912_FR

39	Hg38_9_41124595_41127807_41266229_41270939_FR
40	Hg38_9_42182844_42186868_42404332_42409995_FF
41	Hg38_7_39117241_39123206_39259249_39270867_RF
42	Hg38_4_189601545_189607715_189644283_189649909_FF
43	Hg38_21_32595335_32598768_32631264_32636348_RR
44	Hg38_5_141776058_141780266_141939429_141944431_FF
45	Hg38_15_21705062_21710035_21848007_21855007_FF
46	Hg38_16_5093594_5094678_5173945_5180731_FF
47	Hg38_9_42182844_42186868_42248403_42250983_FR
48	Hg38_2_103869265_103870416_103906343_103916480_FF
49	Hg38_7_94000334_94003926_94158341_94164583_FF
50	Hg38_16_33810752_33813317_33958121_33967789_FF

表17.a1

	基因	RP	FC:(1類/2類)
1	DLGAP2、ERICH1、CLN8	119	-1.23793833
2	DLGAP2、ERICH1、CLN8	139	-1.226289768
3	AP000275.65、C21orf59、SYNJ1	412	-1.216645834
4	INMT-FAM188B、FAM188B、RP5-877J2.1、AQP1、GHRHR	684	-1.203429214
5	DLGAP2、ERICH1、CLN8	295	-1.201900393
6	LSM14B、PSMA7、SS18L1、MTG2	861	-1.197039833
7	CDH12、CDH18、PRDM9	327	-1.195159185
8	POU5F1B、AC108925.1、FAM84B	1097	-1.193537364
9	SHOX、PPP2R3B、GTPBP6	565	-1.188392584
10	IRS1、RHBDD1、COL4A4	1020	-1.183418789
11	TLE4、PSAT1、CEP78	616	-1.182899683
12	PPP2R3B、SHOX、GTPBP6	558	-1.182630747
13	DLGAP2、ERICH1、CLN8	634	-1.179579992
14	GAP43、LSAMP、ZBTB20	1313	-1.179068051
15	RSU1、C1QL3、PTER	926	-1.17493306
16	FRG1、FRG2、DUX4	1022	-1.174925237
17	TMEM182、POU3F3、MFSD9	1483	-1.173689703
18	ZNF71、SMIM17、ZNF835	1215	-1.172676432
19	DLGAP2、ERICH1、CLN8	1321	-1.172621568
20	TSPAN18、TP53I11、CD82	1652	-1.170738776
21	COX4I1、EMC8、C16orf74	1368	-1.170192605
22	SPATA31A6、CNTNAP3B、FP325317.1	1171	-1.169675778

23	RP11-812E19.9、TP53TG3C、TP53TG3B	761	-1.169120815
24	CDH12、CDH18、PRDM9	773	-1.169064746
25	CNTNAP3B、SPATA31A6、CBWD7	1515	-1.168675229
26	TMEM182、POU3F3、MFSD9	1677	-1.168583316
27	CNTNAP3B、SPATA31A6、CBWD7	1608	-1.168290973
28	ZNF100、ZNF429、ZNF43	1787	-1.167969398
29	SPATA31A6、CNTNAP3B、FP325317.1	1400	-1.167520389
30	ZNF595、ZNF718、ZNF732	955	-1.167473267
31	PTX4、TELO2、IFT140、TMEM204	806	-1.166920761
32	COG8、RP11-343C2.9、RP11-343C2.7、NIP7、TMED6、TERF2、CYB5B	1350	-1.166582325
33	SPATA31A6、CNTNAP3B、FP325317.1	1501	-1.166315555
34	ABCA4、ARHGAP29、GCLM	1647	-1.165938152
35	CDH12、CDH18、PRDM9	906	-1.165580525
36	FOXD4L6、CBWD7、ANKRD20A2	1733	-1.164984704
37	LSM14B、PSMA7、SS18L1、MTG2、HRH3、OSBPL2	1328	-1.164299779
38	DEFB131、USP17L15、USP17L30	2441	-1.163893743
39	FOXD4L6、CBWD7、CNTNAP3B	1158	-1.163865819
40	SPATA31A6、CNTNAP3B、FP325317.1	1421	-1.163129452
41	POU6F2、VPS41、YAE1D1	2150	-1.162901966
42	FRG1、FRG2、DUX4	1656	-1.162286788
43	AP000275.65、C21orf59、SYNJ1	1195	-1.162265158
44	PCDH1、KIAA0141、PCDH12	2112	-1.161771328
45	POTEB、RP11-294C11.3、OR4M2	1804	-1.161135608
46	EEF2KMT、ALG1、C16orf89	1131	-1.161106067
47	SPATA31A6、CNTNAP3B、FP325317.1	1690	-1.160839091
48	POU3F3、TMEM182、MRPS9	1803	-1.160442309
49	BET1、GNG11、GNGT1	1452	-1.16038179
50	RP11-812E19.9、TP53TG3C、TP53TG3B	1004	-1.160341404

表17.a2

	pfp	P值	CCS
1	0	0.001784796	-1
2	0	0.00193567	-1
3	0	0.000368309	-1
4	0	0.000225818	-1
5	0	0.001020966	-1

6	0	0.001274619	-1
7	0	0.000289277	-1
8	0	0.000280234	-1
9	0	0.000359034	-1
10	0	0.000662327	-1
11	0	0.000291335	-1
12	0	0.001939547	-1
13	0	0.001357498	-1
14	0	0.000330681	-1
15	0	6.77948E-05	-1
16	0	6.36884E-05	-1
17	0	5.17509E-05	-1
18	0	0.000338224	-1
19	0	5.75019E-05	-1
20	0	5.77177E-06	-1
21	0	4.62594E-05	-1
22	0	0.000227127	-1
23	0	0.001974945	-1
24	0	0.000898865	-1
25	0	9.78953E-05	-1
26	0	0.000219581	-1
27	0	3.6277E-05	-1
28	0	0.00109603	-1
29	0	0.000193365	-1
30	0	0.000407507	-1
31	0	0.001321661	-1
32	0	0.00011115	-1
33	0	0.000118324	-1
34	0	0.000285345	-1
35	0	0.00089429	-1
36	0	4.83736E-05	-1
37	0	0.000336618	-1
38	0	0.000677404	-1
39	0	0.001351499	-1
40	0	0.000565001	-1
41	0	1.11237E-05	-1
42	0	4.87373E-05	-1
43	0	0.000583107	-1
44	0	0.000645745	-1
45	0	0.000349873	-1

46	0	0.000435284	-1
47	0	0.0002076	-1
48	0	0.001791928	-1
49	0	0.000206356	-1
50	0	0.001652134	-1

表17.a3

	60 mer	Chr
1	TGATGCAGTTACAGAAAAGTTGGTGACATCGAATTGGAATTTTAAAATTAAGAGTACATA	8
2	TGATGCAGTTACAGAAAAGTTGGTGACATCGAAATCAAAGCTCCAGTTAATTCAGAGTCC	8
3	GAAGTCCAACACCGTGATGCAGGATTCATCGAATTTAGGCACCAAACTATACTAGTCATC	21
4	CAGTCAGATAGTGAGGACTCAACAGATATCGATTGTTACAAAATTCCTCCTAAAAATTTC	7
5	TGATGCAGTTACAGAAAAGTTGGTGACATCGAATTACCAGCACCTGTTCATGAGCTGCCA	8
6	ATCCGCTACGAGGGCATTCTCTACACCATCGAGTAGAAGGAGGAGAATAATACAGAGCAG	20
7	GTTACCCTAGCCACTTCACAAAATATGTTCGAAAAAAATAAAATATATGAATGCTGGATC	5
8	GAGCTAGCCCAGACCTACTAAATTAGAATCGAGGCACCAGAAGGTTAAGACAATTGCCCA	8
9	GCCAGAAAATCGTACCATTTCCTTTCCTTCGAAGAGATAGTTCACAATGGATGACACAGC	X
10	GAATGGGGTATGAATCATGCAACTGGCTTCGAAGTATAATAGTAAGCTACAGAATAATTT	2
11	GTGCTAGCCCTGCTTAAATGCACGGAAATCGAGAACAGGATCAGTTTAAGATGAGATAGC	9
12	GCCAGAAAATCGTACCATTTCCTTTCCTTCGATGTATCTATTATATCTATGTATCTATAT	X
13	TGATGCAGTTACAGAAAAGTTGGTGACATCGAAGAGCCTCTGGCATGTACAGGAGCCCAC	8
14	ATAAATGTTTCAGTATAAGCAGTAGGACTCGATGTTGCCAAAAACAAAAGAAAAACCCCA	3
15	GAGAAGTCGTAAAATGCTAGGTATTTATTCGAAGCTGGGTCTTCTAGGCTTTAGGTAAAT	10
16	GAAGACCCAGAGCTTACACAAAATCATGTCGAAAAAAAAAATAAAAGGGAATCTGCATAA	4
17	AATTCTCAAGCTCAAAGTGCTCGCAGATTCGAATGCCTACTACTACTAGGACCACGCAGG	2
18	TAAGACTGACTGAACGTATCAAGGCCTATCGAACAAACACACCTTCAAACACATCACGCG	19

19	TGATGCAGTTACAGAAAAGTTGGTGACATCGAGAACGAGGCTTAAAATTATGTCCCACGA	8
20	GAGTGAGAGTGATGCAGTAATAGCAGTATCGATGTCTTTATCTGAAAAATGAGAATAATC	11
21	GAGAGGCCGTTCTAAAAGCACATTTGTATCGAAAATCCATGGGAATTTCCCATTTTGCTC	16
22	AAAACCCTTCTGGAACATGGGAGAGAACTCGAAATTTGATTCAGGATAATTTAAAAATAT	9
23	CGGCTTCACTCTGCATCCGTCCTGAGCATCGAGCTAGATTGGTCAATATATGAATGAGGA	16
24	GTTACCCTAGCCACTTCACAAAATATGTTCGATAAATTCTCATAAAAATAAAATGGTGCA	5
25	AAAACCCTTCTGGAACATGGGAGAGAACTCGAATCAGGCTAATCAGCATATCAGTCACCT	9
26	AATTCTCAAGCTCAAAGTGCTCGCAGATTCGATTGTAAACTAAGCTATGTTCGGTAGCCC	2
27	AAAACCCTTCTGGAACATGGGAGAGAACTCGAAGGTGAGGAAGCTCACAGGTGTTGAGCA	9
28	GGCAGGCAAATCATTTAAGGTCAGGAGTTCGAGACCAGTCTGAGCAACCTTGAGAATCCC	19
29	AAAACCCTTCTGGAACATGGGAGAGAACTCGATGCCTCGCAAAATGACAATTGAGAGGAT	9
30	AGAGATTGCATTTAATCTGTAGATTACATCGATTAAACCTGAGAAATTCTGCTCCCTCCC	4
31	GCAAATTCTGAGAACCAGGCCTGTTCTCTCGAGGGCACATGGGAGATGTTAGGCGCGGAC	16
32	GATCCCTATTTCCATATTACAAAAACCATCGAGGCCTTCGTATGCTCCTCAGCCTGGGCA	16
33	AAAACCCTTCTGGAACATGGGAGAGAACTCGACACAGTGGTCTGATGAATTTCACTTCTT	9
34	TCTTGCCGGGAGTACTCTTCAAACTCCTTCGAAAAGGTCAAGTAGGCATTAACTGGGCTG	1
35	GTTACCCTAGCCACTTCACAAAATATGTTCGAAGTATATTTATACCTTTACATGATGAGG	5
36	CTTCCTACGCCGGAGAAAGCTGCCATTGTCGAATAAGAAGAATTGTCTTGGGCCACACAT	9
37	ATCCGCTACGAGGGCATTCTCTACACCATCGACAGAGTAGAAACGTACTTTTCTCTCGGT	20
38	GTTTTTGGGTACCAGCCCTTCACCTGCGTCGACTTCCTGATTCTCCCACGACGTCCCTGG	4
39	CTTCCTACGCCGGAGAAAGCTGCCATTGTCGAGTCTGCGGAAGGAGGAAGAAGCTCATTT	9
40	AAAACCCTTCTGGAACATGGGAGAGAACTCGAAAGAAACTGTCAGTAAACAGACAACCTA	9
41	TGACATAACTTCAATTCAGCTAGTAACTTCGAGCAAGGGAAGA	7

	GTAAACAACCATGCCTC	
42	GAAGACCCAGAGCTTACACAAAATCATGTCGAATGAGAAAGA CGTAAGTTTTATTTTAAG	4
43	GAAGTCCAACACCGTGATGCAGGATTCATCGAAGGTTACCCAT CCTTTCGGGTTGCTAAT	21
44	AGACTCCCCTGAGATTGCACTGCTTTATTCGAGCTCCCTCGGGA AACACTGTTGAAAGGA	5
45	CTCGTTATTAGATGCATTGTAGACAACATCGATGAGCATCAAC TGTCCTAGAATTGGCTG	15
46	TGCGAGATAACTTCAGGTATCTCCATGCTCGAAGCAAAAAAAA TGGGACAACTTGAAGCA	16
47	AAAACCCTTCTGGAACATGGGAGAGAACTCGATAATTTTGATT TTTGTTCTTTTTTCTTC	9
48	AATTCTCAAGCTCAAAGTGCTCGCAGATTCGAGGAAGTTCAGA GAACACAATGCAAGATT	2
49	CCACGCTCAGTCAATAACACTAAAACACTCGACTAAGTTTCTT CATGAAAGTAAATGGTG	7
50	CGGCTTCACTCTGCATCCGTCCTGAGCATCGAATCTCTAGGTTT CCATTGGAAGAACAGG	16

表17.a4

	探針位置				
	開始1	**結束1**	**開始2**	**結束2**	**Chr**
1	1072151	1072182	1294593	1294624	8
2	1072151	1072182	1259511	1259542	8
3	32595335	32595366	32668930	32668961	21
4	30804622	30804653	31042032	31042063	7
5	1072151	1072182	1298816	1298847	8
6	62122728	62122759	62187814	62187845	20
7	21325113	21325144	21521563	21521594	5
8	127038447	127038478	127164971	127165002	8
9	472921	472952	577102	577133	X
10	226398167	226398198	226448005	226448036	2
11	79744307	79744338	79874571	79874602	9
12	472921	472952	505129	505160	X
13	1072151	1072182	1244134	1244165	8
14	115553790	115553821	115677249	115677280	3
15	16636423	16636454	16683873	16683904	10
16	189607684	189607715	189807488	189807519	4
17	103810436	103810467	103870385	103870416	2
18	56614547	56614578	56765569	56765600	19
19	1072151	1072182	1234660	1234691	8

20	44702656	44702687	44834704	44834735	11
21	85802241	85802272	85821758	85821789	16
22	42157848	42157879	42186837	42186868	9
23	33813286	33813317	33876874	33876905	16
24	21325113	21325144	21430330	21430361	5
25	42094972	42095003	42186837	42186868	9
26	103801409	103801440	103870385	103870416	2
27	42054487	42054518	42186837	42186868	9
28	21616344	21616375	21724818	21724849	19
29	42186837	42186868	42375307	42375338	9
30	56291	56322	82243	82274	4
31	1482832	1482863	1534600	1534631	16
32	69335108	69335139	69444355	69444386	16
33	42186837	42186868	42204492	42204523	9
34	94084764	94084795	94218975	94219006	1
35	21325113	21325144	21422901	21422932	5
36	40955464	40955495	41127776	41127807	9
37	62122728	62122759	62234091	62234122	20
38	9452012	9452043	9532817	9532848	4
39	41127776	41127807	41266229	41266260	9
40	42186837	42186868	42409964	42409995	9
41	39117241	39117272	39270836	39270867	7
42	189607684	189607715	189649878	189649909	4
43	32595335	32595366	32631264	32631295	21
44	141780235	141780266	141944400	141944431	5
45	21710004	21710035	21854976	21855007	15
46	5094647	5094678	5180700	5180731	16
47	42186837	42186868	42248403	42248434	9
48	103870385	103870416	103916449	103916480	2
49	94003895	94003926	94164552	94164583	7
50	33813286	33813317	33967758	33967789	16

表17.a5

	4 kb序列位置			
	開始1	**結束1**	**開始2**	**結束2**
1	1068181	1072182	1294593	1298594
2	1068181	1072182	1255541	1259542
3	32595335	32599336	32668930	32672931
4	30804622	30808623	31042032	31046033
5	1068181	1072182	1294846	1298847

6	62118758	62122759	62183844	62187845
7	21321143	21325144	21521563	21525564
8	127034477	127038478	127164971	127168972
9	468951	472952	573132	577133
10	226398167	226402168	226444035	226448036
11	79740337	79744338	79874571	79878572
12	468951	472952	505129	509130
13	1068181	1072182	1240164	1244165
14	115549820	115553821	115677249	115681250
15	16636423	16640424	16683873	16687874
16	189603714	189607715	189807488	189811489
17	103810436	103814437	103866415	103870416
18	56610577	56614578	56761599	56765600
19	1068181	1072182	1234660	1238661
20	44698686	44702687	44834704	44838705
21	85802241	85806242	85821758	85825759
22	42157848	42161849	42182867	42186868
23	33809316	33813317	33872904	33876905
24	21321143	21325144	21426360	21430361
25	42094972	42098973	42182867	42186868
26	103801409	103805410	103866415	103870416
27	42054487	42058488	42182867	42186868
28	21616344	21620345	21720848	21724849
29	42182867	42186868	42375307	42379308
30	56291	60292	78273	82274
31	1478862	1482863	1534600	1538601
32	69335108	69339109	69444355	69448356
33	42182867	42186868	42204492	42208493
34	94080794	94084795	94215005	94219006
35	21321143	21325144	21422901	21426902
36	40955464	40959465	41123806	41127807
37	62118758	62122759	62230121	62234122
38	9448042	9452043	9532817	9536818
39	41123806	41127807	41266229	41270230
40	42182867	42186868	42405994	42409995
41	39117241	39121242	39266866	39270867
42	189603714	189607715	189645908	189649909
43	32595335	32599336	32631264	32635265
44	141776265	141780266	141940430	141944431
45	21706034	21710035	21851006	21855007

46	5090677	5094678	5176730	5180731
47	42182867	42186868	42248403	42252404
48	103866415	103870416	103912479	103916480
49	93999925	94003926	94160582	94164583
50	33809316	33813317	33963788	33967789

表17.a6

	探針	引子ID
1	Hg38_8_1065878_1072182_1294593_1298847_FR	OBD183-3529
2	Hg38_8_1065878_1072182_1251550_1259542_FF	OBD183-3533
3	Hg38_21_32595335_32598768_32668930_32673465_RR	OBD183-3537
4	Hg38_7_30804622_30809524_31042032_31049335_RR	OBD183-3541
5	Hg38_8_1065878_1072182_1294593_1298847_FF	OBD183-3545
6	Hg38_20_62119683_62122759_62181248_62187845_FF	OBD183-3549
7	Hg38_5_21320172_21325144_21521563_21530474_FR	OBD183-3553
8	Hg38_8_127032863_127038478_127164971_127180591_FR	OBD183-3557
9	Hg38_X_471766_472952_572091_577133_FF	OBD183-3561
10	Hg38_2_226398167_226405087_226440513_226448036_RF	OBD183-3565
11	Hg38_9_79741852_79744338_79874571_79886027_FR	OBD183-3569
12	Hg38_X_471766_472952_505129_507941_FR	OBD183-3573
13	Hg38_8_1065878_1072182_1234660_1244165_FF	OBD183-3577
14	Hg38_3_115538014_115553821_115677249_115687258_FR	OBD183-3581
15	Hg38_10_16636423_16644321_16683873_16690220_RR	OBD183-3585
16	Hg38_4_189601545_189607715_189807488_189815403_FR	OBD183-3589
17	Hg38_2_103810436_103819784_103869265_103870416_RF	OBD183-3593
18	Hg38_19_56611172_56614578_56759775_56765600_FF	OBD183-3597
19	Hg38_8_1065878_1072182_1234660_1244165_FR	OBD183-3601
20	Hg38_11_44700518_44702687_44834704_44845205_FR	OBD183-3605
21	Hg38_16_85802241_85804577_85821758_85824343_RR	OBD183-3609
22	Hg38_9_42157848_42164656_42182844_42186868_RF	OBD183-3613
23	Hg38_16_33810752_33813317_33866559_33876905_FF	OBD183-3617
24	Hg38_5_21320172_21325144_21422901_21430361_FF	OBD183-3621
25	Hg38_9_42094972_42099378_42182844_42186868_RF	OBD183-3625
26	Hg38_2_103801409_103809996_103869265_103870416_RF	OBD183-3629
27	Hg38_9_42054487_42058368_42182844_42186868_RF	OBD183-3633
28	Hg38_19_21616344_21621521_21718358_21724849_RF	OBD183-3637
29	Hg38_9_42182844_42186868_42375307_42380261_FR	OBD183-3641
30	Hg38_4_56291_68086_79642_82274_RF	OBD183-3645
31	Hg38_16_1478329_1482863_1534600_1537498_FR	OBD183-3649
32	Hg38_16_69335108_69337953_69444355_69445761_RR	OBD183-3653

33	Hg38_9_42182844_42186868_42204492_42209146_FR	OBD183-3657
34	Hg38_1_94081020_94084795_94209095_94219006_FF	OBD183-3661
35	Hg38_5_21320172_21325144_21422901_21430361_FR	OBD183-3665
36	Hg38_9_40955464_40963306_41124595_41127807_RF	OBD183-3669
37	Hg38_20_62119683_62122759_62223291_62234122_FF	OBD183-3673
38	Hg38_4_9448543_9452043_9532817_9534912_FR	OBD183-3677
39	Hg38_9_41124595_41127807_41266229_41270939_FR	OBD183-3681
40	Hg38_9_42182844_42186868_42404332_42409995_FF	OBD183-3685
41	Hg38_7_39117241_39123206_39259249_39270867_RF	OBD183-3689
42	Hg38_4_189601545_189607715_189644283_189649909_FF	OBD183-3693
43	Hg38_21_32595335_32598768_32631264_32636348_RR	OBD183-3697
44	Hg38_5_141776058_141780266_141939429_141944431_FF	OBD183-3701
45	Hg38_15_21705062_21710035_21848007_21855007_FF	OBD183-3705
46	Hg38_16_5093594_5094678_5173945_5180731_FF	OBD183-3709
47	Hg38_9_42182844_42186868_42248403_42250983_FR	OBD183-3713
48	Hg38_2_103869265_103870416_103906343_103916480_FF	OBD183-3717
49	Hg38_7_94000334_94003926_94158341_94164583_FF	OBD183-3721
50	Hg38_16_33810752_33813317_33958121_33967789_FF	OBD183-3725

表17.a7

	引子序列	引子ID	引子序列
1	ATTGGCCGGCCAGCGCTGCCTGGG	OBD183-3531	CACACCCAGCCAAAATAAGCTTTT
2	GATCTTTGGCTCCGTCCTGCCATG	OBD183-3535	ATTTAACTTTCTACGCAAGTCTCC
3	ATGTTTGTGAAATGCAGGGCCC	OBD183-3539	ATCACACAGAATATTAAAAAGA
4	TAAGACTAAGGCCCCAAAAGCCAGAA	OBD183-3543	TGGTGGGTGAGTGATCCTGGAGGTGG
5	CTGCAGACACCACTCGGATCAG	OBD183-3547	GAACTAGAATGTCAAAAGGGCA
6	GCCGCGGCCCGGCGCTCCTTC	OBD183-3551	TGTAAGGTGTGTCCTGATAAC
7	ATATTTTGCTAAGCCTATAATATTA	OBD183-3555	TCAGCCCTGACAAAAGACTGTGCCA
8	GGTCAAGATCAGGAGTCCACAGA	OBD183-3559	CCCCTGGCATGATAAGAGGCAGT
9	CTGAATAATTAATATACTCCT	OBD183-3563	ATAAAAGAGTGCCACTGATTA
10	AACCCAAGGGCATATATGGGGATGAC	OBD183-3567	CTGCACGGTTGCTCCTGAGAGCAGTC
11	GAAAAGAAAAAAAGAAAAGTGATA	OBD183-3571	GTATAAAATGAAAACCTTCCCAAA

12	AGGGACCTCCTCTGAATAATTAATA	OBD183-3575	AAATAGATACATAGAATACATAAAT
13	TTTGGCTCCGTCCTGCCATGAA	OBD183-3579	GCACTCCACCATAGGGATGGTG
14	GATGCAATGTAATTCACTTGTT	OBD183-3583	TGAAAACCCTCCAACTTTCAAG
15	AGGAGGTAAAAAGGGAAGCGCAG	OBD183-3587	AGTATGACACTTCAAGAATCTTG
16	CTTCCTTCTGTCCATGACCAACC	OBD183-3591	TCTTAAACATCATCCACCTCTTT
17	TTCTGAGTGTAGCAGGGCTCTG	OBD183-3595	ATAAGAGGGAAAGATGGCATGA
18	GCCTTATCAGTCAAATATTGAAGGA	OBD183-3599	AGTGTGTACAGGTGAGTTTGTCCGT
19	GCTGCCTGGGCCTTGAAGGCAGA	OBD183-3603	CGCCGTGAACTCACTCACTTGAG
20	GGAGTCACACAGGGAAGCACAGGC	OBD183-3607	ATATCTTCTGTTCACAAATGCTTG
21	TACACTCTAAGAGGCTGAGACAGCAA	OBD183-3611	CCAAGAAACCTGTAAAAGCAGGTGCA
22	GAAGAAAAAGAAAATGTTGGATCAT	OBD183-3615	TAAGATTACTTTCGTGTTCAAGGTC
23	TTGGCCCAAGGGGCTGTCCTGGTT	OBD183-3619	TATAATAGGTCAGCACTGGAGAAT
24	TAACAATGGTTCTAGAGTCAG	OBD183-3623	CTATCCATTTTAGCCTTACTT
25	TTGGATCATTTACAAATCAAAT	OBD183-3627	TTCTTTTGCACAGCATAGTGAA
26	GCTCTGTACTAGTCTGCTTTGGC	OBD183-3631	TACTAGTTGCAGAATGTGATAAA
27	ATTTGGGAAGAAAAAGAAAATGTT	OBD183-3635	TCCTGGGTCATCAGTCCTTGACCA
28	AAAAATAAATTTAAATAAAATAAACA	OBD183-3639	GGAGTGCAATGGCGCGATCTCGGCTC
29	CAACATTTGGGAAGAAAAAGAA	OBD183-3643	AGTGCCTAACTACCAAAGGAAG
30	TGTCCCTTGAAATTCCCTATAATTTG	OBD183-3647	AAATCTCAGGACATAAATTCAGAATT
31	GCCAGCTGGGCAGGGTCCAGGCAT	OBD183-3651	GAGGGGGCCTTGGGGCCTGGTTCC
32	GCCAGCTGATCCAGCAACTGAGGA	OBD183-3655	GCAAAAAGACGTCAGGGAGCTTTT
33	GTCACAGAAACAGCCAAGGTCAAC	OBD183-3659	CACCCAATAGATCCACAGACAGAT
34	AAAGAACAACTAAGCTGC	OBD183-3663	AAGTATATGAACTATAT

	TAT		TTTG
35	TGCTAAGCCTATAATATTAAATCAG	OBD183-3667	TCTTGAACTCCCGACCTCAGGTAAT
36	GTGTTGGGGTAGGCCCCCGGG	OBD183-3671	AACCCATGGTCTGTGGGCCAT
37	GAGCGCAGGAGCGGGCGGCCA	OBD183-3675	TTTTGGGCCATGAGGTGACAC
38	CGCCATTCCACCCCACTTCAG	OBD183-3679	CCCGCCTACCCCCACCACAAG
39	CCGGGACTGGCTGCGGCGGGGCAG	OBD183-3683	TTTTGGTGCAGTTTCAGCATAACA
40	TTACAAATCAAATGACCCCAGAAA	OBD183-3687	TTAATGGGGTTATTTGTTTGTTTT
41	TTTTTGCTGGTCACTATGAGGCC	OBD183-3691	GTTTCAGAAGACAGTGAAGAAAA
42	TTGTGCTTTCATGGTGTCCCTGC	OBD183-3695	AGAAAATGAGAAAAGAAATAGGG
43	TGTTTAGAGCAGAGCACAGGGCC	OBD183-3699	TCCTTTCCCTTCTCTGCAGCCTC
44	ACTCAATAATCAGCTCACTTT	OBD183-3703	GCAATGACAGAGGAAGGTTTA
45	TTAGATCGCTTTTTGTTCAAAATCT	OBD183-3707	ATGTGGCATTAAAAATGCCAGACCA
46	TGACCTTAGGTGATCTGTCCA	OBD183-3711	GATAAATGCATACCTGATTGC
47	AACATTTGGGAAGAAAAAGAAAAT	OBD183-3715	CATGGCCTGAACTGATTTTCCAGG
48	CATGCATGGCCTCCTGGCCAAGGAC	OBD183-3719	AGGTATGGTTTTCCTCTAGCTTCTT
49	TGCTTTGGGTGCAACCACCCACTCT	OBD183-3723	AGGAAGGAATTTAGAATTCTCGTCT
50	TGGTTCTCTAAGGAGTAATTT	OBD183-3727	AATCATGATGTCAGAGGCTTC

表17.a8

51	Hg38_7_94000334_94003926_94146280_94149796_FR
52	Hg38_18_11516972_11518112_11528618_11539966_FF
53	Hg38_2_109124530_109134042_109210767_109212132_FF
54	Hg38_1_145402816_145406156_145449894_145452902_RF
55	Hg38_2_91751706_91757809_91909591_91921665_FR
56	Hg38_15_24184226_24195543_24431582_24434907_RF
57	Hg38_6_160650437_160655495_160698179_160704800_RR
58	Hg38_21_5557784_5565142_5719379_5720673_RR
59	Hg38_9_42182844_42186868_42429659_42436448_FR

60	Hg38_16_1534600_1537498_1749198_1753243_RF
61	Hg38_6_167352089_167354695_167428251_167436785_FF
62	Hg38_12_75043130_75044420_75166435_75186315_RR
63	Hg38_18_11516972_11518112_11528618_11539966_FR
64	Hg38_19_56588683_56590880_56759775_56765600_FF
65	Hg38_15_20797293_20803768_20948381_20955965_FR
66	Hg38_9_61619699_61621686_61711281_61720732_FR
67	Hg38_5_806836_810381_920775_927647_FR
68	Hg38_16_15064962_15066918_15233930_15244390_FR
69	Hg38_6_40889262_40897462_41052663_41057245_FR
70	Hg38_14_19797252_19799778_19929983_19935285_FR
71	Hg38_4_9448543_9452043_9534912_9537113_FF
72	Hg38_15_20153091_20157477_20357423_20363969_FF
73	Hg38_2_108509957_108517619_108739198_108742215_RR
74	Hg38_7_75258693_75266916_75406820_75408524_RF
75	Hg38_15_20797293_20803768_20837052_20844052_FF
76	Hg38_2_33600570_33607718_33651599_33657715_FF
77	Hg38_21_10143615_10147587_9959597_9968377_RF
78	Hg38_9_42182844_42186868_42390575_42393785_FF
79	Hg38_11_31800547_31803053_32032359_32040532_FR
80	Hg38_7_94000334_94003926_94039975_94045978_FR
81	Hg38_20_62119683_62122759_62135182_62136799_FF
82	Hg38_7_39259249_39270867_39356013_39363331_FR
83	Hg38_5_21241067_21254297_21320172_21325144_RF
84	Hg38_12_123390897_123393358_123422833_123425871_FR
85	Hg38_2_169739256_169744898_169880813_169885954_RF
86	Hg38_18_74466744_74475258_74511010_74512821_RR
87	Hg38_2_18404989_18410464_18528007_18530990_RF
88	Hg38_20_23380285_23385557_23532159_23546814_RF
89	Hg38_7_94000334_94003926_94191093_94197578_FR
90	Hg38_14_64993226_65000616_65046195_65050388_RF
91	Hg38_5_21320172_21325144_21534899_21542153_FR
92	Hg38_4_131841_144167_50378_53838_FF
93	Hg38_5_355623_362397_389569_392763_RF
94	Hg38_1_216576987_216584477_216659571_216671566_RR

表17.b1

51	BET1、GNG11、GNGT1	1740	-1.160286906
52	GNAL、CHMP1B、MPPE1	2147	-1.160156154
53	SH3RF3、FLJ20019、EDAR	2249	-1.159847704

54	NBPF8、GPR89A、PPIAL4D	1708	-1.159674679
55	RP11-407P15.2、TEKT4、RPIA	1262	-1.159504911
56	NPAP1、SNRPN、NDN	1356	-1.158505854
57	LPA、PLG、SLC22A3	1244	-1.158353168
58	CH507-42P11.8、CH507-9B2.9、CH507-9B2.5	813	-1.158294531
59	SPATA31A6、CNTNAP3B、FP325317.1	1618	-1.158262862
60	IFT140、TMEM204、CRAMP1L、LA16c-431H6.6、HN1L、MAPK8IP3	1055	-1.158187682
61	TTLL2、TCP10、UNC93A	1881	-1.158056103
62	KCNC2、CAPS2、GLIPR1L1	1160	-1.157373931
63	GNAL、CHMP1B、MPPE1	2281	-1.157213772
64	ZNF470、ZNF71、SMIM17、ZNF835	2066	-1.156944107
65	POTEB2、GOLGA6L6、POTEB3	1236	-1.15679391
66	FAM27C、SPATA31A7、SPATA31A5	1463	-1.156598458
67	ZDHHC11、BRD9、TRIP13	1508	-1.156533885
68	PDXDC1、RRN3、NTAN1	1659	-1.156467279
69	UNC5CL、OARD1、TSPO2、APOBEC2	1785	-1.156225624
70	OR4N2、OR4K2、OR4K5	1763	-1.15600386
71	DEFB131、USP17L15、USP17L30	2748	-1.155921957
72	GOLGA6L6、POTEB2、POTEB3	1541	-1.155806345
73	LIMS1、RANBP2、GCC2	1955	-1.15463192
74	TRIM73、POM121C、SPDYE5	1036	-1.154472412
75	POTEB2、GOLGA6L6、POTEB3	1231	-1.154419358
76	FAM98A、RASGRP3、LTBP1	2715	-1.154391517
77	TPTE、CH507-396I9.6、SMIM11	1021	-1.15418626
78	SPATA31A6、CNTNAP3B、FP325317.1	2019	-1.153736014
79	PAX6、RCN1、ELP4	1667	-1.153593085
80	BET1、GNG11、GNGT1	1786	-1.153121095
81	LSM14B、PSMA7、SS18L1	1861	-1.152732803
82	POU6F2、YAE1D1、RALA	3539	-1.152629432
83	CDH12、CDH18、PRDM9	1525	-1.152314812
84	SETD8、RILPL2、SBNO1	2406	-1.152284974
85	KLHL23、SSB、METTL5、UBR3	2901	-1.152139637
86	CNDP2、FAM69C、CNDP1	1739	-1.151981304
87	RDH14、NT5C1B-RDH14、NT5C1B	1777	-1.151099988
88	NAPB、CSTL1、CST11、CST8	3109	-1.151069419
89	BET1、GNG11、GNGT1	1799	-1.150926905

90	CHURC1-FNTB、FNTB、MAX	3481	-1.150545383
91	CDH12、CDH18、PRDM9	1893	-1.150394303
92	ZNF595、ZNF718、ZNF732	1752	-1.150381428
93	AHRR、PDCD6、EXOC3	1613	-1.150182036
94	ESRRG、USH2A、GPATCH2	2924	-1.150149344

表17.b2

51	0	3.27435E-05	-1
52	0	0.000452907	-1
53	0	0.000536964	-1
54	0	0.001997083	-1
55	0	0.000611881	-1
56	0	0.00092964	-1
57	0	0.001228258	-1
58	0	0.00213922	-1
59	0	0.000477541	-1
60	0	0.001829308	-1
61	0	0.001016209	-1
62	0	0.000468199	-1
63	0	0.000842999	-1
64	0	0.000198141	-1
65	0	0.000899913	-1
66	0	0.000772455	-1
67	0	0.001145457	-1
68	0	0.000172242	-1
69	0	4.27276E-05	-1
70	0	0.001188185	-1
71	0	5.74879E-05	-1
72	0	0.000623203	-1
73	0	0.000167442	-1
74	0	0.001727828	-1
75	0	0.001503405	-1
76	0	0.000122298	-1
77	0	0.00127281	-1
78	0	0.000143833	-1
79	0	0.00033896	-1
80	0	0.000212938	-1
81	0	0.000379855	-1
82	0	2.56658E-06	-1
83	0	0.001681494	-1

84	0	0.001226771	-1
85	0	0.000180882	-1
86	0	0.00027211	-1
87	0	0.000249271	-1
88	0	2.23737E-05	-1
89	0	0.000260024	-1
90	0	0.002059753	-1
91	0	0.000446634	-1
92	0	0.00160563	-1
93	0	0.00067062	-1
94	0	0.001940467	-1

表17.b3

51	CCACGCTCAGTCAATAACACTAAAACACTCGACTAGATTTCATACAATCTAGTAGAATTT	7
52	GAACAGGACTGTACTGTGGGGGACCTACTCGAAAGGTTCTCTTGACTCTGAAAAACAGAA	18
53	GGAAGCTAGTTACCATGTTCTTTGGGTCTCGATTCGGACCATTGCCCGGCAAGCCGCACC	2
54	CAGAACCTTGAAGGCATGAGCCCCAGACTCGAGAAGGCAACATTGATTGAGTGAAAGAAT	1
55	TTTATGTGAACCCTTGTTGTGGAAAATGTCGAGGATCTAGAACTAGAATTACCATTTGAC	2
56	TAACACACCTCAAGGAAGGATACGTACCTCGATCTCAATTGGAACGGTTTTCTGAGTTTT	15
57	ATTGCTACCATGGTGATGGACAGAGTTATCGAAGGCACAGATAAACTTGCCGAGGACCCT	6
58	AGAGGACAAATAACTGATTTCTCTTCTTTCGACTCCAGAGTAGGTCACCCATCCCTGCAC	21
59	AAAACCCTTCTGGAACATGGGAGAGAACTCGATCACTTGTTCCAAGTAAAAGCAAGAGAG	9
60	GCCCAGGTCGGGCATCTGTTGTATTCCATCGAGGGCACATGGGAGATGTTAGGCGCGGAC	16
61	GCATTGAGCCAAGAGCAAAAAATAAGAGTCGAAGTATTTCCTATTAGTACTTGGGATAGT	6
62	ACAACTCTCCTTGTCCTCTGAGGCGCTCTCGAATGATCTAAAAAAAAAAAAAGTTAGACC	12
63	GAACAGGACTGTACTGTGGGGGACCTACTCGAGACACCAGACTCATGAGTAAAGCTATCT	18
64	AAGAACAGAGTTGGAGAGCGGATACTACTCGAACAAACACACCTTCAAACACATCACGCG	19
65	CGGGAATCATCACAGGAATCGCGCCCATTCGAGAATGTTTCAGACAGTAGAGTAAGATAG	15

66	CCAGAGTCAAGGCAGGCAAAGAGACTCCTCGAACAACCATTTTGGAA ACAAATTTCATAT	9
67	GCTGGTCAGCTACGTCCACCCATTCCCTTCGATACTAGGTTAGCCATG CTGACTTTTGAT	5
68	TGCCTCCAATGCGCATGCCAACCCCAAATCGACTCTCTTTTCCTCTGAG TTCAACATTTT	16
69	CTGTGGGAAAAGACACAAACCCCTTAGCTCGATTTGACATTACATTAT GGCTTTGTAACA	6
70	TTAGGATTCATCAAGGAAGCAACTGCAATCGAACATAATTTTACAATC TTTAACTTTTTT	14
71	GTTTTTGGGTACCAGCCCTTCACCTGCGTCGACAGGGAAATATCTATA TCTCGGCAGAGA	4
72	ATGAAGCCAGAGTTCAGTATGAGGGTTTTCGAGAATGAGTAATTTATA AAGAAAAGAGGT	15
73	TCCAAAGAAATTAATTACCTCCAGGAGATCGAGACCATCCCAGCTAAC AATGGTGAAACC	2
74	GCCCAAACTGAAAACCTATGAGTTATTCTCGACTTTTCCATCTATAAA TTGGGGTTGTTA	7
75	CGGGAATCATCACAGGAATCGCGCCCATTCGATGAGCATCAACTGTCC TAGAATTGGCTG	15
76	AGCTAGTCTAGTAATAATTAAAGGCAGCTCGATTAGGATGAACCCGG GCACTTAGCCGTG	2
77	CTGTGTAACTTTTGAGACCTGGCCTAAATCGACTTCATTAAGAATATC TTTGTGTTCCAC	21
78	AAAACCCTTCTGGAACATGGGAGAGAACTCGACCGTATAGGACATCT TCAAATTACAAAA	9
79	GCCAACCTCGGCGGTCAGTTCCCTGCTATCGATTCATATTATAGCTCC ATCTGCAGCAGA	11
80	CCACGCTCAGTCAATAACACTAAAACACTCGACTTATATTAAGAGGAT ATACACTGTGGT	7
81	ATCCGCTACGAGGGCATTCTCTACACCATCGATGTGTAGGCCTTTCCA TTCCATTTATTC	20
82	TGACATAACTTCAATTCAGCTAGTAACTTCGAGCTTCACATCCAAAGT ACCTGGAACTTT	7
83	GTTACCCTAGCCACTTCACAAAATATGTTCGAAATCAGCAGTATTGGT AGGTAGAAGAAT	5
84	CCAGAAAGGTACCCATTAGGCGTCACCTTCGATGAATTAATATATGCC AAGTGCCTAGGC	12
85	CGAGGTGGGCGATCCCTAGGTCAGGAGATCGAGACCGCCCACCCTGG CCAGTAACTAGAT	2
86	GGAGGATCAAGACTTCCAGTGACAAATATCGAGGTACAGTGCCAAGC TGTACGGGTCACT	18
87	AGGGGATTTTACATGTGCTTGTCTGACATCGAGGAAGACATCTTTTTC CTGCTTCTGCCA	2
88	GAGAAGGGGAAACACAATGTGTCTGTTATCGAAGCTGACAGAAAGAA	20

	CAGTTTCTCTTAC	
89	CCACGCTCAGTCAATAACACTAAAACACTCGACCTTTCCAGTAGGATC TTCCCATATTTC	7
90	GCCGAGTTGGGCAGATCATTTTAGGAGTTCGAGACAGCCTGGGCAAC AGGGTGAGACTCC	14
91	GTTACCCTAGCCACTTCACAAAATATGTTCGAGTGGGCGAAAGAACCT GTTAACTTAAAG	5
92	AGCTCCCAAAAATTCTGTAAGGGGGCCTTCGATCTCATTCCGAACAGG GTAAAGTAGGGA	4
93	TGACTCTTCAGACCTGGCTCATTTCACGTCGATTCTGGTGTTTCCAGCA AGTTTGGACAC	5
94	CACCTCCTCTTGAGCAGAAATAAAAGGTTCGACTTCTACCCCATCTCA AGCTCACCCCCT	1

表17.b4

51	94003895	94003926	94146280	94146311	7
52	11518081	11518112	11539935	11539966	18
53	109134011	109134042	109212101	109212132	2
54	145402816	145402847	145452871	145452902	1
55	91757778	91757809	91909591	91909622	2
56	24184226	24184257	24434876	24434907	15
57	160650437	160650468	160698179	160698210	6
58	5557784	5557815	5719379	5719410	21
59	42186837	42186868	42429659	42429690	9
60	1534600	1534631	1753212	1753243	16
61	167354664	167354695	167436754	167436785	6
62	75043130	75043161	75166435	75166466	12
63	11518081	11518112	11528618	11528649	18
64	56590849	56590880	56765569	56765600	19
65	20803737	20803768	20948381	20948412	15
66	61621655	61621686	61711281	61711312	9
67	810350	810381	920775	920806	5
68	15066887	15066918	15233930	15233961	16
69	40897431	40897462	41052663	41052694	6
70	19799747	19799778	19929983	19930014	14
71	9452012	9452043	9537082	9537113	4
72	20157446	20157477	20363938	20363969	15
73	108509957	108509988	108739198	108739229	2
74	75258693	75258724	75408493	75408524	7
75	20803737	20803768	20844021	20844052	15
76	33607687	33607718	33657684	33657715	2
77	10143615	10143646	9968346	9968377	21

78	42186837	42186868	42393754	42393785	9
79	31803022	31803053	32032359	32032390	11
80	94003895	94003926	94039975	94040006	7
81	62122728	62122759	62136768	62136799	20
82	39270836	39270867	39356013	39356044	7
83	21241067	21241098	21325113	21325144	5
84	123393327	123393358	123422833	123422864	12
85	169739256	169739287	169885923	169885954	2
86	74466744	74466775	74511010	74511041	18
87	18404989	18405020	18530959	18530990	2
88	23380285	23380316	23546783	23546814	20
89	94003895	94003926	94191093	94191124	7
90	64993226	64993257	65050357	65050388	14
91	21325113	21325144	21534899	21534930	5
92	144136	144167	53807	53838	4
93	355623	355654	392732	392763	5
94	216576987	216577018	216659571	216659602	1

表17.b5

51	93999925	94003926	94146280	94150281
52	11514111	11518112	11535965	11539966
53	109130041	109134042	109208131	109212132
54	145402816	145406817	145448901	145452902
55	91753808	91757809	91909591	91913592
56	24184226	24188227	24430906	24434907
57	160650437	160654438	160698179	160702180
58	5557784	5561785	5719379	5723380
59	42182867	42186868	42429659	42433660
60	1534600	1538601	1749242	1753243
61	167350694	167354695	167432784	167436785
62	75043130	75047131	75166435	75170436
63	11514111	11518112	11528618	11532619
64	56586879	56590880	56761599	56765600
65	20799767	20803768	20948381	20952382
66	61617685	61621686	61711281	61715282
67	806380	810381	920775	924776
68	15062917	15066918	15233930	15237931
69	40893461	40897462	41052663	41056664
70	19795777	19799778	19929983	19933984
71	9448042	9452043	9533112	9537113
72	20153476	20157477	20359968	20363969
73	108509957	108513958	108739198	108743199

74	75258693	75262694	75404523	75408524
75	20799767	20803768	20840051	20844052
76	33603717	33607718	33653714	33657715
77	10143615	10147616	9964376	9968377
78	42182867	42186868	42389784	42393785
79	31799052	31803053	32032359	32036360
80	93999925	94003926	94039975	94043976
81	62118758	62122759	62132798	62136799
82	39266866	39270867	39356013	39360014
83	21241067	21245068	21321143	21325144
84	123389357	123393358	123422833	123426834
85	169739256	169743257	169881953	169885954
86	74466744	74470745	74511010	74515011
87	18404989	18408990	18526989	18530990
88	23380285	23384286	23542813	23546814
89	93999925	94003926	94191093	94195094
90	64993226	64997227	65046387	65050388
91	21321143	21325144	21534899	21538900
92	140166	144167	49837	53838
93	355623	359624	388762	392763
94	216576987	216580988	216659571	216663572

表17.b6

51	Hg38_7_94000334_94003926_94146280_94149796_FR	OBD183-3729
52	Hg38_18_11516972_11518112_11528618_11539966_FF	OBD183-3733
53	Hg38_2_109124530_109134042_109210767_109212132_FF	OBD183-3737
54	Hg38_1_145402816_145406156_145449894_145452902_RF	OBD183-3741
55	Hg38_2_91751706_91757809_91909591_91921665_FR	OBD183-3745
56	Hg38_15_24184226_24195543_24431582_24434907_RF	OBD183-3749
57	Hg38_6_160650437_160655495_160698179_160704800_RR	OBD183-3753
58	Hg38_21_5557784_5565142_5719379_5720673_RR	OBD183-3757
59	Hg38_9_42182844_42186868_42429659_42436448_FR	OBD183-3761
60	Hg38_16_1534600_1537498_1749198_1753243_RF	OBD183-3765
61	Hg38_6_167352089_167354695_167428251_167436785_FF	OBD183-3769
62	Hg38_12_75043130_75044420_75166435_75186315_RR	OBD183-3773
63	Hg38_18_11516972_11518112_11528618_11539966_FR	OBD183-3777
64	Hg38_19_56588683_56590880_56759775_56765600_FF	OBD183-3781
65	Hg38_15_20797293_20803768_20948381_20955965_FR	OBD183-3785
66	Hg38_9_61619699_61621686_61711281_61720732_FR	OBD183-3789
67	Hg38_5_806836_810381_920775_927647_FR	OBD183-3793
68	Hg38_16_15064962_15066918_15233930_15244390_FR	OBD183-3797
69	Hg38_6_40889262_40897462_41052663_41057245_FR	OBD183-3801

70	Hg38_14_19797252_19799778_19929983_19935285_FR	OBD183-3805
71	Hg38_4_9448543_9452043_9534912_9537113_FF	OBD183-3809
72	Hg38_15_20153091_20157477_20357423_20363969_FF	OBD183-3813
73	Hg38_2_108509957_108517619_108739198_108742215_RR	OBD183-3817
74	Hg38_7_75258693_75266916_75406820_75408524_RF	OBD183-3821
75	Hg38_15_20797293_20803768_20837052_20844052_FF	OBD183-3825
76	Hg38_2_33600570_33607718_33651599_33657715_FF	OBD183-3829
77	Hg38_21_10143615_10147587_9959597_9968377_RF	OBD183-3833
78	Hg38_9_42182844_42186868_42390575_42393785_FF	OBD183-3837
79	Hg38_11_31800547_31803053_32032359_32040532_FR	OBD183-3841
80	Hg38_7_94000334_94003926_94039975_94045978_FR	OBD183-3845
81	Hg38_20_62119683_62122759_62135182_62136799_FF	OBD183-3849
82	Hg38_7_39259249_39270867_39356013_39363331_FR	OBD183-3853
83	Hg38_5_21241067_21254297_21320172_21325144_RF	OBD183-3857
84	Hg38_12_123390897_123393358_123422833_123425871_FR	OBD183-3861
85	Hg38_2_169739256_169744898_169880813_169885954_RF	OBD183-3865
86	Hg38_18_74466744_74475258_74511010_74512821_RR	OBD183-3869
87	Hg38_2_18404989_18410464_18528007_18530990_RF	OBD183-3873
88	Hg38_20_23380285_23385557_23532159_23546814_RF	OBD183-3877
89	Hg38_7_94000334_94003926_94191093_94197578_FR	OBD183-3881
90	Hg38_14_64993226_65000616_65046195_65050388_RF	OBD183-3885
91	Hg38_5_21320172_21325144_21534899_21542153_FR	OBD183-3889
92	Hg38_4_131841_144167_50378_53838_FF	OBD183-3893
93	Hg38_5_355623_362397_389569_392763_RF	OBD183-3897
94	Hg38_1_216576987_216584477_216659571_216671566_RR	OBD183-3901

表17.b7

51	TCCGCTTCTGAAGAAACTAAGATCC	OBD183-3731	CCTTGTACATAAACAATTTCTAACC
52	TCACAGCCTCTGCCCATGTTTCACC	OBD183-3735	ACACTCTGTCTTAAAAAATTAATTA
53	TTCCCCAGGCAGGAGTGGCTGG	OBD183-3739	TGAATGCCACTGAATTCAATAA
54	TGGGGGCAGCACCCCGGGATC	OBD183-3743	TACATAACACAAAATTAACCA
55	AAGAGGCTCAGGGAAGAGGCTGTTTT	OBD183-3747	ATCATTAATGGACATTTGGGTTGGTT
56	AGGCCAGGGCATCCTGGCTGAGCACA	OBD183-3751	AGTCAAACTCTGACTGTTTGCAAATG
57	CACATTTTTTTCTGTTCTAAGAACT	OBD183-3755	CTCTGCATAGCCCCAAGAGGACAGC
58	AAACCATCAGGTCTTGTG	OBD183-3759	TTGAAAAACCACAGAC

	GCCTAAAG		AATTGCAAAA
59	GAAAATGTTGGATCATTTACAAATC	OBD183-3763	CCTTATATTCCTTACTCTAGTTGTG
60	GTGACGGGAGGGTGCTTCTGC	OBD183-3767	TAAAAGAGCTGGAGGCAGATT
61	TTATTCCCTTTAATAAATGAGG	OBD183-3771	CCAGGCTGATCTTGAACTCCTG
62	CTGCATGGTATTATTTGTCTGTCT	OBD183-3775	TTGCTTGTGATCGCAGAATGTAGT
63	TCCCTCTCAGAACGAAAGCAG	OBD183-3779	CTTCAGCATATAATTTTCAAA
64	AAAATCCCAGCAAGTTATTCTGTGG	OBD183-3783	TGATCAAGTGTGGGGGCGAGTGTTG
65	AGAATAGGTTTTCATATATCAAAAA	OBD183-3787	TCCTATGAGGAGGGTATTTTTATTA
66	AACGGGCTGCACCAGCTCTCT	OBD183-3791	TACTGCATATGTGCATACAAT
67	GAAAGCACCCTGGATGCTTGGC	OBD183-3795	CTGGATAAAAATATGAGACCCA
68	ACCATATCTGTACCTAGGCAGAGAC	OBD183-3799	AAGCACCTCTGATTGTCTAAGTGGA
69	CTCCTACATGGGTCCCACCGCCCC	OBD183-3803	GTTCAGGAAAGGAGGGGTCCTGGC
70	GTAGGATAACGTTGCTCATGTATTA	OBD183-3807	CTGGAAAAAACCTAAGTACATATAT
71	ATAACTGAGATTATTAATTGCGGTAA	OBD183-3811	GGTTCTCAGGGTCCAGGATTCCAGGA
72	GATAAAGCCTACATAATTTTG	OBD183-3815	AAGTTTGTGGCACCTCCTTCC
73	AGTCCTATGCAGGGTTAGCTCTG	OBD183-3819	CTCCCAGGTTCAAGCGATTCTTC
74	CTGCTCTCTCTGGGTGGCCGTTGTTC	OBD183-3823	CCCAAAATGCTGGGGTTATAGGTATG
75	TATTCCTTACAGCTCCTGATTAACT	OBD183-3827	ATACACATGTGGCATTAAAAATGCC
76	TGGCCTCTCATTAGCTTTACAAAGGC	OBD183-3831	TGGTCCGTGTTTGTTACAGCTTGAGC
77	ATTTCATTGAGATGTGGGGACTGGGG	OBD183-3835	ACCAATTTCAATGACAAATGCATGGT
78	AGAAACAGCCAAGGTCAACATTTG	OBD183-3839	GCTTTGCATGATTATCCAAGTACA
79	GAGTGAAGAGGAAGAAGAGGGAGAAG	OBD183-3843	AGTAAGCAAGGCAGCTCCTGCCTGGA
80	TCTGAAGAAACTAAGATCCAGGG	OBD183-3847	TACATATGTATGTATGTATATAT

81	AGGAGCGGGCGGCCAGGCCAC	OBD183-3851	TAGCCACAAGGAACAGAAAGG
82	TTGCTGGTCACTATGAGGCCTG	OBD183-3855	GAGTGTCCAGGCTAAACAGGCC
83	ACAATGGTTCTAGAGTCAGGACGTTA	OBD183-3859	TAGCAAAACAGCAGCAATAGCAGTTC
84	GAGTCGGTGGTTTTTAGTATAT	OBD183-3863	TAAAAAAGCTGTAAGTGTCACC
85	CAAAAATAATAGCAAAAGTAGG	OBD183-3867	TACTTACTGATGCCCAACAAAG
86	TGGAGGAGGGAGGAGTCAAGTGAGG	OBD183-3871	TGCTGTGAGATTAACTTCTGATCAC
87	TCGGTTCTGATTTTCTCCAGGAA	OBD183-3875	AAGTGAGTCTGGTAAGGGACTCA
88	TGGAGGGTACGTCCCAAGACGATGGT	OBD183-3879	TGAGGACTGGGAAGAAGTTGAAAAGC
89	CCAGATTAACGACCATTACTAG	OBD183-3883	AAACCAGCTCCTGGATTCATTG
90	CTATTTCTTTTTACCATTTTA	OBD183-3887	CAATACCCTAAAACAACCTCA
91	ATATTTTGCTAAGCCTATAATAT	OBD183-3891	CTTTAAGTCAATATCTCCTTAAA
92	AGGGACCATAAGCCCAATTCACACTT	OBD183-3895	CGGCGGCTCTGGCCCAGCCTGCGGCC
93	CTCAAAGCAGCAGGAAGTGAT	OBD183-3899	GGTGCCCCTGCACAGGATGGC
94	CCTTTTGAATAGGAGATTTCCTTTAA	OBD183-3903	CACAAAGACCCCTAACTCAGTCTTGG

表17.b8

【發明申請專利範圍】

【請求項1】

一種確定個體之免疫健康之方法，其包含確定一或多種由表1或表3中所示之探針表示之染色體交互作用之存在或不存在，由此確定該個體之該免疫健康。

【請求項2】

如請求項1之方法，其中：

(i)至少3種染色體交互作用係自表1分型，及/或

(ii)至少3種染色體交互作用係自表3分型。

【請求項3】

如請求項1或2之方法，其中：

(i)至少10種染色體交互作用係自表1分型，及/或

(ii)至少10種染色體交互作用係自表3分型。

【請求項4】

如前述請求項中任一項之方法，其中：

(i)至少3種或至少10種染色體交互作用係自表2分型，及/或

(ii)至少3種或至少10種染色體交互作用係自表4分型。

【請求項5】

如前述請求項中任一項之方法，其中如下分型該等染色體交互作用：

在來自個體之樣品中，及/或

藉由偵測該等染色體交互作用之位點處DNA環之存在或不存在，及/或

偵測以染色體構形結合在一起的染色體之遠端區域之存在或不存在，及/或

藉由偵測在該分型期間產生且其序列包含各自對應於在該染色體交互作用中聚集在一起之該染色體之區域的兩個區域之經接合核酸之存在，及/或

藉由偵測在該染色體交互作用中聚集在一起之該等染色體區域之鄰近度的方法。

【請求項6】

如前述請求項中任一項之方法，其中該偵測該等染色體交互作用之存在或不存在係藉由包含以下之方法進行：

(i)活體外交聯存在之表觀遺傳染色體交互作用；

(ii)視情況分離交聯DNA；

(iii)使該交聯DNA經歷裂解；

(iv)接合該等經裂解之交聯DNA末端以形成經接合DNA；以及

(v)鑑別該經接合DNA之存在或不存在；

由此確定該染色體交互作用之存在或不存在。

【請求項7】

如請求項5或6之方法，其中藉由PCR或藉由使用探針偵測該經接合DNA。

【請求項8】

如請求項7之方法，其中：

(i)偵測係藉由使用探針進行，其中該探針與表1或表3中所示之探針中之任一者具有至少70%同一性，或

(ii)偵測係藉由使用PCR進行，其中該PCR使用與表1或表3中所示之引子對中之任一者具有至少70%同一性的引子對。

【請求項9】

如前述請求項中任一項之方法，其中：

(i)進行該方法以選擇個體用於接受療法或治療，及/或

(ii)對已經基於身體特徵、風險因素或症狀存在進行預先選擇之個體進行該方法，及/或

(iii)進行該方法以確定預後，視情況確定疾病病狀之嚴重程度，及/或

(iv)進行該方法以確定對療法之免疫反應，較佳確定該療法之免疫相關副作用之預後。

【請求項10】

如前述請求項中任一項之方法，其中該個體：

(i)疑似患有與免疫系統相關之病狀，該病狀視情況為感染，及/或

(ii)已住院。

【請求項11】

如前述請求項中任一項之方法，其中該個體：

處於疾病早期或症狀前階段；

將給與療法(例如1年內)，且視情況進行該方法以確定對該療法之免疫反應的易感性，例如作為副作用；

患有或疑似患有例如由病毒、細菌或真菌病原體所致之感染；

正在經受或將要經受癌症療法，例如癌症免疫療法；

患有或疑似患有神經退化性疾病；

患有或疑似患有自體免疫疾病；

患有敗血症或處於敗血症之風險下；

正在經受或將要經受用於敗血症之療法；

為免疫功能不全的，例如歸因於已與免疫抑制劑一起投與；

過敏；

懷孕；或

患有慢性病狀。

【請求項12】

如前述請求項中任一項之方法，進行該方法以確定對於以下之預後：

(i)在病狀下之免疫過度反應，或

(ii)免疫相關副作用，視情況對於療法的免疫相關副作用；

其中該個體尚未患有該病狀或尚未經受該療法。

【請求項13】

如前述請求項中任一項之方法，其中至少5種染色體交互作用進行分型，該等染色體交互作用存在於：

(i)表1或表3中所示之任何4kb區域，及/或

(ii)表1或表3中所示之基因。

【請求項14】

如前述請求項中任一項之方法，其中至少10、20、30或50種染色體交互作用進行分型，且較佳地5至50種染色體交互作用進行分型。

【請求項15】

一種確定個體之免疫健康的方法，其視情況附屬於前述請求項中任

一項，該方法包含確定一或多種由表7中所示之探針表示之染色體交互作用之存在或不存在，由此確定該個體之該免疫健康。

【請求項16】

如請求項15之方法，其中至少3、4、5或6種染色體交互作用係自表7分型。

【請求項17】

如請求項15或16之方法，其中如下分型該等染色體交互作用：

在來自個體之樣品中，及/或

藉由偵測該等染色體交互作用之位點處DNA環之存在或不存在，及/或

偵測以染色體構形結合在一起的染色體之遠端區域之存在或不存在，及/或

藉由偵測在該分型期間產生且其序列包含各自對應於在該染色體交互作用中聚集在一起之該染色體之區域的兩個區域之經接合核酸之存在，及/或

藉由偵測在該染色體交互作用中聚集在一起之該等染色體區域之鄰近度的方法。

【請求項18】

如請求項15至17中任一項之方法，其中該偵測該等染色體交互作用之存在或不存在係藉由包含以下之方法進行：

(i)活體外交聯存在之表觀遺傳染色體交互作用；

(ii)視情況分離交聯DNA；

(iii)使該交聯DNA經歷裂解；

(iv)接合該等經裂解之交聯DNA末端以形成經接合DNA；以及

(v)鑑別該經接合DNA之存在或不存在；

由此確定該染色體交互作用之存在或不存在。

【請求項19】

如請求項15至18中任一項之方法，其中藉由PCR或藉由使用探針偵測該經接合DNA。

【請求項20】

如請求項19之方法，其中：

(i)偵測係藉由使用探針進行，其中該探針與表7中所示之探針中之任一者具有至少70%同一性，或

(ii)偵測係藉由使用PCR進行，其中該PCR使用與表7中所示之引子對中之任一者具有至少70%同一性的引子對。

【請求項21】

如請求項19或20中任一項之方法，其中該經接合DNA係使用qPCR系統偵測，其中該探針與表7中所示之探針中之任一者具有至少70%同一性且該等引子對與表7中所示之引子對中之任一者具有至少70%同一性；其中較佳地，該探針序列為或包含表7中所示之探針序列之序列及/或各引子具有或包含表7中所示之引子之序列。

【請求項22】

如請求項19至21中任一項之方法，其中視情況使用表7中所示之所有探針及/或所有引子對偵測由表7之探針表示之所有6種染色體交互作用之存在或不存在。

【請求項23】

如請求項15至22中任一項之方法，其中：

(i)進行該方法以選擇個體用於接受療法或治療，及/或

(ii)對已經基於身體特徵、風險因素或症狀存在進行預先選擇之個體進行該方法，及/或

(iii)進行該方法以確定預後，視情況確定疾病病狀之嚴重程度，及/或

(iv)進行該方法以確定對療法之免疫反應，較佳確定該療法之免疫相關副作用之預後。

【請求項24】

如請求項15至23中任一項之方法，其中該個體：

(i)疑似患有與免疫系統相關之病狀，該病狀視情況為感染，及/或

(ii)已住院。

【請求項25】

如請求項15至24中任一項之方法，其中該個體：

處於疾病早期或症狀前階段；

將給與療法(例如1年內)，且視情況進行該方法以確定對該療法之免疫反應的易感性，例如作為副作用；

患有或疑似患有例如由病毒、細菌或真菌病原體所致之感染；

正在經受或將要經受癌症療法，例如癌症免疫療法；

患有或疑似患有神經退化性疾病；

患有或疑似患有自體免疫疾病；

患有敗血症或處於敗血症之風險下；

正在經受或將要經受用於敗血症之療法；

為免疫功能不全的，例如歸因於已與免疫抑制劑一起投與；

過敏；

懷孕；或

患有慢性病狀。

【請求項26】

如請求項15至25中任一項之方法，進行該方法以確定對於以下之預後：

(i)在病狀下之免疫過度反應，或

(ii)免疫相關副作用，視情況對於療法的免疫相關副作用；

其中該個體尚未患有該病狀或尚未經受該療法。

【請求項27】

如前述請求項中任一項之方法，其中染色體交互作用之該分型包含藉由定量PCR (qPCR)進行接合產物之特異性偵測，該定量PCR使用能夠擴增接合產物之引子及在PCR反應期間結合接合位點之探針，其中該探針包含與來自在該染色體交互作用中聚集在一起的該等染色體區域中之每一者的序列互補的序列，其中較佳地，該探針包含：

寡核苷酸，其特異性結合至該接合產物，及/或

螢光團，其共價附接至該寡核苷酸之5'端，及/或

淬滅劑，其共價附接至該寡核苷酸之3'端，及

視情況

該螢光團係選自HEX、德克薩斯紅(Texas Red)及FAM；及/或

該探針包含長度為10至40個核苷酸鹼基，較佳長度為20至30個核苷酸鹼基的核酸序列。

【請求項28】

如前述請求項中任一項之方法，其包含確定一或多種由表8、9、10、11、12、13、14、15、16或17中之任一者中所示之探針表示之染色體交互作用之存在或不存在。

【請求項29】

如前述請求項中任一項之方法，其包含確定以下之存在或不存在：

一或多種與免疫過度反應相關之染色體交互作用，其中較佳地，該等染色體交互作用展示於表8、9、14或15，及/或

一或多種與缺乏免疫過度反應感染相關之染色體交互作用，其中較佳地，該等染色體交互作用展示於表10、11、16或17中。

【請求項30】

如前述請求項中任一項之方法，其中該等染色體交互作用之存在或不存在係藉由如請求項18之方法確定，且：

(i)偵測係藉由使用探針進行，其中該探針與表9或表11中所示之探針中之任一者具有至少70%同一性，或

(ii)偵測係藉由使用PCR進行，其中該PCR使用與表9或表11中所示之引子對中之任一者具有至少70%同一性的引子對。

【請求項31】

如請求項30之方法，其中該經接合DNA係使用qPCR系統偵測，其中該探針與表9、11、14或16中所示之探針中之任一者具有至少70%同一性且該等引子對與表9、11、14或16中所示之引子對中之任一者具有至少70%同一性；其中較佳地，該探針序列為或包含表9、11、14或16中所示之探針序列之序列及/或各引子具有或包含表9、11、14或16中所示之引子

之序列。

【請求項32】

如前述請求項中任一項之方法，其中視情況使用表9或表11中所示之所有探針及/或所有引子對偵測由表9或表11之探針表示之至少5種染色體交互作用之存在或不存在。

【請求項33】

如前述請求項中任一項之方法，其藉由偵測表12或表13中所示之該等染色體交互作用中之任一者之存在或不存在來進行以偵測該個體之敗血症狀態。

【請求項34】

一種選自表6中所示藥劑中之任一者的治療劑，其用於治療免疫過度反應或免疫副作用之方法中，該方法包含：

藉由前述請求項中任一項之方法鑑別個體是否易患免疫過度反應或免疫副作用，及

向鑑別為易患免疫過度反應或免疫副作用之任何個體投與該藥劑。

【請求項35】

一種藥劑，其：

控制或調節免疫系統；或

其預防或治療異常免疫反應；或

預防或治療免疫反應之過度反應；

其用於治療免疫健康已根據請求項1至33中任一項確定之個體。

【請求項36】

一種治療敗血症之治療劑，其用於治療敗血症之方法中，該方法包

含：

藉由如請求項1至33中任一項之方法來鑑別個體是否易患或已患有敗血症，及

向鑑別為易患或已患有敗血症之任何個體投與藥劑。

【請求項37】

一種預防或治療敗血症之藥劑，其用於治療根據請求項1至33中之任一項已鑑別為易患或已患有敗血症之個體。

第一DNA片段
第二DNA片段
第一DNA片段
第二DNA片段
第一DNA片段
第二DNA片段

【圖3】

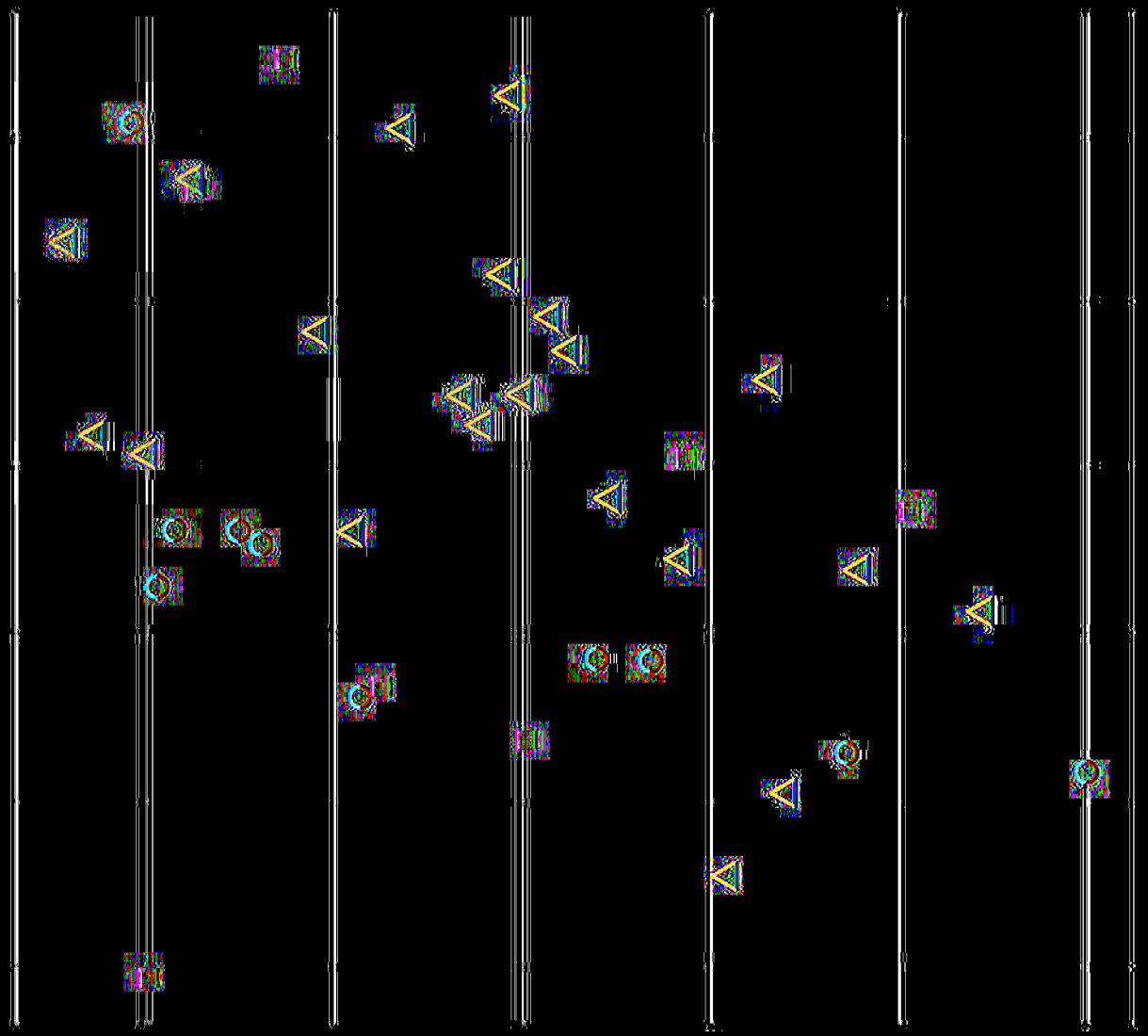


圖 (5)

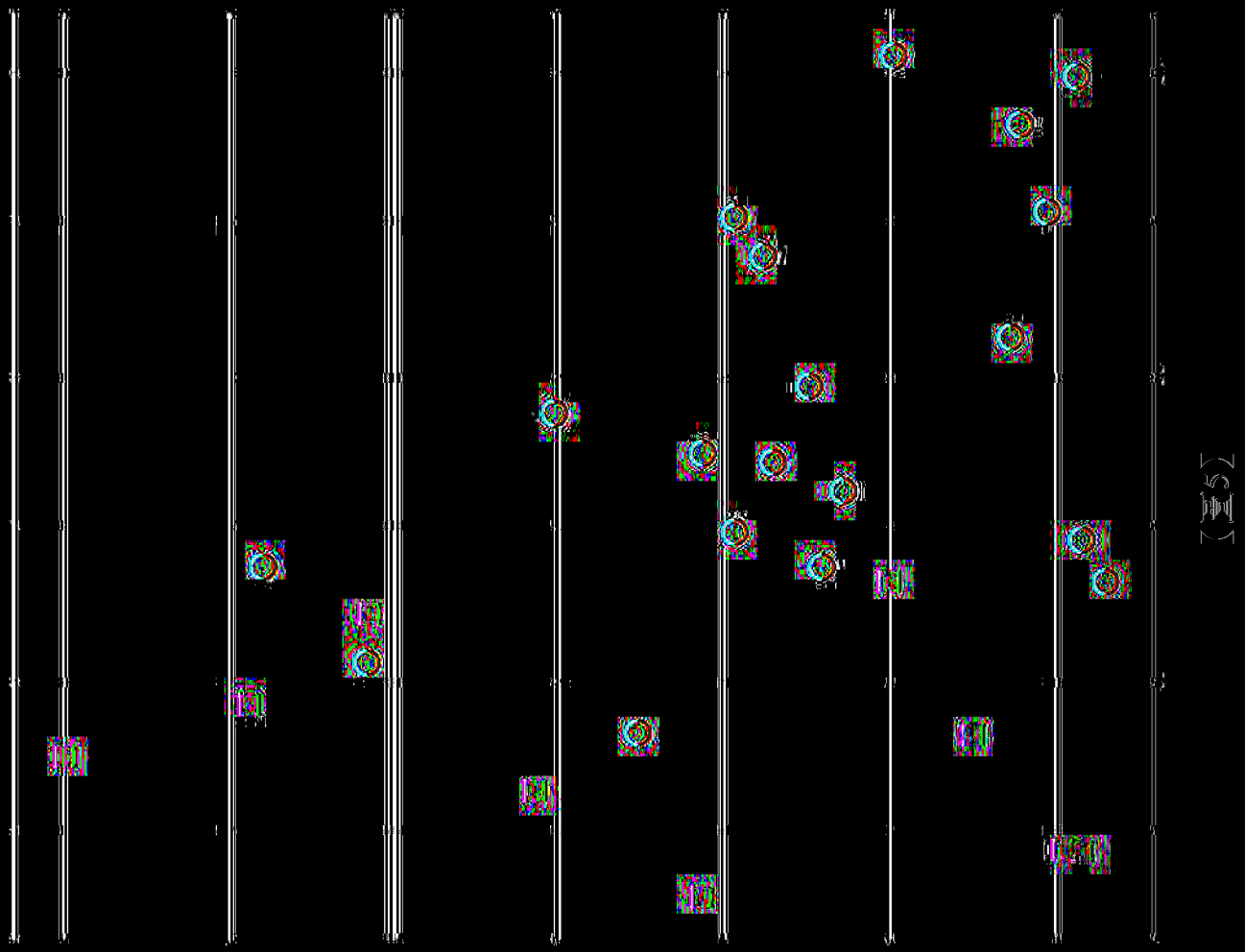
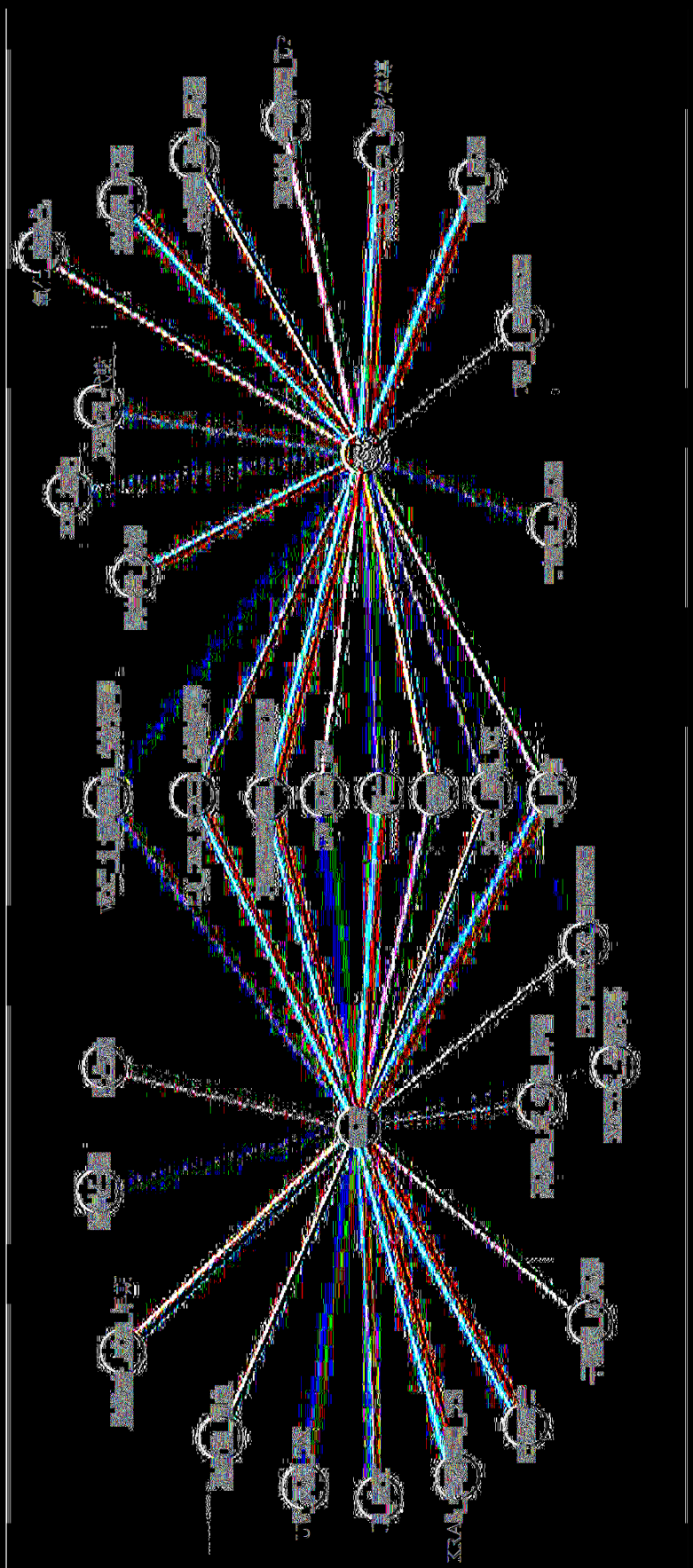


圖 5

Sections
(96)



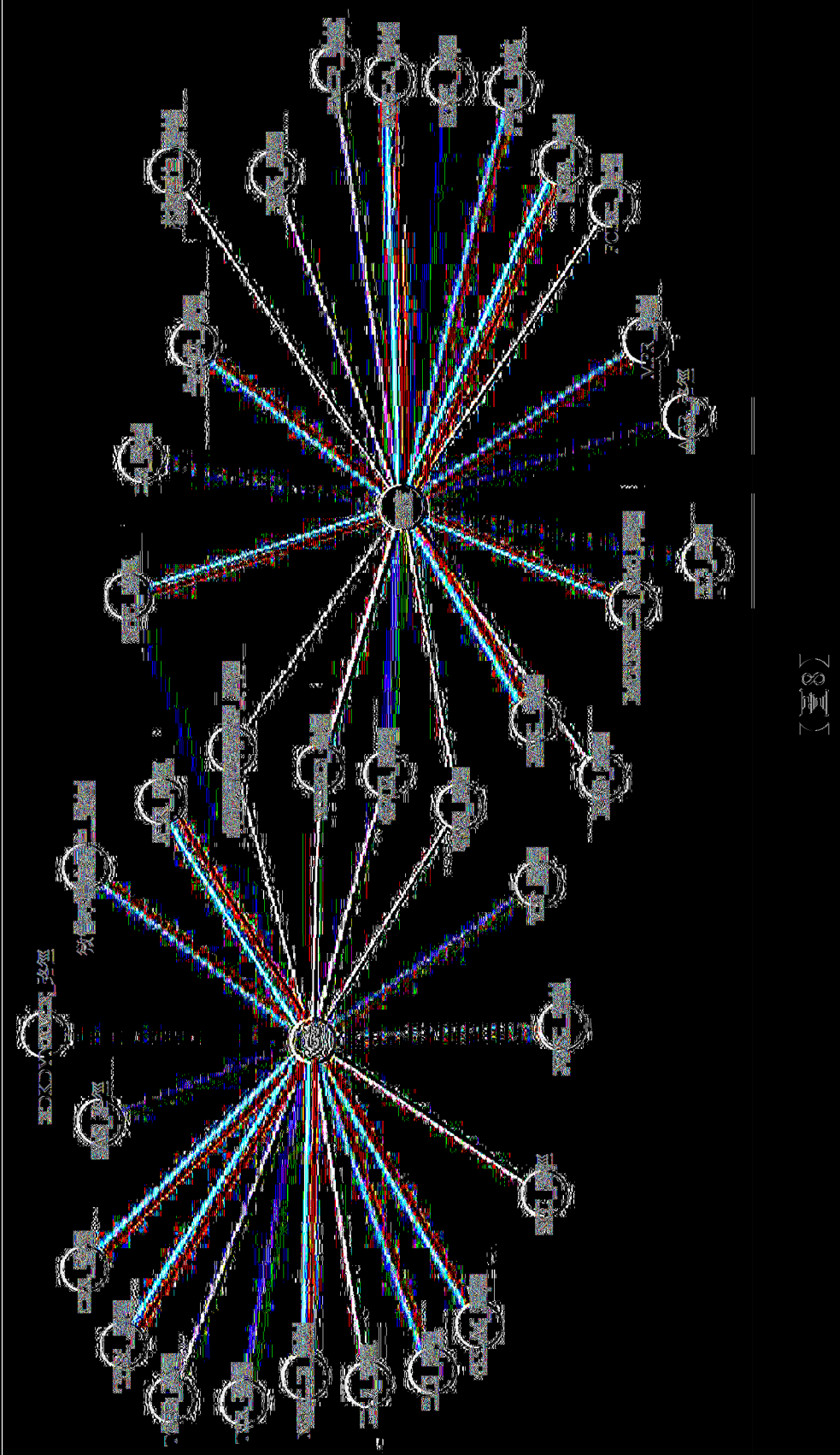


圖3

0.3V3之最大小之CCS數
0V3
25V3
50V3
75V3
100V3
125V3
150V3
175V3
200V3
222V3

圖7(二)

圖 1(2)

0.3V之窗大小大之CCS數目
0V.5
27V.5
54V.5
81V.5
'08V.5
'35V.5
'62V.5
'89V.5
2'16V.5
242V.5

（第13）

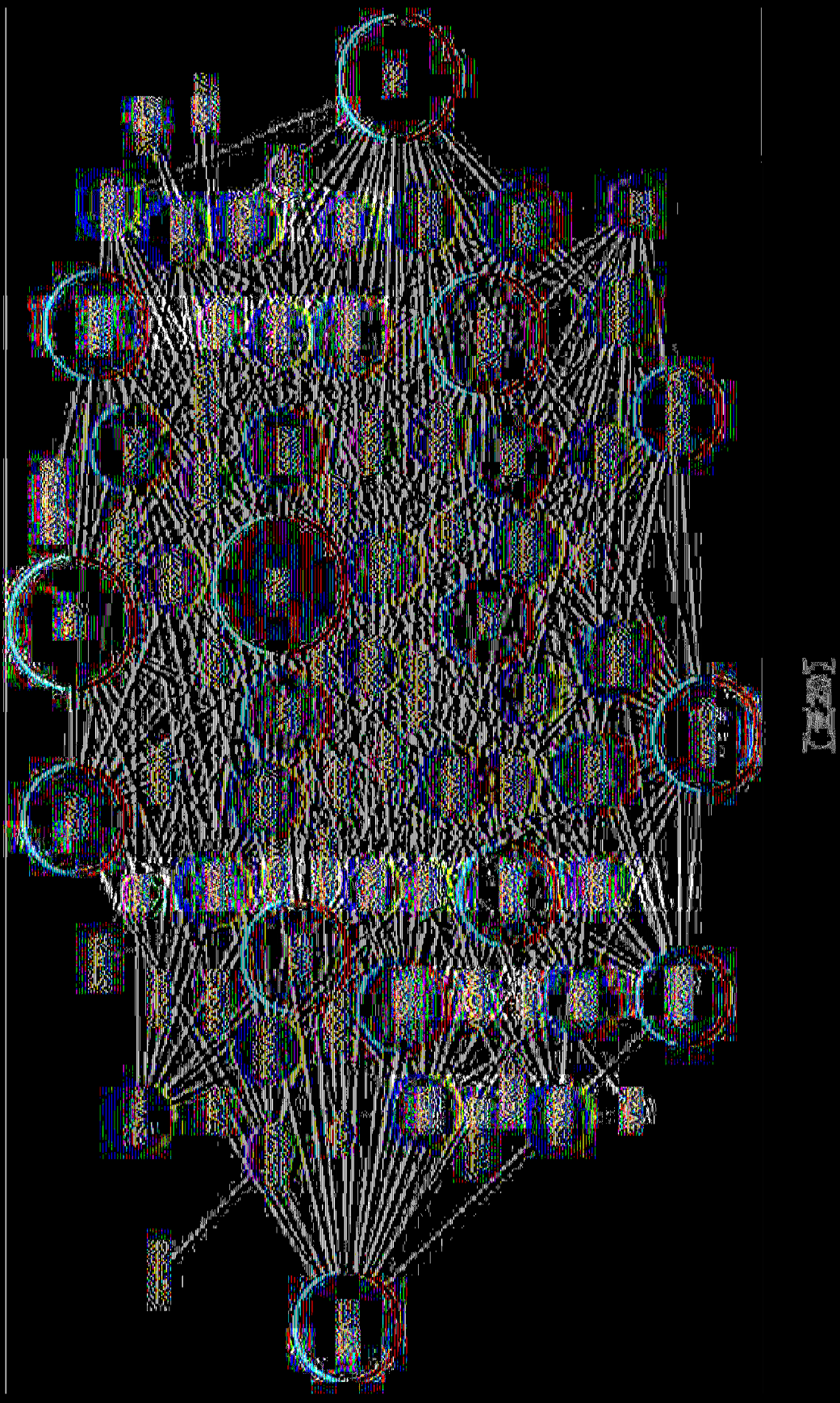


圖 2

路徑：20，匹配以太數目：16

輸入道道文本

名稱	匹配以太數目(線以太)	來源
SuperPath：G蛋白信號傳導 Rap1A	3(60)	
SuperPath：羧酸之結合	2(40)	
SuperPath：Golgi至ER逆行輸送	4(80)	
SuperPath：囊泡介導之輸送	7(140)	
SuperPath：藉由STAT4介導之IL12信號傳導	2(20)	
SuperPath：活化且靜態的T細胞中之	2(36)	
SuperPath：T細胞中之Nur77信號傳導	2(66)	
SuperPath：抗原交叉處理呈現	3(121)	
SuperPath：TCR信號傳導(REACTOME)	3(122)	
SuperPath：WNT信號傳導	4(260)	
SuperPath：CTL介導之細胞凋亡	2(36)	
SuperPath：蘇胺酸分解代謝	1(2)	
SuperPath：活化細胞之	4(185)	
SuperPath：網格蛋白介導之內飲作用	3(152)	
SuperPath：ZAP-70至免疫突觸之轉位	2(46)	
SuperPath：B細胞受體信號傳導路徑	3(118)	
SuperPath：[illegible]	2(49)	
SuperPath：原始CD8+ T細胞中之	2(61)	
SuperPath：Wnt信號傳導路徑淨路徑	2(63)	
SuperPath：GABA受體活化	2(66)	

(共22)

【序列表】

<110> 英商牛津生物力學公眾有限公司(Oxford BioDynamics Plc)

<120> 分析方法

<130> P105175WO01

<140> TW 111100794
<141> 2022-01-07

<150> US 63/134,765
<151> 2021-01-07

<150> US 63/163,698
<151> 2021-03-19

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<213> 人類(Homo sapiens)

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<400> 25

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<210> 28
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<400> 43
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<210> 46
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<210> 47
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<210> 48
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<210> 49
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<210> 50
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<210> 51
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<210> 52
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<210> 53
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<210> 62
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<210> 63
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<210> 64
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<210> 66
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<400> 66
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<210> 67
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<210> 70

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<210> 72
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<400> 74
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<210> 75
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<400> 77
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<210> 78
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<210> 79
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<210> 80
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<210> 81
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<210> 82
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<210> 83
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<210> 84
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<210> 85
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<210> 86
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<210> 87
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<400> 87
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<210> 88
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 88
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<210> 89
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<210> 90
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<400> 90
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<210> 91
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<210> 92
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<210> 94
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<210> 96
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<210> 99
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<210> 101
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<210> 102
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<400> 102
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<211> 60
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<210> 123
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<210> 788
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<210> 789
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<212> DNA
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<210> 810
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<212> DNA
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<211> 60
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<210> 831
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<210> 862
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<210> 863
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<210> 1180
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1180
gtcccaagtg gcatgagagg tagactcatc gaaggagtcc tgtcagaccc taggtctcca 60

<210> 1181
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<212> DNA
<213> 人類(Homo sapiens)

<400> 1181
gagaggccgt tctaaaagca catttgtatc gaataaatag aaatatagaa taaatagaca 60

<210> 1182
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<212> DNA
<213> 人類(Homo sapiens)

<400> 1182
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<210> 1183
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<212> DNA
<213> 人類(Homo sapiens)

<400> 1183
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<210> 1184
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1184
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<210> 1185
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1185
gtcccaagtg gcatgagagg tagactcatc gaaagtttcc aggactgcca cactatcagc 60

<210> 1186
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1186
agagagctca atgtgtttcg gctttagttc gatgctcata ttgtcccaaa tttaggctgg 60

<210> 1187
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1187
cagcgcgcag ccaaaccgtc gggaacactc gagcagcggg aatgtttgtc ttgggattag 60

<210> 1188
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1188
cccgcgctag taactgagct ttcagtcatc gaagtatgct cctacgctag gtaagtcttg 60

<210> 1189
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1189
tacagctgca ggaaaacccc gttcttattc gacagagacc tccccaggat gagtaaacct 60

<210> 1190
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1190
cctccctggg tcaccagctt cgtgaccctc gactcaaagg agaaaaatgc atgtcccccc 60

<210> 1191
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1191
tccggagctc agaggttcgg aagacttatc gaaaagactt taacatattt gaataccaat 60

<210> 1192
<211> 60
<212> DNA

<213> 人類(Homo sapiens)

<400> 1192
cacgccaaac ctcaagtaca tactaatttc gactcatgct cttgaaaata gtaagaaaaa 60

<210> 1193
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1193
aagactcctg tctcaagagc cgagctcctc gaagccattt ataagggtta gaactaactt 60

<210> 1194
<211> 60
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<400> 1194
gtgggcagat tggacaatcg tgagaagatc gagcacatgc aattccctct gctccatgac 60

<210> 1195
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1195
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<210> 1196
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1196
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<210> 1197
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<212> DNA
<213> 人類(Homo sapiens)

<400> 1197
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<210> 1198
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1198
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<210> 1199
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1199
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<210> 1200
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1200
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<210> 1201
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1201
cgccctccca ggagatcccc acaactaatc gacttaagga aagaaaaagt catatgctga 60

<210> 1202
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<212> DNA
<213> 人類(Homo sapiens)

<400> 1202
aagcgagcgg atcacctcgg ccaggagttc gagacaagcc tggccaacat ggtgaaaccc 60

<210> 1203
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1203
gtgaacattc actgtcttcc tgacagcttc gatagataga tactatttta ttttatttt 60

<210> 1204
<211> 60
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<213> 人類(Homo sapiens)

<400> 1204
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<210> 1205
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1205
aggtgagaag ctttgtccga gatgatggtc gaagaaaggg aaatgacttc ttctcagtag 60

<210> 1206
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1206
cggattctgg ttacagagag ggatgagatc gaatggactc cgctaagtgt gttggcttga 60

<210> 1207
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1207
aggtgagaag ctttgtccga gatgatggtc gatatattgc acttccaagg tatcatctga 60

<210> 1208
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<212> DNA
<213> 人類(Homo sapiens)

<400> 1208
agaactcacc atattgccag ggctggtctc gaactcctga cgtcaggtgt tccacccgcc 60

<210> 1209
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1209
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<210> 1210
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1210
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<210> 1211
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1211
cccccatcat ttgacaaaat atcataactc gagtcccctt tgatttgcgc ttcattaatt 60

<210> 1212
<211> 60
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<213> 人類(Homo sapiens)

<400> 1212
tcaaaaggga agactgccta tatcaaactc gagtcccctt tgatttgcgc ttcattaatt 60

<210> 1213
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1213
aattaatgaa gcgcaaatca aaggggactc gactataaga gagaggtacg ctccgggggg 60

<210> 1214
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1214
aggctccgtt ccagttcttg atccacactc gagtcccctt tgatttgcgc ttcattaatt 60

<210> 1215
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1215
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<210> 1216
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1216
cagtccttgc ctcctcagaa gaaagaactc gagtcccctt tgatttgcgc ttcattaatt 60

<210> 1217
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1217
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<210> 1218
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1218
aattaatgaa gcgcaaatca aaggggactc gaatccctgg gctgaagtga tccacttgcc 60

<210> 1219
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1219
aagcgagcgg atcacctcgg ccaggagttc gagagcagcc tggccacatg ggagggaggg 60

<210> 1220

<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1220
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<210> 1221
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1221
cccgcgctag taactgagct ttcagtcatc gatgttacca tgaggctttc aaataacaag 60

<210> 1222
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1222
acagtcctcc gctctaccaa ctgagctatc gaaacctgat gatatggctt ctccattcat 60

<210> 1223
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1223
cagaaagaag acaaggggca tctgaatgtc gaatcaagtt tataatttta aaataattgg 60

<210> 1224
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1224
tccctgagtt atgcagctct tccaaatgtc gaggagctaa aagcgaaggc cgcggggaag 60

<210> 1225
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1225

accacaccct ggtcctggta gttaaagatc gaccactttc aaatcttttc cacctggtaa 60

<210> 1226
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1226
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<210> 1227
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1227
gttgtcttac tcctgaagga tgctgcagtc gaggcatttt aactaaatta tctgcttcac 60

<210> 1228
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1228
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<210> 1229
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1229
cccgcgctag taactgagct ttcagtcatc gaaaataaat aagtaaaatt aaaaaaaaat 60

<210> 1230
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1230
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<210> 1231
<211> 60

<212> DNA
<213> 人類(Homo sapiens)

<400> 1231
taactcacaa aggcaagatt agttgatgtc gaggatgagg taaaggtctc ggaggataag 60

<210> 1232
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1232
caaagcagag gaacacagca aaacacattc gagttcacat tctgccctaa caattacaac 60

<210> 1233
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1233
aatgacacgc taaaaggaaa aaggaacgtc gaacctctca gcttgctcct tcctattctg 60

<210> 1234
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1234
gtttttggct accagtcctt cacctgcgtc gacctttata gacgctatca aggaagcacc 60

<210> 1235
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1235
ttgtggtgag aacgatacag gagacagctc gaaatggttc atagatttaa gtgtaaaagt 60

<210> 1236
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1236
attttgtctg tgaggtccca gctctaattc gactctcctg tgaagacacc tcctacaatg 60

<210> 1237
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1237
cccgcgctag taactgagct ttcagtcatc gacaaactat gcatttctca gaatgcatct 60

<210> 1238
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1238
gtatgaggtg caaggcccca cccattcttc gagcaagaag aggagggcca agcccaggcc 60

<210> 1239
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1239
gtcccaagtg gcatgagagg tagactcatc gaactcatcc attccaaaga tggctcaggg 60

<210> 1240
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1240
gcagggacac ttttcaagag ttctgtgttc gagatattaa acaagacatt caattggttc 60

<210> 1241
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1241
gttggaagga atccagggta agggatattc gagggaccaa atctccaact ttttttccc 60

<210> 1242
<211> 60
<212> DNA

<213> 人類(Homo sapiens)

<400> 1242
gttggaagga atccagggta agggatattc gagggttgct tttctttttc aagaaaaatt 60

<210> 1243
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1243
ttctcatgtt aataaacatg aaaaatggtc gatttttaaa cctcagcgag ggtgggtggg 60

<210> 1244
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1244
aggtgaccgt cttccagagg agagcggatc gacctttata gacgctatca aggaagcacc 60

<210> 1245
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1245
gagacgcggg agaaaagtag gaaataaatc gaaaataaaa caactacgtt tgctgtacaa 60

<210> 1246
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1246
gccaggatag ggaagaagca gattgatatc gaggatgata gatcccaagg agagagtgac 60

<210> 1247
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1247
caaaccagag atgaagcaac aggtctaatc gagtcctttg cccatatttt gattggattg 60

<210> 1248
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1248
cggagggtat aataactgct gttgtgtatc gagggctttt caggactgga gtgactgatg 60

<210> 1249
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1249
gagaggccgt tctaaaagca catttgtatc gaacactttg gacagcagtc ttttaaatgg 60

<210> 1250
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1250
gagaggccgt tctaaaagca catttgtatc gagttggtca cctgagccta ttattgacgg 60

<210> 1251
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1251
caaccaacca gaaaacacag gaaacaactc gatttgggaa ctaaaggatt aggcttcttg 60

<210> 1252
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1252
acgctgagga ggaagattcg ggctggattc gaggaagtgt ttctggccat ggtgaggcct 60

<210> 1253
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1253
ctgccttcct aaccatgtcc tgagaaactc gaaaagcaca atccatgaaa gaaaaaaatt 60

<210> 1254
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1254
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<210> 1255
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1255
gttggaagga atccagggta agggatattc gatactgctt gaacataaaa tgaaatgtag 60

<210> 1256
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1256
caaagcagtc aaggcccaaa gacaaccctc gaaaagaatg tgagacatac ctcaggaaaa 60

<210> 1257
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1257
ttgtggtgag aacgatacag gagacagctc gatttgtagc tgatgcatcg caaactaaaa 60

<210> 1258
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1258
cgccctccca ggagatcccc acaactaatc gacaccctct gatttcatcc ctgaccagtc 60

<210> 1259
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1259
gccatcagat ctcccacatg aggcattttc gactttgtct ccatccaagg acgctatggc 60

<210> 1260
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1260
gtcccaagtg gcatgagagg tagactcatc gagcctgcag tctctgctac tcaggaggct 60

<210> 1261
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1261
gccatcagat ctcccacatg aggcattttc gacttcacca tccagctggc ctccagcagc 60

<210> 1262
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1262
cccagctcct gcaaaactcc tcctgacttc gagattctgt ctaaaaaaaa aagataaaag 60

<210> 1263
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1263
cggagggtat aataactgct gttgtgtatc gacgcggagg cccttgggca tagtcaagac 60

<210> 1264
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1264
gtcccaagtg gcatgagagg tagactcatc gaaaggacct gtctctgccc ataagagggc 60

<210> 1265
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1265
agctgttcct ttaatcttcc cagcactatc gatgaacact tctttccaaa aaaagtttac 60

<210> 1266
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1266
ttctagatgc cgggatacag agatgagttc gacatgtacg gcctggctca gcattgcctt 60

<210> 1267
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1267
aggaaatgta ctaactgtta aggaaaactc gaagctcttt aaaagtattc caaccccatc 60

<210> 1268
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1268
cttatcctcc gagaccttta cctcatcctc gatgactctt ggaggatgct gggagcctga 60

<210> 1269
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1269
cactccatgg tctctccctc atccctaatc gatacagaaa aatttcaaga aaaatttcat 60

<210> 1270

<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1270
atgaggctgt ggaagagcaa aatgagtttc gacatggtgg tataccatgg tggtgatact 60

<210> 1271
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1271
agtactcttt gttgtcattt agtatgtatc gaggtcaatg tcgcatagct aataagacct 60

<210> 1272
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1272
aaactagagg gatctaccag aggaggtgtc gatttgttga atgttcttca gggatagcct 60

<210> 1273
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1273
agcaaggaac ataattatgg ctgtgctttc gatgatgcag ttgcttttga aactctttaa 60

<210> 1274
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1274
agctgttcct ttaatcttcc cagcactatc gagtgccact atttttaaac agatcttaaa 60

<210> 1275
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1275

agctgttcct ttaatcttcc cagcactatc gatcataaat tagtaaattg aaagatcaag 60

<210> 1276
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1276
gccatcagat ctcccacatg aggcatttc gacctcaacc aggtcaaagg gaacaaaggg 60

<210> 1277
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1277
attcagggcg ggggtcctct tgccaagatc gatagaccac tagcaagact aataaagaag 60

<210> 1278
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1278
ttgtggtgag aacgatacag gagacagctc gaatgtgcaa agtataacaa aaagataggt 60

<210> 1279
<211> 23
<212> DNA
<213> 人類(Homo sapiens)

<400> 1279
ggcaaagagc agacagggaa agg 23

<210> 1280
<211> 23
<212> DNA
<213> 人類(Homo sapiens)

<400> 1280
ctctcccttc tctcctaccc tgc 23

<210> 1281
<211> 26

<212> DNA
<213> 人類(Homo sapiens)

<400> 1281
tgacagcaga aggagcagga ccacaa 26

<210> 1282
<211> 26
<212> DNA
<213> 人類(Homo sapiens)

<400> 1282
aggatggtga cccttgtatc agttag 26

<210> 1283
<211> 23
<212> DNA
<213> 人類(Homo sapiens)

<400> 1283
acagggaaag ggaggcagaa ggg 23

<210> 1284
<211> 23
<212> DNA
<213> 人類(Homo sapiens)

<400> 1284
gtccatctgt ccagtcaggt cct 23

<210> 1285
<211> 24
<212> DNA
<213> 人類(Homo sapiens)

<400> 1285
attgatgatc tcgcgagacg cttt 24

<210> 1286
<211> 25
<212> DNA
<213> 人類(Homo sapiens)

<400> 1286
aaaggcgtcc agtctcgtgt ataag 25

<210> 1287
<211> 26
<212> DNA
<213> 人類(Homo sapiens)

<400> 1287
aaagagcaga cagggaaagg gaggca 26

<210> 1288
<211> 26
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<210> 1558
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<400> 1558
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<210> 1559
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<213> 人類(Homo sapiens)

<400> 1559
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<210> 1560
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<212> DNA
<213> 人類(Homo sapiens)

<400> 1560
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<210> 1561
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1561
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<210> 1562
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1562
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<210> 1563
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<212> DNA
<213> 人類(Homo sapiens)

<400> 1563
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<210> 1564
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1564
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<210> 1565
<211> 60
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<213> 人類(Homo sapiens)

<400> 1565
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<210> 1566
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<213> 人類(Homo sapiens)

<400> 1566
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<210> 1567
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<212> DNA
<213> 人類(Homo sapiens)

<400> 1567
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<210> 1568
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<212> DNA
<213> 人類(Homo sapiens)

<400> 1568
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<210> 1569
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1569
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<210> 1570

<211> 60
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<213> 人類(Homo sapiens)

<400> 1570
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<210> 1571
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<212> DNA
<213> 人類(Homo sapiens)

<400> 1571
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<210> 1572
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1572
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<210> 1573
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1573
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<210> 1574
<211> 60
<212> DNA
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<400> 1574
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<210> 1575
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<212> DNA
<213> 人類(Homo sapiens)

<400> 1575

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<210> 1576
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<212> DNA
<213> 人類(Homo sapiens)

<400> 1576
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<210> 1577
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1577
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<210> 1578
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1578
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<210> 1579
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1579
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<210> 1580
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1580
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<210> 1581
<211> 60

<212> DNA
<213> 人類(Homo sapiens)

<400> 1581
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<210> 1582
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<212> DNA
<213> 人類(Homo sapiens)

<400> 1582
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<210> 1583
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1583
gttcctaaga cctttctttc cacagatctc gattaaattt gataccccct catgctaaaa 60

<210> 1584
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1584
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<210> 1585
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1585
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<210> 1586
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1586
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<210> 1587
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1587
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<210> 1588
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1588
gatgattccg tgcagtcatt taaacagttc gattctggaa gacaaaacaa aggatcaacc 60

<210> 1589
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1589
cacttcgctg tctaccatgt accatgtatc gatgtctcag gtaatttatt tttacagtag 60

<210> 1590
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1590
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<210> 1591
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1591
aaactagagg gatctaccag aggaggtgtc gagaaacaca gtgaggaact gatctgtttt 60

<210> 1592
<211> 60
<212> DNA

<213> 人類(Homo sapiens)

<400> 1592
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<210> 1593
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1593
aattttctcc cagaggatgg ggaaccaatc gagctatgca aatgcctctc acggagatgc 60

<210> 1594
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1594
aaaatgatcg ggatataaat ccaggcattc gagcttgtaa tccagcactt tgggagactg 60

<210> 1595
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1595
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<210> 1596
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1596
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<210> 1597
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1597
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<210> 1598
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1598
gccatcagat ctcccacatg aggcattttc gatggctcag atcctgagat ccaaggaaca 60

<210> 1599
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1599
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<210> 1600
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1600
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<210> 1601
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1601
acaggaggct cctctaacac atctcctctc gaaagaacaa agcccaaatt gtttaccacc 60

<210> 1602
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1602
atacaagtgg ctggacagcg agaggacgtc gagcccagtg acaccattga gaatgtcaaa 60

<210> 1603
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1603
cccagtcacg taccctctgc ttgctcaatc gatccaatta aaataacata cattatagac 60

<210> 1604
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1604
cggagggtat aataactgct gttgtgtatc gaagtgcagc aaagaggtaa tttctgtcaa 60

<210> 1605
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1605
tcacactgct catagcgttt gtttattctc gaagtagagt attgctctct gcactttgtt 60

<210> 1606
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1606
gccaggatag ggaagaagca gattgatatc gaggacagta ggctttccca gagagagtct 60

<210> 1607
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1607
tgaccccaag cattctggcc tgaacgattc gaatcttcct tgcatctcaa ggataagtcc 60

<210> 1608
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1608
caaagcagtc aaggcccaaa gacaaccctc gaggggtttc aaacgccacc aaggagccca 60

<210> 1609
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1609
cggattctgg ttacagagag ggatgagatc gagctggata tcaaggaggc aaagaaggag 60

<210> 1610
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1610
atgaggctgt ggaagagcaa aatgagtttc gattaatggc ctgcaattgt cattgttgcc 60

<210> 1611
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1611
ggcacgtaga tgacttgagc tcaggagttc gagaccaaac agctcctcct agttgtcatt 60

<210> 1612
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1612
caaagcagag gaacacagca aaacacattc gaaagaaaaa agaaaaaaaa aggctcaagg 60

<210> 1613
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1613
tgaccccaag cattctggcc tgaacgattc gaaaagtaaa ataaaaactg tgccactgct 60

<210> 1614
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1614
ctccgggaat ccagcctcag taaaatattc gatttttaa cagctaaaaa gaatttttct 60

<210> 1615
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1615
ggagacaggg ttacatcagc cagtaacatc gatgttctca gagcaaaagg aaagtcgtca 60

<210> 1616
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1616
accacaccct ggtcctggta gttaaagatc gaccctccaa ggagttcact gttatttgga 60

<210> 1617
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1617
gaccataata cccaaatatc cactacaatc gagagtgaca gggagaatca aagggacagt 60

<210> 1618
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1618
gagaagggga aacacaatgt gtctgttatc gagctctgaa tttctttttc ctactagttt 60

<210> 1619
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1619
agggcttacc atggttccca ggctggtctc gaactccaaa cctcagatga accacccacc 60

<210> 1620

<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1620
tctgatttcc gagttttccc ttcatctctc gaaaaatacc aaatatatgg aaatcaaaca 60

<210> 1621
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1621
aaactagagg gatctaccag aggaggtgtc gatttgtata tatctaaatt ggaaaaatgt 60

<210> 1622
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1622
tgaccccaag cattctggcc tgaacgattc gatgatgcag ttgcttttga aactctttaa 60

<210> 1623
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<212> DNA
<213> 人類(Homo sapiens)

<400> 1623
cctgaaggag ctgaatgagc aattccaatc gaccacctga tctccccctt tcaacccatc 60

<210> 1624
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1624
gccgtctgga tctccctgga ggtgatggtc gagattagga aatatccaaa acccagaaat 60

<210> 1625
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1625

gttggaagga atccagggta agggatattc gaatttccaa gtgagttatt acagctgtcc 60

<210> 1626
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1626
caatttaggg cttcagcttc cttttccttc gaacctctca gcttgctcct tcctattctg 60

<210> 1627
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1627
ttaccaagcc cgatgttctc cacgtgactc gaggacagga actaaattat atgcagtatt 60

<210> 1628
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1628
tgaccccaag cattctggcc tgaacgattc gaaatcagga catacagatt gatacaatac 60

<210> 1629
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1629
gacacacagg aagtagccat gagaaatatc gagaaatttg tctttttttt ttttgacagg 60

<210> 1630
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1630
agcctaaaac gcagggaagg ttcttttatc gaaaggttga tatataacta gaaagaagga 60

<210> 1631
<211> 60

<212> DNA
<213> 人類(Homo sapiens)

<400> 1631
gactctgatg ctggatgaac tcccaccctc gattttatct aaatctgctt ggctgtgatg 60

<210> 1632
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1632
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<210> 1633
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 1633
gtcccaagtg gcatgagagg tagactcatc gacatcacca ggggcacatg gacaccctag 60

<210> 1634
<211> 23
<212> DNA
<213> 人類(Homo sapiens)

<400> 1634
cctttaccct aatattttgt gcc 23

<210> 1635
<211> 24
<212> DNA
<213> 人類(Homo sapiens)

<400> 1635
gaatcataag caaaagcact ggtg 24

<210> 1636
<211> 23
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<213> 人類(Homo sapiens)

<400> 1636
cgtcacagct ctattcgacg gtg 23

<210> 1637
<211> 24
<212> DNA
<213> 人類(Homo sapiens)

<400> 1637
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<210> 1638
<211> 23
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<213> 人類(Homo sapiens)

<400> 1638
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<210> 1639
<211> 23
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<400> 1639
tgggagggct gagaggtgag gaa 23

<210> 1640
<211> 26
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<400> 1640
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<210> 1641
<211> 26
<212> DNA
<213> 人類(Homo sapiens)

<400> 1641
ctatcctggt caaactggga cataca 26

<210> 1642
<211> 24
<212> DNA

<213> 人類(Homo sapiens)

<400> 1642
ccaggtgagg ttggcagcaa gcat 24

<210> 1643
<211> 26
<212> DNA
<213> 人類(Homo sapiens)

<400> 1643
gggaatagtt taggctttgg gaaatc 26

<210> 1644
<211> 23
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<213> 人類(Homo sapiens)

<400> 1644
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<210> 1645
<211> 23
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<213> 人類(Homo sapiens)

<400> 1645
agtgcgtctc tgtgtctggg cta 23

<210> 1646
<211> 26
<212> DNA
<213> 人類(Homo sapiens)

<400> 1646
tccatctaaa catcaccgtg ctccag 26

<210> 1647
<211> 25
<212> DNA
<213> 人類(Homo sapiens)

<400> 1647
gggaaccatc tttctcttct gtcat 25

<210> 1648
<211> 23
<212> DNA
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<400> 1648
ggtggaagca gcaagggaag acc 23

<210> 1649
<211> 23
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<213> 人類(Homo sapiens)

<400> 1649
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<210> 1650
<211> 23
<212> DNA
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<400> 1650
cacctcttac tcccctctcc ctt 23

<210> 1651
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<400> 1651
cggcagggaa gatgagacca cag 23

<210> 1652
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<400> 1652
ccaggtgagg ttggcagcaa gca 23

<210> 1653
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<213> 人類(Homo sapiens)

<400> 1653
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<210> 1654
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<212> DNA
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<400> 1654
gaacgcggta gctttcttca gctaa 25

<210> 1655
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<400> 1655
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<210> 1656
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<400> 1656
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<210> 1657
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<400> 1657
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<210> 1658
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<400> 1658
gcgtggatac tttcctcttc cgaact 26

<210> 1659
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<400> 1659
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<210> 1660
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<400> 1660
ggaggagtaa ggctgaaata acaggg 26

<210> 1661
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<400> 1661
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<210> 1662
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<400> 1662
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<210> 1663
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<400> 1663
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<210> 1664
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<400> 1664
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<210> 1665
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<400> 1665
gttaagtacc cagatattcg ctgg 24

<210> 1666
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<400> 1666
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<210> 1667
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<212> DNA
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<400> 1667
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<210> 1668
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<400> 1668
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<210> 1669
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<400> 1669
cccaggaatg aggaccacag tct 23

<210> 1670

<211> 26
<212> DNA
<213> 人類(Homo sapiens)

<400> 1670
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<210> 1671
<211> 26
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<400> 1671
gtggtatcct aaaacctgac ctcaac 26

<210> 1672
<211> 26
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<400> 1672
gaccaaagca cctctgaagg acaaag 26

<210> 1673
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<212> DNA
<213> 人類(Homo sapiens)

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<212> DNA
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<210> 2589
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<212> DNA
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<213> 人類(Homo sapiens)

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<210> 2604
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<210> 2605
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<400> 2607
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<210> 2608
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<400> 2608
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<210> 2609
<211> 24
<212> DNA
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<400> 2609
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<210> 2610
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<400> 2610
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<210> 2611
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<400> 2611
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<400> 2612
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<210> 2618
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<210> 2619
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<400> 2619
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<210> 2621
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<210> 2623
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<210> 2633
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<400> 2642
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<210> 2651
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<210> 2662
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<210> 2663
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<210> 2664
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<400> 2664
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<210> 2665
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<210> 2668
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<210> 2669
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<210> 2672
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<210> 2679
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<400> 2681

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<210> 2682
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<210> 2683
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<210> 2684
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<210> 2685
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<210> 2686
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<400> 2687
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<400> 2700
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<213> 人類(Homo sapiens)

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<210> 2754
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<210> 2758
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<210> 2759
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<210> 2760
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<210> 2766
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<210> 2767
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<210> 2768
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<210> 2776

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<210> 2798
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<210> 2828
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<210> 3756
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<210> 3757
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<400> 3757
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<210> 3758
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<400> 3758
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<210> 3759
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<210> 3760
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<210> 3761
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<400> 3761
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<210> 3763
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<400> 3782
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<210> 3786
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<210> 3797
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<210> 3807
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<210> 3811
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<210> 3819
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<210> 3916
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<210> 3917
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<210> 3919
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<400> 3919
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<210> 3923
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<210> 3932
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<210> 3933
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<400> 3933
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<210> 3935
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<210> 3936
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<213> 人類(Homo sapiens)

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<210> 3939
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<210> 3946
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<210> 3947
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<213> 人類(Homo sapiens)

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<210> 3949
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<210> 3950
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<210> 3951
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<400> 3953
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<210> 3954
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<210> 3955
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<210> 3970
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<210> 4062
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<210> 4160
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<210> 4183
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<210> 4205
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<400> 4222
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<400> 4224
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<210> 4301
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<210> 4302
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<210> 4303
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<210> 4304
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<210> 4305
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<210> 4306
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<210> 4308
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<210> 4309
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<210> 4310
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<400> 4311
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<210> 4312
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<212> DNA
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<210> 4313
<211> 60
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<210> 4314
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<210> 4315

<211> 60
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<210> 4318
<211> 60
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<210> 4319
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<210> 4322
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<210> 4323
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<210> 4326
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<210> 4340
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<210> 4505
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<210> 4510
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<400> 4511
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<210> 4512
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<400> 4512
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<210> 4513
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<400> 4513
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<210> 4514
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<210> 4515

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<210> 4516
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<210> 4517
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<210> 4518
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<210> 4519
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<210> 4530
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<400> 4530
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<210> 4532
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<210> 4546
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<210> 4553
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<210> 4566
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<400> 4590
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<210> 4593
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<210> 4877
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<213> 人類(Homo sapiens)

<400> 4877
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<210> 4878
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<213> 人類(Homo sapiens)

<400> 4878
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<210> 4879
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<213> 人類(Homo sapiens)

<400> 4879
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<210> 4880
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<213> 人類(Homo sapiens)

<400> 4880
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<210> 4881
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<213> 人類(Homo sapiens)

<400> 4881
gttatattcc agttatattc gacaatggca gctttctccg 40

<210> 4882
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<400> 4882
aggagcaagc tgagaggttc gaaaacttag tttttcaaaa 40

<210> 4883
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<400> 4883
aggagcaagc tgagaggttc gaacacctgc aaaggacagg 40

<210> 4884
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<400> 4884
tagagtgtac agggatactc gacaatggca gctttctccg 40

<210> 4885
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<400> 4885
aagctgatga aagctaggtc gacaatggca gctttctccg 40

<210> 4886
<211> 40
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<400> 4886
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<210> 4887
<211> 40
<212> DNA

<213> 人類(Homo sapiens)

<400> 4887
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<210> 4888
<211> 40
<212> DNA
<213> 人類(Homo sapiens)

<400> 4888
aattacatta tcaaacaatc gacaatggca gctttctccg 40

<210> 4889
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<400> 4889
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<210> 4890
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<400> 4890
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<210> 4891
<211> 40
<212> DNA
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<400> 4891
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<210> 4892
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<400> 4892
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<210> 4893
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<400> 4893
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<210> 4894
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<210> 4899
<211> 40
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<210> 4900
<211> 40
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<210> 4901
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<210> 4903
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<400> 4903
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<210> 4904
<211> 40
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<400> 4904
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<210> 4905
<211> 40
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<400> 4905
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<210> 4906
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<400> 4906
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<210> 4907
<211> 40
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<400> 4907
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<210> 4908
<211> 40
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<400> 4908
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<210> 4909
<211> 40
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<400> 4909
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<210> 4910
<211> 40
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<400> 4910
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<210> 4911
<211> 40
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<400> 4911
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<210> 4912
<211> 40
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<400> 4912
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<210> 4913
<211> 40
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<400> 4913
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<210> 4914
<211> 40
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<213> 人類(Homo sapiens)

<400> 4914
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<210> 4915

<211> 40
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<400> 4915
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<210> 4916
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<400> 4916
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<210> 4917
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<400> 4917
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<210> 4918
<211> 40
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<400> 4918
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<210> 4919
<211> 40
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<400> 4919
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<210> 4920
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<400> 4920

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<210> 4921
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<400> 4921
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<210> 4922
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<400> 4922
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<210> 4923
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<400> 4923
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<210> 4924
<211> 40
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<400> 4924
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<210> 4925
<211> 40
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<400> 4925
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<210> 4926
<211> 40

<212> DNA
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<400> 4926
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<210> 4927
<211> 40
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<400> 4927
attccaagaa aaatattttc gacaatggca gctttctccg 40

<210> 4928
<211> 40
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<400> 4928
gcaagtctca ctgactgatc gagttctctc ccatgttcca 40

<210> 4929
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<400> 4929
cagggtaaac tttctaaatc gacaatggca gctttctccg 40

<210> 4930
<211> 40
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<400> 4930
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<210> 4931
<211> 40
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<400> 4931
cggagaaagc tgccattgtc gaaaccacaa gtttgtgaac 40

<210> 4932
<211> 40
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<400> 4932
cggagaaagc tgccattgtc gaatataact ggaatataac 40

<210> 4933
<211> 40
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<400> 4933
ttttgaaaaa ctaagttttc gaacctctca gcttgctcct 40

<210> 4934
<211> 40
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<400> 4934
cctgtccttt gcaggtgttc gaacctctca gcttgctcct 40

<210> 4935
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<400> 4935
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<210> 4936
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<400> 4936
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<210> 4937
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<213> 人類(Homo sapiens)

<400> 4937
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<210> 4938
<211> 40
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<400> 4938
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<210> 4939
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<400> 4939
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<210> 4940
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<400> 4940
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<210> 4941
<211> 40
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<400> 4941
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<210> 4942
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<400> 4942
cggagaaagc tgccattgtc gatcgtagct cataatacac 40

<210> 4943
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<400> 4943
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<210> 4944
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<400> 4944
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<210> 4945
<211> 40
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<400> 4945
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<210> 4946
<211> 40
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<400> 4946
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<210> 4947
<211> 40
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<400> 4947
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<210> 4948
<211> 40
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<400> 4948
agcagattga attagtaatc gacaatggca gctttctccg 40

<210> 4949
<211> 40
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<400> 4949
tttcagatta tttaagagtc gacaatggca gctttctccg 40

<210> 4950
<211> 40
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<400> 4950
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<210> 4951
<211> 40
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<400> 4951
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<210> 4952
<211> 40
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<400> 4952
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<210> 4953
<211> 40
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<400> 4953
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<210> 4954
<211> 40
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<400> 4954
cggagaaagc tgccattgtc gaaatacgat gcaaagcctt 40

<210> 4955
<211> 40
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<213> 人類(Homo sapiens)

<400> 4955
aactcttctc tcatgtcatc gacaatggca gctttctccg 40

<210> 4956
<211> 40
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<400> 4956
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<210> 4957
<211> 40
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<400> 4957
gcgtccagaa tctccacctc gatgtcccct cagaacaaag 40

<210> 4958
<211> 40
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<400> 4958
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<210> 4959
<211> 40
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<400> 4959
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<210> 4960
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<400> 4960
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<210> 4961
<211> 40
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<400> 4961
agcaactggt tttagttttc gaacctctca gcttgctcct 40

<210> 4962
<211> 40
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<400> 4962
tgcaagttat tgcatgtgtc gacaatggca gctttctccg 40

<210> 4963
<211> 40
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<400> 4963
gcagattatt ttggaacatc gacaatggca gctttctccg 40

<210> 4964
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<400> 4964
agtcctgctt cttttgcctc gattagacct gttgcttcat 40

<210> 4965

<211> 40
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<400> 4965
caccatgaaa atataagatc gagttctctc ccatgttcca 40

<210> 4966
<211> 40
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<400> 4966
ctattcggcc tactaaactc gacaatggca gctttctccg 40

<210> 4967
<211> 40
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<400> 4967
gcctttaacc atggctattc gatgctcagg acggatgcag 40

<210> 4968
<211> 40
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<213> 人類(Homo sapiens)

<400> 4968
aaatgcaacc aaaatgcatc gacaatggca gctttctccg 40

<210> 4969
<211> 40
<212> DNA
<213> 人類(Homo sapiens)

<400> 4969
aaaatcttct cttaatactc gagtttcttc tgctcctctt 40

<210> 4970
<211> 40
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<400> 4970

gaaagctttg tgtattcatc gagttctctc ccatgttcca 40

<210> 4971
<211> 40
<212> DNA
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<400> 4971
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<210> 4972
<211> 60
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<400> 4972
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<210> 4973
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 4973
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<210> 4974
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<400> 4974
gaagtccaac accgtgatgc aggattcatc gaatttaggc accaaactat actagtcatc 60

<210> 4975
<211> 60
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<213> 人類(Homo sapiens)

<400> 4975
cagtcagata gtgaggactc aacagatatc gattgttaca aaattcctcc taaaaatttc 60

<210> 4976
<211> 60

<212> DNA
<213> 人類(Homo sapiens)

<400> 4976
tgatgcagtt acagaaaagt tggtgacatc gaattaccag cacctgttca tgagctgcca 60

<210> 4977
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<213> 人類(Homo sapiens)

<400> 4977
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<210> 4978
<211> 60
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<213> 人類(Homo sapiens)

<400> 4978
gttaccctag ccacttcaca aaatatgttc gaaaaaaata aaatatatga atgctggatc 60

<210> 4979
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<213> 人類(Homo sapiens)

<400> 4979
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<210> 4980
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<213> 人類(Homo sapiens)

<400> 4980
gccagaaaat cgtaccattt cctttccttc gaagagatag ttcacaatgg atgacacagc 60

<210> 4981
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 4981
gaatggggta tgaatcatgc aactggcttc gaagtataat agtaagctac agaataattt 60

<210> 4982
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 4982
gtgctagccc tgcttaaatg cacggaaatc gagaacagga tcagtttaag atgagatagc 60

<210> 4983
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<212> DNA
<213> 人類(Homo sapiens)

<400> 4983
gccagaaaat cgtaccattt cctttccttc gatgtatcta ttatatctat gtatctatat 60

<210> 4984
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<213> 人類(Homo sapiens)

<400> 4984
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<210> 4985
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<213> 人類(Homo sapiens)

<400> 4985
ataaatgttt cagtataagc agtaggactc gatgttgcca aaaacaaaag aaaaacccca 60

<210> 4986
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<212> DNA
<213> 人類(Homo sapiens)

<400> 4986
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<210> 4987
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<213> 人類(Homo sapiens)

<400> 4987
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<210> 4988
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<213> 人類(Homo sapiens)

<400> 4988
aattctcaag ctcaaagtgc tcgcagattc gaatgcctac tactactagg accacgcagg 60

<210> 4989
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<213> 人類(Homo sapiens)

<400> 4989
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<210> 4990
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 4990
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<210> 4991
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 4991
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<210> 4992
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 4992
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<210> 4993
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<213> 人類(Homo sapiens)

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<210> 4994
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<213> 人類(Homo sapiens)

<400> 4994
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<210> 4995
<211> 60
<212> DNA
<213> 人類(Homo sapiens)

<400> 4995
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<210> 4996
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<210> 5031
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<210> 5114
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<210> 5126
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