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美國

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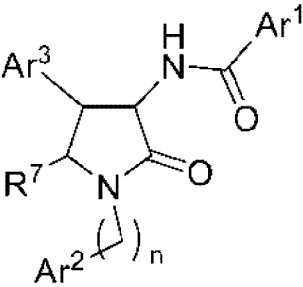
申請實體審查：無 申請專利範圍項數：17 項 圖式數：0 共 446 頁

(54)名稱

氧代吡咯啉 FPR2 促效劑

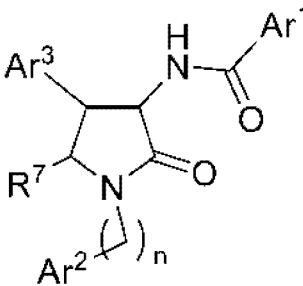
(57)摘要

本揭示係關於式(I)化合物，其係甲醯基肽 2 (FPR2)受體促效劑及/或甲醯基肽 1 (FPR1)受體促效劑。本揭示亦提供使用該等化合物之組合物及方法，例如用於治療動脈粥樣硬化、心臟衰竭、慢性阻塞性肺病(COPD)及相關疾病。



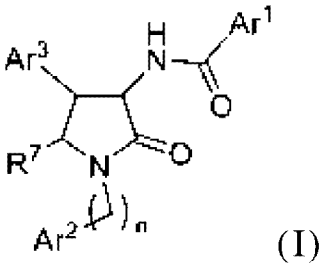
(I)

The disclosure relates to compounds of Formula (I), which are formyl peptide 2 (FPR2) receptor agonists and/or formyl peptide 1 (FPR1) receptor agonists. The disclosure also provides compositions and methods of using the compounds, for example, for the treatment of atherosclerosis, heart failure, chronic obstructive pulmonary disease (COPD), and related diseases.



(I)

特徵化學式：



(I)

【發明摘要】

【中文發明名稱】

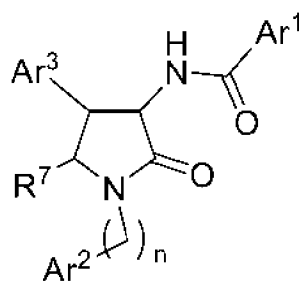
氧代吡咯啉FPR2促效劑

【英文發明名稱】

OXOPYRROLIDINE FPR2 AGONISTS

【中文】

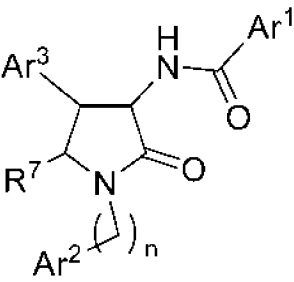
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(I)

【英文】

The disclosure relates to compounds of Formula (I), which are formyl peptide 2 (FPR2) receptor agonists and/or formyl peptide 1 (FPR1) receptor agonists. The disclosure also provides compositions and methods of using the compounds, for example, for the treatment of atherosclerosis, heart failure, chronic obstructive pulmonary disease (COPD), and related diseases.



(I)

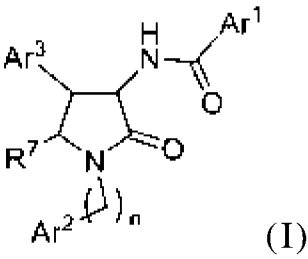
【指定代表圖】

無

【代表圖之符號簡單說明】

無

【特徵化學式】



(I)

【發明說明書】

【中文發明名稱】

氧代吡咯啉FPR2促效劑

【英文發明名稱】

OXOPYRROLIDINE FPR2 AGONISTS

【技術領域】

【0001】本發明係關於新穎氧代吡咯啉化合物，其係甲醯基肽2 (FPR2)受體促效劑及/或甲醯基肽1 (FPR1)受體促效劑；含有其之組合物；及使用其用於例如治療動脈粥樣硬化、心臟衰竭、慢性阻塞性肺病(COPD)及相關疾病之方法。

【先前技術】

【0002】甲醯基肽受體2 (FPR2)屬一小群七跨膜結構域之G蛋白偶合受體，其在多種人類組織(包括免疫細胞)中表現且已知在宿主防禦及發炎中甚為重要。FPR2與FPR1及FPR3共有顯著序列同源性(Journal of Autoimmunity 85, 2017, 64-77)。共同地，該等受體結合多種結構不同之促效劑，包括作為化學引誘劑且活化吞噬細胞之N-甲醯基及非甲醯基肽。內源性肽膜聯蛋白A1及其N末端片段係結合人類FPR1及FPR2之配體之實例。諸如類花生酸脂氧素A4等屬一類小的促消退介質(SPM)之脂肪酸亦已鑑別為FPR2之促效劑(Ye RD.等人，Pharmacol.Rev., 2009, 61, 119-61)。

【0003】已報導，內源性FPR2促消退配體(例如脂氧素A₄及膜聯蛋白A1)觸發各種各樣之細胞質級聯反應，例如Gi偶合、Ca²⁺動員及β-抑制蛋白募集。(Int J Mol Sci.2013年4月；14(4): 7193-7230)。FPR2調控先

天性及適應性免疫系統二者，包括嗜中性球、巨噬細胞、T細胞及B細胞。在嗜中性球中，FPR2配體調節運動、細胞毒性及壽命。在巨噬細胞中，FPR2之促效作用阻止細胞凋亡並增強胞葬作用。(Chandrasekharan JA, Sharma-Walia N, J. Inflamm. Res., 2015, 8, 181-92)。藉由FPR2促效作用起始發炎消退導致增強抗纖維變性傷口癒合且使受傷組織恢復至穩態(Romano M.等人，Eur. J. Pharmacol., 2015, 5, 49-63)。

【0004】慢性發炎係許多人類疾病之發病路徑之一部分，且利用FPR2促效劑刺激消退路徑可具有保護及修復效應二者。缺血再灌注(I/R)損傷係與高發病率及死亡率相關之若干疾病(例如心肌梗塞及中風)之共同特徵。與源自缺血再灌注損傷之心肌細胞死亡及病理性重塑相關之非生產性傷口癒合導致瘢痕形成、纖維化及心臟功能之逐漸喪失。提出FPR2調節以增強損傷後之心肌傷口癒合且減少不良心肌重塑(Kain V.等人，J. Mol. Cell. Cardiol., 2015, 84, 24-35)。另外，在中樞神經系統中，FPR2促消退促效劑可係用於治療多種臨床I/R病狀之有用治療劑，包括腦中風(Gavins FN., Trends Pharmacol.Sci., 2010, 31, 266-76)及I/R誘發之脊髓損傷(Liu ZQ.等人，Int. J. Clin. Exp. Med., 2015, 8, 12826-33)。

【0005】除利用新穎促消退促效劑靶向FPR2受體用於治療I/R誘發之損傷之有益效應以外，該等配體之治療效用亦可應用於其他疾病。在心血管系統中，發現FPR2受體及其促消退促效劑二者導致動脈粥樣硬化斑塊穩定及癒合(Petri MH.等人，Cardiovasc.Res., 2015, 105, 65-74；及Fredman G.等人，Sci. Trans. Med., 2015, 7(275);275ra20)。亦已顯示FPR2促效劑在慢性人類發炎性疾病之臨床前模型中係有益的，該等疾病包括：傳染病、牛皮癬、皮膚炎、發炎性腸症候群、克隆氏病(Crohn's

disease)、眼部發炎、敗血症、疼痛、代謝性疾病/糖尿病、癌症、COPD、氣喘及過敏性疾病、囊性纖維化、急性肺損傷及纖維化、類風濕性關節炎及其他關節疾病、阿茲海默氏病(Alzheimer's disease)、腎纖維化及器官移植(Romano M.等人, Eur. J. Pharmacol., 2015, 5, 49-63, Perrett, M.等人, Trends in Pharm.Sci., 2015, 36, 737-755)。

【發明內容】

【0006】 本發明提供可用作FPR2促效劑之新穎氧代吡咯啉及其類似物，包括其立體異構物、互變異構物、醫藥上可接受之鹽或溶劑合物。

【0007】 本發明亦提供用於製備本發明化合物或其立體異構物、互變異構物、醫藥上可接受之鹽或溶劑合物之製程及中間體。

【0008】 本發明亦提供醫藥組合物，其包含醫藥上可接受之載劑及本發明化合物或其立體異構物、互變異構物、醫藥上可接受之鹽或溶劑合物中之至少一者。

【0009】 本發明之化合物可用於療法中。

【0010】 本發明之化合物可用於治療及/或預防與FPR2相關之多種疾病或病症，例如發炎性疾病、心臟疾病、慢性呼吸道疾病、癌症、敗血症、過敏症狀、HIV反轉錄病毒感染、循環病症、神經發炎、神經病症、疼痛、普里昂疾病(prion diseases)、類澱粉變性及免疫病症。心臟疾病係選自由以下組成之群：心絞痛、不穩定性心絞痛、心肌梗塞、急性冠狀動脈疾病、心臟醫源性損害及心臟衰竭，包括(但不限於)急性心臟衰竭、缺血性及非缺血性起源之慢性心臟衰竭、收縮期心臟衰竭、舒張期心臟衰竭、射出分率降低型心臟衰竭(HF_REF)及射出分率保留型心臟衰竭(HF_PEF)。

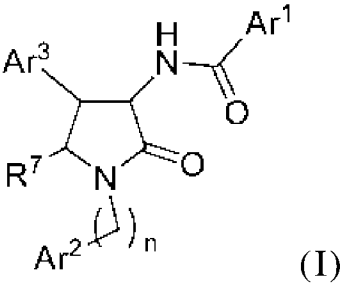
【0011】本發明之化合物可單獨使用、與本發明之其他化合物組合使用或與一或多種其他藥劑組合使用。

【0012】自以下詳細說明及申請專利範圍將明瞭本發明之其他特徵及優點。

【實施方式】

【0013】本發明涵蓋式(I)至(VII)之化合物，其係甲醯基肽2 (FPR2) 受體促效劑及/或甲醯基肽1 (FPR1)受體促效劑；含有其之組合物；及使用其例如治療動脈粥樣硬化、心臟衰竭、慢性阻塞性肺病(COPD)及相關疾病之方法。

【0014】本發明之一態樣係式(I)化合物：



或其醫藥上可接受之鹽，其中：

Ar¹係芳基或吡啶基，其各自經1至3個R¹取代；

Ar²係C₃₋₆環烷基、芳基或包含1至4個選自O、S(O)_p、N及NR^{2a}之雜原子之5員至12員雜環基，且其各自經0至3個R²取代；

Ar³係苯基或吡啶基，其各自經1個R^{5a}、1個R^{5b}及1個R^{5c}取代；

R¹係鹵基、C₁₋₄鹵烷基、C₁₋₄烷氧基或C₁₋₄鹵烷氧基；

R²係側氧基、氰基、鹵基、經0至5個R^e取代之C₁₋₆烷基、-OR^b、-NR³R⁴、-NR⁴C(O)R^b、-NR⁴(CR^dR^d)₀₋₁C(O)NR³R⁴、(C₁₋₄烷基)₂(O)P-、C₃₋₆環烷基、芳基、包含1至4個選自O、S(O)_p、N及NR^a之雜原子之5員至6員雜環基；

R^{2a} 係氫、經 0 至 5 個 R^e 取代之 C_{1-4} 烷基、 $-(CR^dR^d)_{1-4}-NR^3R^4$ 、 $-(CR^dR^d)_{1-4}-OR^b$ 、 $-(CR^dR^d)_{1-4}-C(O)NR^3R^4$ 、經 0 至 5 個 R^e 取代之 $-(CR^dR^d)_r-$ C_{3-6} 環烷基、經 0 至 5 個 R^e 取代之 $-(CR^dR^d)_r-$ 芳基或包含 1 至 4 個選自 O、 $S(O)_p$ 、N 及 NR^a 之雜原子且經 0 至 5 個 R^e 取代之 $-(CR^dR^d)_r-$ 雜環基；

R^3 係氫、經 0 至 5 個 R^e 取代之 C_{1-4} 烷基、經 0 至 5 個 R^e 取代之 C_{3-6} 環烷基或包含 1 至 4 個選自 O、 $S(O)_p$ 、N 及 NR^8 之雜原子且經 0 至 5 個 R^e 取代之雜環基；

R^4 係氫或 C_{1-4} 烷基；

或者， R^3 及 R^4 與二者連接之氮一起形成包含 1 至 4 個選自 O、 $S(O)_p$ 、N 及 NR^8 之雜原子且經 1 至 3 個 R^6 取代之 4 員至 9 員雜環基；

R^{5a} 係氫或鹵基；

R^{5b} 係氫或鹵基；

R^{5c} 係鹵基、 C_{1-4} 烷基、 C_{1-4} 鹵烷基、 C_{1-4} 烷氧基或氘代烷氧基；

R^6 係氫、鹵基、側氧基、羥基或經 0 至 5 個 R^e 取代之 C_{1-4} 烷基；

R^7 係氫或 C_{1-4} 烷基；

R^8 係氫、 C_{1-4} 烷基或 $-S(O)_pR^c$ ；

R^a 係氫或經 0 至 5 個 R^e 取代之 C_{1-6} 烷基、經 0 至 5 個 R^e 取代之 C_{3-6} 環烷基、經 0 至 5 個 R^e 取代之芳基或包含 1 至 4 個選自 O、 $S(O)_p$ 、 NR^d 之雜原子且經 0 至 5 個 R^e 取代之雜環基；

R^b 係氫、經 0 至 5 個 R^e 取代之 C_{1-6} 烷基、經 0 至 5 個 R^e 取代之 C_{3-6} 環烷基、經 0 至 5 個 R^e 取代之芳基或包含 1 至 4 個選自 O、 $S(O)_p$ 、 NR^d 之雜原子且經 0 至 5 個 R^e 取代之雜環基；

R^c 係經 0 至 5 個 R^e 取代之 C_{1-4} 烷基；

R^d 係氫或經0至5個 R^e 取代之 C_{1-4} 烷基；

R^e 係鹵基、氰基、側氧基、 $-OR^g$ 、 $-NR^gR^g$ 、 $-C(O)NR^gR^g$ 、 $-S(O)_pC_{1-4}$ 烷基、經0至5個 R^f 取代之 C_{1-6} 烷基、經0至5個 R^f 取代之 $-(CH_2)_r-$ C_{3-6} 環烷基、經0至5個 R^f 取代之 $-(CH_2)_r-$ 芳基或包含1至4個選自O、 $S(O)_p$ 、N及 NR^g 之雜原子且經0至5個 R^f 取代之 $-(CH_2)_r-$ 雜環基；

R^f 係鹵基、氰基、羥基、側氧基、 C_{1-5} 烷基、 C_{3-6} 環烷基或苯基；

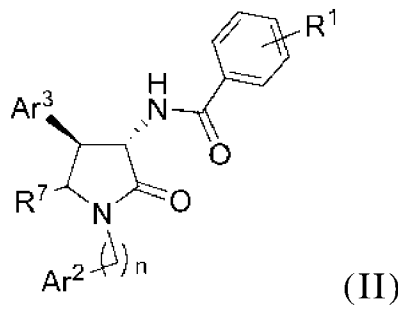
R^g 係氫、 C_{1-5} 烷基、 C_{3-6} 環烷基、芳基或雜環基；或 R^g 及 R^g 與二者連接之氮原子一起形成雜環基；

n 係0或1；

p 係0、1或2；且

r 係0、1、2、3或4。

【0015】本發明之另一態樣係式(II)化合物：



或其醫藥上可接受之鹽，其中：

Ar^2 係 C_{3-6} 環烷基、苯基、包含1至2個N或 NR^{2a} 之5員至6員雜環基，其各自經0至2個 R^2 取代；

Ar^3 係經1個 R^{5a} 、1個 R^{5b} 及1個 R^{5c} 取代之苯基；

R^1 係鹵基、 C_{1-4} 鹵烷基或 C_{1-4} 鹵烷氧基；

R^2 係側氧基、氰基、鹵基、經0至5個 R^e 取代之 C_{1-5} 烷基、 $-OR^b$ 、 $-NR^3R^4$ 、 $-NR^4C(O)R^b$ 、 $(C_{1-3}烷基)_2(O)P-$ 、 C_{3-6} 環烷基、芳基、包含1至4

個選自O、S、N及NR^a之雜原子之5員至6員雜環基；

R^{2a}係氫、經0至4個R^e取代之C₁₋₄烷基、-(CHR^d)₁₋₃-C(O)NR³R⁴、經0至4個R^e取代之-(CHR^d)_r-C₃₋₆環烷基、經0至4個R^e取代之-(CHR^d)_r-芳基或包含1至4個選自O、S、N及NR^a之雜原子且經0至4個R^e取代之-(CHR^d)_r-雜環基；

R³係氫、經0至4個R^e取代之C₁₋₄烷基、C₃₋₆環烷基或包含1至4個選自O、S、N及NR⁸之雜原子且經0至4個R^e取代之雜環基；

R⁴係氫或C₁₋₃烷基；

或者，R³及R⁴與二者連接之氮一起形成包含1至4個選自O、S、N及NR⁸之雜原子且經1至3個R⁶取代之4員至8員雜環基；

R^{5a}係氫或鹵基；

R^{5b}係氫或鹵基；

R^{5c}係鹵基、C₁₋₄烷基、C₁₋₄鹵烷基或C₁₋₄烷氧基；

R⁶係氫、鹵基、側氧基、羥基或經0至4個R^e取代之C₁₋₄烷基；

R⁷係氫或C₁₋₃烷基；

R⁸係氫、C₁₋₃烷基或-S(O)_pR^c；

R^a係氫或經0至5個R^e取代之C₁₋₆烷基；

R^b係氫、經0至5個R^e取代之C₁₋₆烷基或包含1至4個選自O、S、N、NR^d之雜原子且經0至5個R^e取代之雜環基；

R^c係經0至5個R^e取代之C₁₋₃烷基；

R^d係氫或經0至1個-OC₁₋₄烷基取代之C₁₋₄烷基；

R^e係鹵基、氰基、側氧基、-OR^g、-NR^gR^g、-C(O)NR^gR^g、-S(O)_pC₁₋₄烷基、經0至5個R^f取代之C₁₋₄烷基、經0至5個R^f取代之-(CH₂)_r-

含1至4個選自O、S、N及NR^a之雜原子且經0至3個R^e取代之-(CH₂)_r-雜環基；

R³係氫、經0至3個R^e取代之C₁₋₄烷基、C₃₋₆環烷基或包含1至4個選自O、S、N及NR⁸之雜原子且經0至3個R^e取代之雜環基；

R⁴係氫或C₁₋₂烷基；

或者，R³及R⁴與二者連接之氮一起形成包含1至3個選自O、S、N及NR⁸之雜原子且經1至3個R⁶取代之4員至8員雜環基；

R^{5a}係氫或鹵基；

R^{5b}係氫或鹵基；

R^{5c}係鹵基或C₁₋₂烷氧基；

R⁶係氫、鹵基、側氧基、羥基或經0至3個R^e取代之C₁₋₄烷基；

R⁷係氫或CH₃；

R⁸係氫、C₁₋₂烷基或S(O)₂C₁₋₄烷基；

R^a係氫或經0至4個R^e取代之C₁₋₅烷基；

R^b係氫、經0至4個R^e取代之C₁₋₅烷基、包含1至4個選自O、S、N、NR^d之雜原子且經0至4個R^e取代之雜環基；

R^d係氫或經0至1個-OC₁₋₄烷基取代之C₁₋₂烷基；

R^e係鹵基、氰基、側氧基、-OR^g、-NR^gR^g、C(O)NR^gR^g、-S(O)_pC₁₋₄烷基、經0至4個R^f取代之C₁₋₄烷基、經0至4個R^f取代之-(CH₂)_r-C₃₋₆環烷基、經0至4個R^f取代之-(CH₂)_r-芳基或包含1至4個選自O、S、N及NR^g之雜原子且經0至4個R^f取代之-(CH₂)_r-雜環基；

R^f係鹵基、氰基、羥基或C₁₋₅烷基；

R^g係氫或C₁₋₄烷基；且

R^{5a} 係氫、F或Cl；

R^{5b} 係氫、F或Cl；

R^{5c} 係Cl或 $-OCH_3$ ；

R^6 係氫、鹵基、側氧基、羥基或經0至3個 R^e 取代之 C_{1-3} 烷基；

R^8 係氫、 C_{1-2} 烷基或 $S(O)_2C_{1-3}$ 烷基；

R^a 係氫、經0至3個 R^e 取代之 C_{1-4} 烷基；

R^b 係氫、經0至3個 R^e 取代之 C_{1-4} 烷基、包含1至4個選自O、S、N及NR^d之雜原子且經0至3個 R^e 取代之雜環基；

R^d 係氫或經0至1個 $-OC_{1-4}$ 烷基取代之 C_{1-2} 烷基；

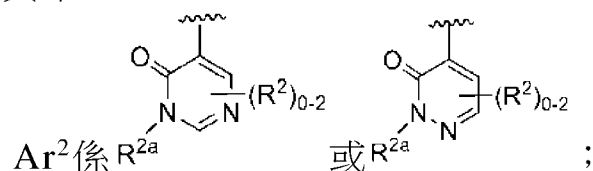
R^e 係鹵基、氰基、側氧基、 $-OR^g$ 、 $-NR^gR^g$ 、 $-C(O)NR^gR^g$ 、 $-S(O)_2C_{1-4}$ 烷基、經0至3個 R^f 取代之 C_{1-6} 烷基、經0至3個 R^f 取代之 $-(CH_2)_r-$ C_{3-6} 環烷基或包含1至4個選自O、S、N及NR^g之雜原子且經0至3個 R^f 取代之 $-(CH_2)_r-$ 雜環基；

R^f 係鹵基、氰基、羥基或 C_{1-4} 烷基；

R^g 係氫或 C_{1-3} 烷基；且

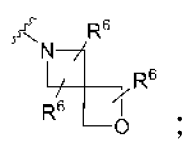
r係0或1。

【0018】本發明之另一態樣係式(IVa)化合物或其醫藥上可接受之鹽，其中：



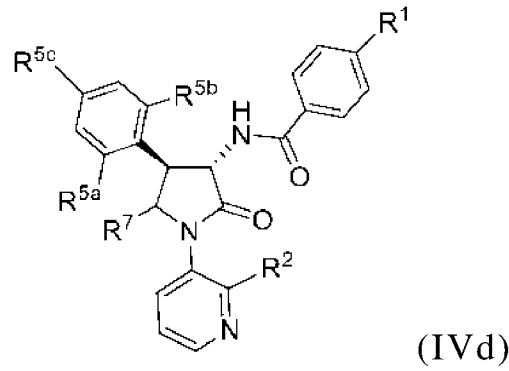
R^2 係F、Cl、 $-CH_2OH$ 、 $-CH_3$ 、 $-CF_3$ 或 $-CHF_2$ ；且

R^{2a} 係 $-CH_3$ 、 $-CH_2CH_3$ 、 $-CH_2CHF_2$ 、 $-CH_2CF_3$ 、 $-CH_2CH_2OCH_3$ 、 $-CH_2CH(OH)CF_3$ 、 $-CH_2CH(OH)CH_3$ 、 $-CH_2CH_2OH$ 、 $-CH_2CH(CH_3)OH$ 、

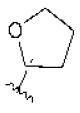


- R^{5a} 係氫或F；
- R^{5b} 係氫或F；
- R^{5c} 係Cl或OCH₃
- R^6 係氫、鹵基、側氧基、CH₃、-CH₂CH₃或-CH₂OH；且
- R^8 係氫、C₁₋₄烷基或-S(O)₂C₁₋₃烷基。

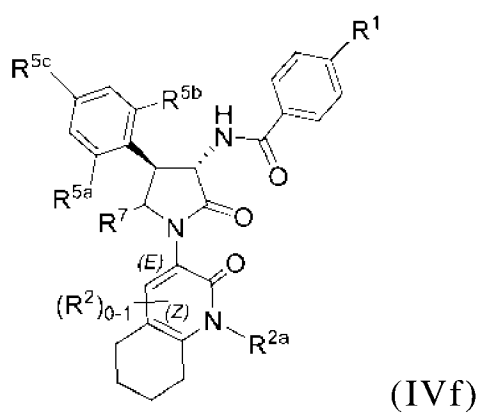
【0021】本發明之另一態樣係式(IVd)化合物：



- 或其醫藥上可接受之鹽，其中：
- R^1 係Cl、-CF₃、-OCHF₂或-OCF₃；
 - R^2 係-OR^b或(C₁₋₂烷基)₂(O)P-；
 - R^{5a} 係氫或F；
 - R^{5b} 係氫或F；
 - R^{5c} 係Cl或-OCH₃；

- R^b 係氫、經0至3個R^e取代之C₁₋₄烷基或 ；
- R^e 係F、Cl或-OR^g；且
- R^g 係氫或C₁₋₃烷基。

【0022】本發明之另一態樣係式(IVe)化合物：



或其醫藥上可接受之鹽，其中：

R¹係Cl、-CF₃、-OCH₃、-OCHF₂或-OCF₃；

R²係氰基、F、Cl、-CH₂OH、-CH₃、-CHF₂或-CF₃；

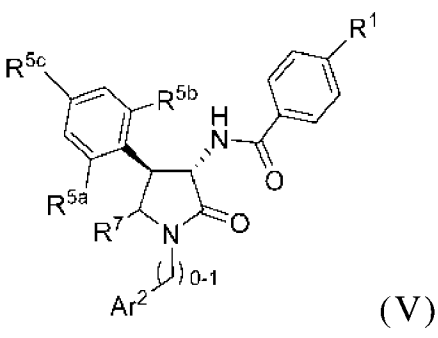
R^{2a} 係 -CH₃ 、 -CH₂CH₃ 、 -CH₂CHF₂ 、 -CH₂CH₂OCH₃ 、 -CH₂CH(OH)CF₃、-CH₂CH(OH)CH₃、-CH₂CH₂OH、-CH₂CH(CH₃)OH或-CH₂CH₂CF₃；

R^{5a}係氫、F或Cl；

R^{5b}係氫、F或Cl；且

R^{5c}係Cl或-OCH₃。

【0024】本發明之另一態樣係式(V)化合物：



或其醫藥上可接受之鹽，其中：

Ar²係C₃₋₅環烷基；

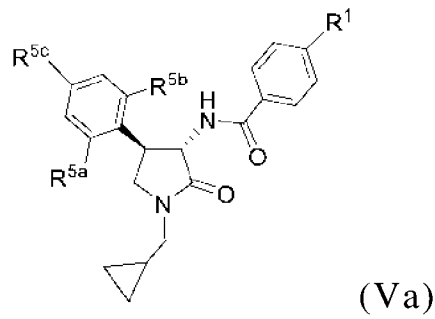
R¹係Cl、-CF₃、-OCHF₂或-OCF₃；

R^{5a}係F或Cl；

R^{5b} 係F或Cl；且

R^{5c} 係-OCH₃。

【0025】本發明之另一態樣係式(Va)化合物：



或其醫藥上可接受之鹽，其中：

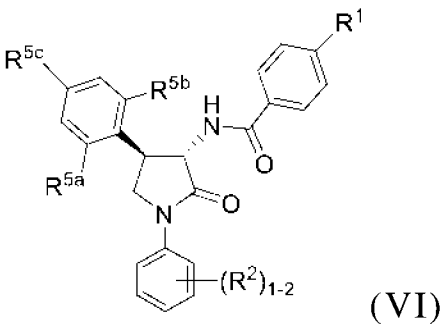
R^1 係CF₃、OCHF₂或OCF₃；

R^{5a} 係F或Cl；

R^{5b} 係F或Cl；且

R^{5c} 係OCH₃。

【0026】本發明之另一態樣係式(VI)化合物：



或其醫藥上可接受之鹽，其中：

R^1 係-CF₃、-OCHF₂或-OCF₃；

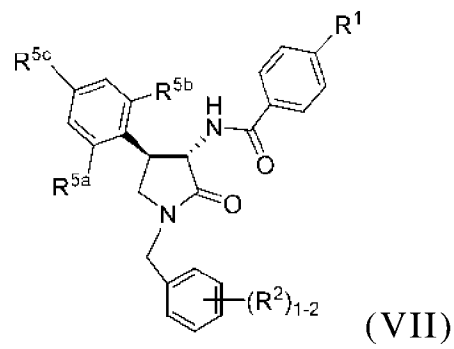
R^2 係 F、Cl、-CH₂OH、-CF₃、-CHF₂、-OCH₃、-OCH(CH₃)₂ 或 (CH₃)₂(O)P-；

R^{5a} 係F或Cl；

R^{5b} 係F或Cl；且

R^{5c}係-OCH₃。

【0027】本發明之另一態樣係式(VII)化合物：



或其醫藥上可接受之鹽，其中：

R¹係-CF₃、-OCHF₂或-OCF₃；

R²係F、Cl或(CH₃)₂(O)P-；

R^{5a}係F；

R^{5b}係F；且

R^{5c}係-OCH₃。

【0028】對於式(I)、(II)、(III)、(IVa)、(IVb)、(IVc)、(IVd)、(IVe)、(IVf)、(V)、(Va)、(VI)或(VII) (即(I-VII))之化合物，可變取代基(包括Ar¹、Ar²、Ar³、R¹、R²、R^{2a}、R³、R⁴、R^{5a}、R^{5b}、R^{5c}、R⁶、R⁷、R⁸、R^a、R^b、R^c、R^d、R^e、R^f及R^g)之任何情況之範圍可獨立於可變取代基之任何其他情況之範圍使用。因此，本發明包括不同態樣之組合。

【0029】在一個非限制性實施例中，對於式(I)、(II)或(III)之化合物，Ar¹係經1個R¹取代之苯基；R¹係CF₃、OCHF₂或OCF₃；n係0或1；Ar²係苯基、吡啶基或C₃₋₆環烷基，其各自經0至2個R²取代；R²係F、Cl、CH₂OH、CF₃、OCH₃、OCH(CH₃)₂、CHF₂、CF₃或(CH₃)₂(O)P；Ar³係經R^{5a}、R^{5b}及R^{5c}取代之苯基；R^{5a}、R^{5b}及R^{5c}個別地係鹵基及烷氧基。

【0030】在一個非限制性實施例中，對於式(I)、(II)或(III)之化合

物， Ar^1 係經1個 R^1 取代之苯基； R^1 係 CF_3 ； n 係0； Ar^2 係苯基、吡啶基或 C_{3-6} 環烷基，其各自經0至2個 R^2 取代； R^2 係F、Cl、 CH_2OH 、 CF_3 、 OCH_3 、 $OCH(CH_3)_2$ 、 CHF_2 、 CF_3 或 $(CH_3)_2(O)P$ ； Ar^3 係經 R^{5a} 、 R^{5b} 及 R^{5c} 取代之苯基； R^{5a} 、 R^{5b} 及 R^{5c} 個別地係鹵基及烷氧基。

【0031】在一個非限制性實施例中，對於式(I)、(II)或(III)之化合物， Ar^1 係經1個 R^1 取代之苯基； R^1 係 $OCHF_2$ ； n 係0； Ar^2 係苯基、吡啶基或 C_{3-6} 環烷基，其各自經0至2個 R^2 取代； R^2 係F、Cl、 CH_2OH 、 CF_3 、 OCH_3 、 $OCH(CH_3)_2$ 、 CHF_2 、 CF_3 或 $(CH_3)_2(O)P$ ； Ar^3 係經 R^{5a} 、 R^{5b} 及 R^{5c} 取代之苯基； R^{5a} 、 R^{5b} 及 R^{5c} 個別地係鹵基及烷氧基。

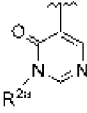
【0032】在一個非限制性實施例中，對於式(I)、(II)或(III)之化合物， Ar^1 係經1個 R^1 取代之苯基； R^1 係 OCF_3 ； n 係0； Ar^2 係苯基、吡啶基或 C_{3-6} 環烷基，其各自經0至2個 R^2 取代； R^2 係F、Cl、 CH_2OH 、 CF_3 、 OCH_3 、 $OCH(CH_3)_2$ 、 CHF_2 、 CF_3 或 $(CH_3)_2(O)P$ ； Ar^3 係經 R^{5a} 、 R^{5b} 及 R^{5c} 取代之苯基； R^{5a} 、 R^{5b} 及 R^{5c} 個別地係鹵基及烷氧基。

【0033】在一個非限制性實施例中，對於式(I)、(II)或(III)之化合物， Ar^1 係經1個 R^1 取代之苯基； R^1 係 CF_3 、 $OCHF_2$ 或 OCF_3 ； n 係1； Ar^2 係經0至2個 R^2 取代之苯基； R^2 係鹵基或烷氧基； Ar^3 係經 R^{5a} 、 R^{5b} 及 R^{5c} 取代之苯基； R^{5a} 、 R^{5b} 及 R^{5c} 個別地係鹵基及烷氧基。

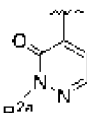
【0034】在一個非限制性實施例中，對於式(I)、(II)或(III)之化合物， Ar^1 係經1個 R^1 取代之苯基； R^1 係 CF_3 、 $OCHF_2$ 或 OCF_3 ； n 係1； Ar^2 係環丙基； Ar^3 係經 R^{5a} 、 R^{5b} 及 R^{5c} 取代之苯基； R^{5a} 、 R^{5b} 及 R^{5c} 個別地係鹵基及烷氧基。

【0035】在一個非限制性實施例中，對於式(I)、(II)、(III)或(IVa)

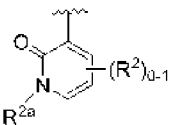
之化合物，Ar¹係經1個R¹取代之苯基；R¹係Cl、CF₃、OCHF₂或OCF₃；n

係0；Ar²係 ，R^{2a}係-CH₃、-CH₂CH₃、-CH₂CHF₂、-CH₂CF₃、-CH₂CH₂OCH₃、-CH₂CH(OH)CF₃、-CH₂CH(OH)CH₃、-CH₂CH₂OH、-CH₂CH(CH₃)OH、-CH₂CH(CF₃)OH或-CH₂CH₂CF₃；Ar³係經R^{5a}、R^{5b}及R^{5c}取代之苯基；R^{5a}、R^{5b}及R^{5c}個別地係鹵基及烷氧基。

【0036】在一個非限制性實施例中，對於式(I)、(II)、(III)或(IVa)之化合物，Ar¹係經1個R¹取代之苯基；R¹係Cl、CF₃、OCHF₂或OCF₃；n

係0；Ar²係 ，R^{2a}係-CH₃、-CH₂CH₃、-CH₂CHF₂、-CH₂CF₃、-CH₂CH₂OCH₃、-CH₂CH(OH)CF₃、-CH₂CH(OH)CH₃、-CH₂CH₂OH、-CH₂CH(CH₃)OH、-CH₂CH(CF₃)OH、-CH₂CH₂CF₃、-CH(CH₂OH)CH₂OCH₃、-CH(CH₂NH₂)OCH₃、-CH₂CH(CH₃)OCH₃或-CH₂CH(CF₃)OCH₃；Ar³係經R^{5a}、R^{5b}及R^{5c}取代之苯基；R^{5a}、R^{5b}及R^{5c}個別地係鹵基及烷氧基。

【0037】在一個非限制性實施例中，對於式(I)、(II)、(III)或(IVa)之化合物，Ar¹係經1個R¹取代之苯基；R¹係Cl、CF₃、OCHF₂或OCF₃；n

係0；Ar²係 ；R²係氰基、F、Cl、CH₃或-NHC(O)CH₃；R^{2a}係-CH₃、-CH₂CH₃、-CH₂CN、-CH₂CHF₂、-CH₂CH₂OCH₃、-CH₂CH(OH)CF₃、-CH₂CH(OH)CH₃、-CH₂CH₂OH、-CF₂CH₂OH、-CH₂CH(CH₃)OH、-CH₂CH₂CF₃、-CH(CH₂OH)CH₂OCH₃、-CH(CH₂NH₂)OCH₃、-CH₂CH(CH₃)OCH₃、-CH₂CH(CF₃)OCH₃、-CH(CH₂NH₂)CH₂OCH₃、-CH(C(O)N(CH₃)₂)CH₂OCH₃、-

【0046】在另一實施例中，本發明之化合物具有 $\leq 0.1 \mu\text{M}$ 之FPR2 EC₅₀值。

【0047】在另一實施例中，本發明之化合物具有 $\leq 0.05 \mu\text{M}$ 之FPR2 EC₅₀值。

【0048】在另一實施例中，本發明之化合物具有 $\leq 0.01 \mu\text{M}$ 之FPR2 EC₅₀值。

【0049】在另一實施例中，本發明之化合物具有 $\leq 0.001 \mu\text{M}$ 之FPR2 EC₅₀值。

【0050】除非另有指定，否則該等術語具有以下含義。術語「氰基」係指-CN。術語「羥基」係指-OH。不在兩個字母或符號之間的短劃線「-」用於指示取代基之連接點。舉例而言，-CONH₂係藉助碳原子連接。

【0051】根據此項技術中所使用之慣例，如本文結構式中所使用指向波形線之鍵(例如 )繪示作為部分或取代基與核心或主鏈結構之連接點之鍵。

【0052】「烷基」意指由1至6個碳構成之直鏈或具支鏈烴基。「烯基」意指由2至6個碳構成且具有至少一個雙鍵之直鏈或具支鏈烷基。「炔基」意指由2至6個碳構成且具有至少一個三鍵之直鏈或具支鏈烷基。具有烴部分之術語(例如烷氧基)包括烴部分之直鏈及具支鏈異構物。

【0053】「鹵基」包括氟、氯、溴及碘。「鹵烷基」及「鹵烷氧基」包括單鹵基至全鹵基之所有鹵異構物。

【0054】「鹵烷氧基」及派生詞(例如「C₁₋₆鹵烷氧基」)可互換使用，且係指藉助氧原子鏈接之經鹵基取代之烷基。鹵烷氧基包括單取代以

及多鹵基取代之烷氧基，最多全鹵基取代之烷氧基。舉例而言，包括三氟甲氧基及二氟甲氧基。

【0055】「烷氧基」意指經由氧鍵聯連接至分子之其餘部分之烷基。此等基團之代表性實例係-OCH₃及-OC₂H₅。除非陳述或列舉相反之情形，否則本文所闡述或主張之所有烷氧基可係直鏈或具支鏈的。

【0056】「烷氧基烷基」意指如上文所定義之烷氧基直接鍵結至如上文所定義之烷基，例如-CH₂-O-CH₃、-CH₂CH₂-O-CH₃及諸如此類。

【0057】「環烷基」係指具有3至12個碳原子之非芳香族單環或多環系統，例如環丙基、環丁基、環戊基、環己基及諸如此類。

【0058】「芳基」意指具有6至12個碳原子之單環或二環芳香族烴基，或其中一或兩個環為芳香族之二環稠合環系統。二環稠合環系統係由稠合至四至七員芳香族或非芳香族碳環之苯基組成。芳基之代表性實例包括(但不限於)苯基、二氫茛基、茛基、萘基及四氫萘基。

【0059】「雜環(heterocycle)」、「雜環基」或「雜環(heterocyclic ring)」意欲指穩定3員、4員、5員、6員或7員單環或二環或7員、8員、9員、10員、11員、12員、13員或14員多環雜環，該等飽和、部分不飽和或完全不飽和且含有碳原子及1、2、3或4個獨立地選自由N、O及S組成之群之雜原子；且包括其中任一上文所定義之雜環稠合至苯環之任何多環基團。氮及硫雜原子可視情況經氧化(即，N→O及S(O)_p，其中p係0、1或2)。氮原子可經取代或未經取代(即，N或NR，其中R係H或另一取代基(若定義))。雜環可在任一雜原子或碳原子處連接至其側基，從而得到穩定結構。若所得化合物穩定，則本文所闡述之雜環可在碳原子上或氮原子上經取代。雜環基中之氮可視情況經四級銨化。較佳地，當雜環基中S及

O原子之總數超過1時，則該等雜原子彼此不毗鄰。較佳地，雜環基中S及O原子之總數不大於1。當使用術語「雜環基」時，意欲包括雜芳基。

【0060】橋接環亦包括於雜環基之定義中。在一或多個原子(即，C、O、N或S)連接兩個非毗鄰碳原子或氮原子時，出現橋接環。橋接環之實例包括(但不限於)一個碳原子、兩個碳原子、一個氮原子、兩個氮原子及碳-氮基團。應注意，橋總是將單環轉化為三環。當環經橋接時，針對該環所列舉之取代基亦可存在於橋上。

【0061】「雜芳基」意指具有1至5個獨立地選自氮、氧及硫之雜原子之5員至7員單環或8員至11員二環芳香族環系統。

【0062】如熟習此項技術者所理解，在未指定鍵結連接位置之情形下，鍵結可在任一適當位置處連接。如熟習此項技術者所理解，取代基及鍵結模式之組合僅係產生穩定化合物之彼等組合。括號及多重括號術語意欲向熟習此項技術者闡明鍵結關係。舉例而言，諸如((R)烷基)等術語意指進一步經取代基R取代之烷基取代基。

【0063】本發明包括化合物之所有醫藥上可接受之鹽形式。醫藥上可接受之鹽係其中相對離子並不顯著有助於化合物之生理活性或毒性且由此用作藥理學等效物之彼等鹽。該等鹽可根據常見有機技術採用市售試劑製得。一些陰離子鹽形式包括乙酸鹽、醋硬脂酸鹽、苯磺酸鹽、溴化物、氯化物、檸檬酸鹽、富馬酸鹽、葡糖醛酸鹽、氫溴酸鹽、鹽酸鹽、氫碘酸鹽、碘化物、乳酸鹽、馬來酸鹽、甲磺酸鹽、硝酸鹽、雙羥萘酸鹽、磷酸鹽、琥珀酸鹽、硫酸鹽、酒石酸鹽、甲苯磺酸鹽及昔萘酸鹽(xinofate)。一些陽離子鹽形式包括銨鹽、鋁鹽、苺星(benzathine)鹽、鉍鹽、鈣鹽、膽鹼鹽、二乙胺鹽、二乙醇胺鹽、鋰鹽、鎂鹽、葡甲胺鹽、4-苯基環己胺

鹽、六氫吡嗪鹽、鉀鹽、鈉鹽、胺基丁三醇鹽及鋅鹽。

【0064】一些本發明化合物以立體異構形式存在，包括下文具有有所指示碳之結構。本發明包括化合物之所有立體異構形式，包括鏡像異構物及非鏡像異構物。製備及分離立體異構物之方法為業內所已知。本發明包括化合物之所有互變異構形式。本發明包括阻轉異構物及旋轉異構物。

【0065】本發明意欲包括化合物中出現之原子之所有同位素。同位素包括具有相同原子序數但具有不同質量數之彼等原子。以一般實例但不限於，氫之同位素包括氕及氘。碳之同位素包括¹³C及¹⁴C。經同位素標記之本發明化合物通常可藉由熟習此項技術者已知之習用技術來製備，或可藉由類似於本文所述之彼等之製程使用適當經同位素標記之試劑代替原本採用之未經標記試劑來製備。此等化合物可具有多種潛在用途，例如作為測定生物學活性之標準品及試劑。在穩定同位素之情形下，此等化合物可具有有利地改良生物學、藥理學或藥物動力學性質之潛力。

【0066】

生物學方法

N-甲醯基肽受體(FPR)係促進發炎期間白血球反應之化學引誘劑受體家族。FPR屬於七跨膜G蛋白偶合受體超家族，且與抑制性G蛋白(Gi)相關。已在人類中鑑別出三個家族成員(FPR1、FPR2及FPR3)，且其主要發現於各種分佈之骨髓細胞中且亦已經報導在多個器官及組織中。在促效劑結合後，FPR使多個生理路徑活化，例如細胞內信號轉導、Ca²⁺動員及轉錄。該家族與多種配體相互作用，該等配體包括使促發炎及促消退(pro-resolution)下游反應二者活化之蛋白質、多肽及脂肪酸代謝物。使用FPR2及FPR1環狀單磷酸腺苷(cAMP)分析來量測本專利中化合物之活性。

【0067】FPR2 及 FPR1 環狀單磷酸腺苷 (cAMP) 分析。將毛喉素 (forskolin)(對於FPR2最終為5 μ M或對於FPR1最終為10 μ M)及IBMX (最終200 μ M)之混合物添加至預先點有測試化合物於DMSO中(1%最終)最終濃度在0.020 nM至100 μ M範圍內之384孔Proxiplate (Perkin-Elmer)。將過度表現人類FPR1或人類FPR2受體之中國倉鼠卵巢細胞(CHO)在補充有10% 合格 FBS 、 250 μ g/ml 吉歐黴素 (zeocin) 及 300 μ g/ml 潮黴素 (hygromycin) (Life Technologies)之F-12 (漢姆氏(Ham))培養基中培養。藉由添加於補充有0.1% BSA (Perkin-Elmer)之達爾伯克氏(Dulbecco) PBS (含有鈣及鎂) (Life Technologies)中之2,000個人類FPR2細胞/孔或4,000個人類FPR1細胞/孔來起始反應。將反應混合物在室溫培育30 min。使用HTRF HiRange cAMP分析試劑套組(Cisbio)，根據製造商之說明來測定細胞內cAMP之含量。在所供應之溶解緩衝液中分別製備穴狀化合物偶聯之抗cAMP之溶液及d2螢光團標記之cAMP之溶液。在反應完成時，利用等體積之d2-cAMP溶液及抗cAMP溶液溶解細胞。在1-h室溫培育後，使用Envision (Perkin-Elmer)在400 nm激發且在590 nm及665 nm雙重發射下量測時間解析螢光強度。校正曲線係利用濃度在1 μ M至0.1 pM範圍內之外部cAMP標準品藉由針對cAMP濃度繪製665 nm發射對590 nm發射之螢光強度比率來構建。然後根據cAMP含量對化合物濃度之圖表藉由擬合至4參數邏輯斯諦方程來測定化合物抑制cAMP產生之功效及活性。

【0068】下文所揭示之實例係在上文所述之FPR2及FPR1 cAMP分析中測試，且發現其具有FPR2及/或FPR1促效劑活性。下表1列示針對以下實例量測之在FPR2及FPR1 cAMP分析中之EC₅₀值。

表1

實例	hFPR2 cAMP2 EC ₅₀ (μM)	hFPR1 cAMP EC ₅₀ (μM)
1	0.028	4.2
2	0.022	0.086
3	0.029	1.7
4	0.0017	0.29
5	0.0029	0.014
6	0.0051	0.65
7	0.010	1.3
8	0.015	0.28
9	0.0067	4.4
10	0.050	0.29
11	0.031	0.086
12	0.091	>10
13	0.045	0.085
14	0.037	0.043
15	0.022	1.1
16	0.180	0.48
17	0.036	0.069
18	0.037	0.20
19	0.024	0.54
20	0.032	0.56
21	0.035	2.3
22	0.013	3.2
23	0.028	1.5
24	0.045	0.30
25	0.035	>10
26	0.035	0.027
27	0.027	0.57

實例	hFPR2 cAMP2 EC ₅₀ (μM)	hFPR1 cAMP EC ₅₀ (μM)
28	0.007	1.1
29	0.051	0.11
30	0.010	0.75
31	0.010	0.15
32	0.018	0.96
33	0.005	1.61
34	0.0038	0.30
35	0.0031	>10
36	0.0055	0.030
37	0.0089	0.016
38	0.0051	0.018
39	0.0005	0.072
40	0.0006	2.6
41	0.0006	0.11
42	0.0007	0.73
43	0.0008	>5
44	0.001	0.010
45	0.001	0.0043
46	0.001	0.002
47	0.0011	0.15
48	0.0011	0.94
49	0.0011	2.0
50	0.0012	1.7
51	0.0012	5.5
52	0.0013	0.027
53	0.0014	0.0023
54	0.0014	0.82
55	0.0014	0.0086

實例	hFPR2 cAMP2 EC ₅₀ (μM)	hFPR1 cAMP EC ₅₀ (μM)
56	0.0014	0.004
57	0.0014	0.000066
58	0.0015	0.0035
59	0.0015	0.0066
60	0.0016	0.0026
61	0.0016	0.034
62	0.0016	0.11
63	0.0017	0.016
64	0.0017	0.0072
65	0.0017	0.18
66	0.0018	0.049
67	0.0018	0.0044
68	0.0018	0.50
69	0.0019	0.0042
70	0.0019	>10
71	0.0019	0.29
72	0.0019	0.0057
73	0.0019	0.0032
74	0.0019	0.094
75	0.002	0.0028
76	0.002	0.28
77	0.002	0.17
78	0.002	0.0052
79	0.002	0.012
80	0.0021	0.13
81	0.0022	0.0027
82	0.0022	0.0053
83	0.0022	0.0076

實例	hFPR2 cAMP2 EC ₅₀ (μM)	hFPR1 cAMP EC ₅₀ (μM)
84	0.0023	0.12
85	0.0023	0.16
86	0.0023	0.0041
87	0.0023	0.75
88	0.0024	0.0079
89	0.0024	0.045
90	0.0025	0.0035
91	0.0026	0.016
92	0.0026	0.0036
93	0.0026	0.068
94	0.0027	0.095
95	0.0027	0.16
96	0.0027	0.046
97	0.0027	0.35
98	0.0027	0.043
99	0.0027	0.33
100	0.0027	0.022
101	0.0028	0.15
102	0.0028	0.0047
103	0.0028	0.0019
104	0.0029	0.12
105	0.0029	0.065
106	0.0029	0.87
107	0.0029	0.0057
108	0.0029	0.0004
109	0.0029	0.50
110	0.0029	0.020
111	0.003	1.1

實例	hFPR2 cAMP2 EC ₅₀ (μM)	hFPR1 cAMP EC ₅₀ (μM)
112	0.003	0.0028
113	0.003	0.016
114	0.003	0.0059
115	0.0031	0.0024
116	0.0031	0.034
117	0.0031	0.21
118	0.0031	0.0041
119	0.0031	0.067
120	0.0031	0.013
121	0.0031	0.0014
122	0.0032	1.08
123	0.0032	0.041
124	0.0033	0.047
125	0.0033	1.1
126	0.0033	2.3
127	0.0033	0.39
128	0.0033	0.0063
129	0.0033	0.38
130	0.0034	0.34
131	0.0034	0.0008
132	0.0034	0.0008
133	0.0034	0.012
134	0.0035	0.0016
135	0.0035	0.058
136	0.0035	0.0022
137	0.0035	0.19
138	0.0035	0.0017
139	0.0035	0.57

實例	hFPR2 cAMP2 EC ₅₀ (μM)	hFPR1 cAMP EC ₅₀ (μM)
140	0.0035	0.61
141	0.0036	0.029
142	0.0036	0.087
143	0.0036	0.053
144	0.0036	0.0231
145	0.0037	0.0082
146	0.0038	0.15
147	0.0038	0.0022
148	0.0038	0.019
149	0.0038	0.0001
150	0.0039	0.007
151	0.0039	0.0005
152	0.0039	0.46
153	0.004	0.0042
154	0.004	0.0033
155	0.004	0.0093
156	0.004	0.0013
157	0.004	0.10
158	0.0041	0.19
159	0.0041	0.074
160	0.0041	1.1
161	0.0041	0.0034
162	0.0041	0.0094
163	0.0042	1.2
164	0.0042	0.29
165	0.0042	0.0017
166	0.0043	2.3
167	0.0043	>10

實例	hFPR2 cAMP2 EC ₅₀ (μM)	hFPR1 cAMP EC ₅₀ (μM)
168	0.0043	1.6
169	0.0043	0.021
170	0.0044	0.0009
171	0.0044	2.4
172	0.0045	0.039
173	0.0045	0.012
174	0.0045	0.067
175	0.0046	0.0093
176	0.0046	0.0065
177	0.0046	0.015
178	0.0047	0.0001
179	0.0047	0.092
180	0.0047	>10
181	0.0048	0.99
182	0.0048	0.0018
183	0.0048	0.0006
184	0.0048	0.0098
185	0.0048	0.0007
186	0.0049	0.003
187	0.0049	0.038
188	0.0049	0.038
189	0.005	3.4
190	0.005	0.13
191	0.005	0.090
192	0.0051	0.0008
193	0.0051	0.57
194	0.0051	0.15
195	0.0052	0.0013

實例	hFPR2 cAMP2 EC ₅₀ (μM)	hFPR1 cAMP EC ₅₀ (μM)
196	0.0052	0.16
197	0.0052	0.0017
198	0.0052	0.013
199	0.0052	0.13
200	0.0052	0.29
201	0.0053	0.018
202	0.0053	0.062
203	0.0053	0.77
204	0.0053	0.52
205	0.0054	0.22
206	0.0054	0.024
207	0.0054	>5
208	0.0054	0.0014
209	0.0055	0.13
210	0.0055	0.19
211	0.0055	0.025
212	0.0056	0.10
213	0.0056	1.8
214	0.0056	2.4
215	0.0056	0.041
216	0.0057	0.27
217	0.0057	0.042
218	0.0057	0.14
219	0.0058	0.14
220	0.0058	0.99
221	0.006	0.050
222	0.006	1.4
223	0.0061	0.1

實例	hFPR2 cAMP2 EC ₅₀ (μM)	hFPR1 cAMP EC ₅₀ (μM)
224	0.0061	1.9
225	0.0062	0.63
226	0.0062	0.023
227	0.0062	0.24
228	0.0062	0.0012
229	0.0062	0.013
230	0.0062	0.088
231	0.0063	0.46
232	0.0063	0.0032
233	0.0063	>5
234	0.0063	1.1
235	0.0065	0.084
236	0.0065	0.030
237	0.0065	0.44
238	0.0066	1.5
239	0.0066	0.65
240	0.0066	0.13
241	0.0066	0.038
242	0.0067	0.11
243	0.0067	0.17
244	0.0068	0.95
245	0.0068	0.0011
246	0.0069	0.28
247	0.0069	0.25
248	0.0069	0.0007
249	0.0069	0.013
250	0.0069	4.8
251	0.007	>5

實例	hFPR2 cAMP2 EC ₅₀ (μM)	hFPR1 cAMP EC ₅₀ (μM)
252	0.007	0.044
253	0.007	0.011
254	0.007	0.052
255	0.007	0.052
256	0.0072	0.53
257	0.0073	0.0016
258	0.0074	0.083
259	0.0074	0.58
260	0.0075	0.0012
261	0.0075	0.94
262	0.0075	0.018
263	0.0075	1.3
264	0.0075	0.37
265	0.0076	0.0015
266	0.0076	0.41
267	0.0077	1.6
268	0.0077	0.14
269	0.0077	0.027
270	0.0078	0.18
271	0.0078	1.4
272	0.0078	0.014
273	0.0078	1.4
274	0.008	0.019
275	0.008	6.1
276	0.008	0.013
277	0.008	0.21
278	0.0081	0.34
279	0.0081	5.8

實例	hFPR2 cAMP2 EC ₅₀ (μM)	hFPR1 cAMP EC ₅₀ (μM)
280	0.0082	0.026
281	0.0082	0.56
282	0.0083	0.70
283	0.0084	0.019
284	0.0084	0.58
285	0.0029	0.22
286	0.0085	0.13
287	0.0086	4.6
288	0.0086	0.0008
289	0.0086	0.062
290	0.0086	1.8
291	0.0087	0.0066
292	0.0087	0.95
293	0.0087	0.044
294	0.0088	0.0091
295	0.0089	0.0006
296	0.009	0.44
297	0.009	0.0001
298	0.009	0.0085
299	0.0092	1.9
300	0.0093	0.36
301	0.0093	0.15
302	0.010	0.022
303	0.0096	0.39
304	0.0096	0.090
305	0.0096	1.3
306	0.0098	0.25
307	0.0099	0.0018

實例	hFPR2 cAMP2 EC ₅₀ (μM)	hFPR1 cAMP EC ₅₀ (μM)
308	0.0099	0.18
309	0.01	0.41
310	0.01	0.067
311	0.010	1.9
312	0.010	0.0005
313	0.010	5.4
314	0.010	0.0004
315	0.010	0.0096
316	0.010	0.095
317	0.010	0.0026
318	0.010	>10
319	0.010	0.20
320	0.010	0.044
321	0.010	0.57
322	0.01	0.097
323	0.011	0.75
324	0.011	0.13
325	0.011	0.0016
326	0.011	0.035
327	0.012	1.7
328	0.012	0.61
329	0.012	2.5
330	0.013	3.7
331	0.013	5.6
332	0.013	5.8
333	0.014	5.7
334	0.014	0.48
335	0.015	0.45

實例	hFPR2 cAMP2 EC ₅₀ (μM)	hFPR1 cAMP EC ₅₀ (μM)
336	0.017	0.06
337	0.017	4.3
338	0.018	1.8
339	0.023	0.0006
340	0.023	0.0011
341	0.023	4.1
342	0.032	0.83
343	0.033	0.12
344	0.046	2.0
345	0.089	0.0031
346	0.097	1.9
347	0.11	0.84
348	0.1107	1.4
349	0.57	5.5
350	0.0009	0.0006
351	0.008	0.005
352	0.0048	0.003
353	0.0042	0.017
354	0.0032	0.007
355	0.0045	0.004
356	0.0035	0.031
357	0.0031	0.012
358	0.0020	0.014
359	0.0045	0.006
360	0.0032	0.018
361	0.0017	0.003
362	0.0001	0.012
363	0.0008	0.003

實例	hFPR2 cAMP2 EC ₅₀ (μM)	hFPR1 cAMP EC ₅₀ (μM)
364	0.0023	0.001
365	0.0026	0.001
366	0.0030	0.003
367	0.0012	0.003
368	0.0017	0.086
369	0.0037	1.1
370	0.0037	1.4
371	0.0019	0.008
372	0.0028	0.017
373	0.0125	0.233
374	0.0041	0.014
375	0.0016	0.003
376	0.0004	0.004
377	0.0016	0.005
378	0.0046	3.8
379	0.0026	0.32
380	0.0018	0.003
381	0.0040	0.010
382	0.0052	0.002
383	0.0055	0.002
384	0.0019	0.001
385	0.0071	0.001
386	0.0024	0.001
387	0.0022	0.001
388	0.0046	0.002
389	<0.005	<0.005
390	0.0048	0.076
391	0.0055	0.036

實例	hFPR2 cAMP2 EC ₅₀ (μM)	hFPR1 cAMP EC ₅₀ (μM)
392	0.0149	0.005
393	0.0024	0.002
394	0.0019	0.011
395	0.0024	0.001
396	0.0095	0.039
397	0.0027	0.015
398	0.0072	0.011
399	0.0027	0.013
400	0.0029	0.000
401	0.0037	0.007
402	0.0028	0.003
403	0.0040	0.002
404	0.0059	0.003
405	0.0047	0.002
406	0.0029	0.009
407	0.0078	0.64
408	0.0035	0.009
409	0.0063	0.036
410	0.0117	3.3
411	0.0026	0.12
412	0.0076	0.093
413	0.0006	0.12
414	0.0047	0.019
415	0.0068	0.003
416	0.0017	0.001
417	0.0029	0.017
418	0.0027	0.004
419	0.0048	0.11

實例	hFPR2 cAMP2 EC ₅₀ (μM)	hFPR1 cAMP EC ₅₀ (μM)
420	0.0073	0.051
421	0.0033	0.015
422	0.0011	0.003
423	0.0047	1.1
424	0.0022	0.011
425	0.0079	0.001
426	0.0023	0.004
427	0.0044	0.002
428	0.0090	0.008
429	0.0015	0.000
430	0.0033	0.005
431	0.0034	0.008
432	0.0091	3.8
433	0.0018	0.001
434	0.0044	0.010
435	0.0028	0.004
436	<0.005	0.009
437	0.0010	0.001
438	0.0039	0.007
439	0.0055	0.007
440	0.0013	0.011
441	0.0052	0.003
442	0.0096	0.001
443	0.0051	0.002
444	0.0018	0.001
445	0.0042	0.62
446	<0.005	0.003
447	0.0047	2.8

實例	hFPR2 cAMP2 EC ₅₀ (μM)	hFPR1 cAMP EC ₅₀ (μM)
448	0.0080	0.009
449	0.0035	0.0002
450	0.0030	0.003
451	0.002	1.9
452	0.0096	0.004
453	0.0095	2.9
454	0.0044	0.017
455	0.0029	0.010
456	0.0028	0.001
457	0.0032	0.002
458	0.0012	0.0008
459	0.0009	0.0002
460	0.0014	0.001
461	0.0037	0.003
462	0.0006	1.4
463	0.0039	0.006
464	0.0016	0.004
465	0.0029	0.013
466	0.0030	0.004
467	0.0018	1.5
468	0.0021	0.018
469	0.0014	0.002
470	0.0019	0.008
471	0.0011	0.002
472	0.0012	0.0017
473	0.0018	0.002
474	0.0021	0.004
475	0.0020	0.020

實例	hFPR2 cAMP2 EC ₅₀ (μM)	hFPR1 cAMP EC ₅₀ (μM)
476	0.0017	0.014
477	0.0010	0.013
478	0.0059	0.001
479	0.0094	0.005
480	0.0057	0.3
481	0.0012	2.2
482	0.0025	0.001
483	0.0056	0.016
484	0.0030	0.42
485	0.0017	0.002
486	0.0043	0.036
487	0.0019	0.72
488	0.0026	0.79
489	0.0007	0.005
490	0.001	0.001
491	0.0018	>5
492	0.0087	>5
493	0.0022	0.27
494	0.0034	0.44
495	0.0016	0.86
496	0.0030	1.1
497	0.0012	0.72
498	0.0018	>5
499	0.029	0.060
500	0.0022	0.71
501	0.0016	2.5
502	0.0077	0.90
503	0.0043	3.5

實例	hFPR2 cAMP2 EC ₅₀ (μM)	hFPR1 cAMP EC ₅₀ (μM)
504	0.0022	3.3
505	0.10	3.4
506	0.0008	0.068
507	0.0023	0.15
508	0.0064	0.11
509	0.041	0.079
510	0.0035	0.29
511	0.066	0.39
512	0.0037	2.1
513	0.0024	1.5
514	0.0026	0.27
515	0.0021	2.2
516	0.0013	1.7
517	0.0028	1.8
518	0.0020	3.3
519	0.0031	0.48
520	0.0049	1.3
521	0.0090	0.33
522	0.0054	>5
523	0.0014	3.6
524	0.0008	1.4
525	0.0014	0.42
526	0.0011	2.3
527	0.0013	0.77
528	0.0002	0.60
529	0.0067	>5
530	0.0031	0.68
531	0.0016	3.2

實例	hFPR2 cAMP2 EC ₅₀ (μM)	hFPR1 cAMP EC ₅₀ (μM)
532	0.0023	0.63
533	0.0040	0.90
534	0.0034	>5
535	0.0010	0.20
536	0.0021	0.65
537	0.0099	0.035
538	0.0013	2.0
539	0.0068	0.47
540	0.0027	>5
541	0.020	0.81
542	0.0057	1.2
543	0.0069	1.9
544	0.034	1.7
545	0.0060	0.33
546	0.0021	1.8
547	0.0045	2.4
548	0.28	>5
549	0.0041	0.028
550	0.010	0.0035
551	0.0015	0.077
552	0.13	0.44
553	0.0007	1.2
554	0.0043	2.4
555	0.031	0.53
556	0.0022	2.0
557	0.0018	0.13
558	0.0064	2.0
559	0.0066	0.45

實例	hFPR2 cAMP2 EC ₅₀ (μM)	hFPR1 cAMP EC ₅₀ (μM)
560	0.0008	0.12
561	0.0043	0.17
562	0.0016	0.75
563	0.0023	0.0023
564	0.0036	0.0005
565	0.0082	0.72
566	0.0011	0.99
567	0.0096	>5
568	0.0028	0.44
569	0.0012	1.6
570	0.0012	1.5
571	0.0060	0.58
572	0.0035	1.6
573	0.0087	1.3
574	0.015	0.55
575	0.48	>5
576	0.0014	0.0015
577	0.0006	0.0002
578	0.0015	0.006
579	0.0058	0.0055
580	0.0036	0.74
581	0.0013	0.010
582	0.0047	0.55
583	0.0038	0.057
584	0.0218	0.66
585	0.0218	1.2
586	0.0098	1.3
587	0.0011	0.60

實例	hFPR2 cAMP2 EC ₅₀ (μM)	hFPR1 cAMP EC ₅₀ (μM)
588	0.0069	0.41
589	0.13	2.6
590	0.0019	1.6
591	0.0105	0.0085
592	0.0071	0.0062
593	0.0033	0.040
594	0.0024	0.0014
595	0.0024	0.013
596	0.0437	0.86
597	0.0015	0.21
598	0.0062	0.59
599	0.0041	0.040
600	0.0078	0.17
601	0.0020	0.17
602	0.0038	0.088
603	0.0039	0.056
604	0.0005	0.015
605	<0.005	0.0019
606	0.0200	0.053
607	0.0133	0.030
608	0.0041	0.0042
609	0.0018	0.028
610	0.0010	0.0003
611	0.0024	0.0059
612	0.0135	0.033
613	0.0118	0.0093
614	0.0060	0.033
615	0.0087	0.0053

實例	hFPR2 cAMP2 EC ₅₀ (μM)	hFPR1 cAMP EC ₅₀ (μM)
616	0.0094	0.020
617	0.0091	0.018
618	0.0010	0.0095
619	0.0094	0.064
620	0.0074	0.0065
621	0.090	0.064
622	0.0084	0.0022
623	0.0115	0.16
624	0.0015	0.0093
625	0.0019	0.012
626	0.0007	0.013
627	0.0086	0.0020
628	0.0047	0.059
629	0.0099	0.67
630	0.0052	1.1
631	0.0100	0.16
632	0.0009	0.0037
633	0.0014	0.0043
634	0.0020	0.0023
635	0.0037	0.0063
636	0.0016	0.0032
637	0.0066	0.0057
638	0.014	0.29
639	0.0058	0.057
640	0.0022	1.2
641	0.0028	1.0
642	0.015	0.57
643	0.0026	0.075

實例	hFPR2 cAMP2 EC ₅₀ (μM)	hFPR1 cAMP EC ₅₀ (μM)
644	0.0021	0.064
645	0.0028	0.19
646	0.016	0.67
647	0.0015	0.022
648	0.0007	0.0041
649	0.0013	0.0078
650	0.011	1.7
651	0.0035	0.78
652	0.0072	0.70
653	0.0033	0.012
654	0.0010	0.012
655	0.0038	0.0012
656	0.0025	0.013
657	0.0020	0.045
658	0.0034	0.0017
659	0.0010	0.0013
660	0.0014	0.029
661	0.0012	0.11
662	0.0040	0.014
663	0.0011	1.7
664	0.0087	0.19
665	<0.010	0.0074
666	0.015	0.015
667	0.063	0.0077
668	0.0088	0.21
669	0.011	0.27
670	0.0065	
671	0.0058	

實例	hFPR2 cAMP2 EC ₅₀ (μM)	hFPR1 cAMP EC ₅₀ (μM)
672	0.0079	0.005
673	0.0031	0.012
674	0.0068	0.023
675	0.0055	0.005
676	0.013	0.295
677	0.0053	0.230
678	0.011	0.092
679	0.006	0.028
680	0.0028	0.78
681	0.010	1.000
682	0.015	0.001
683	0.013	
684	0.007	0.005
685	0.014	0.0014
686	0.013	0.00070
687	0.0018	0.00028
688	0.012	0.0015
689	0.0045	0.0015
690	0.011	0.024
691	0.011	0.011
692	0.0038	0.0028
693	0.0020	0.0025
694	0.0061	0.056
695	0.0035	0.004
696	0.0072	0.0083
697	0.0036	0.0067
698	0.0057	0.0025
699	0.0066	0.0030

實例	hFPR2 cAMP2 EC ₅₀ (μM)	hFPR1 cAMP EC ₅₀ (μM)
700	0.0030	0.00067
701	0.012	0.027
702	0.0085	0.0075
703	0.057	0.099
704	0.0024	0.001
705	0.0006	0.0039
706	0.0094	0.019
707	0.0054	0.13
708	0.011	>1
709	0.014	0.21
710	0.0040	0.49
711	0.0042	3.4
712	0.0021	2.8
713	0.0040	>5
714	0.0064	3.6
715	0.0055	>5
716	0.0057	>5
717	0.0007	0.15
718	0.0009	0.84
719	0.0014	1.9
720	0.0039	>5
721	0.0056	>5

【0069】

醫藥組合物及使用方法

本發明之化合物可向哺乳動物、較佳人類投與，以用於治療多種病狀及病症，包括動脈粥樣硬化；心臟衰竭；肺病，包括氣喘、COPD及囊性纖維化；神經發炎性疾病，包括多發性硬化、阿茲海默氏病及中風；及

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慢性發炎性疾病，例如發炎性腸病、類風濕性關節炎、牛皮癬、敗血症及腎纖維化。

【0070】除非另有指定，否則以下術語具有所陳述之含義。如此領域之從業者所理解，術語「個體」係指可潛在地受益於利用FPR2及/或FPR1促效劑進行治療之任何人類或其他哺乳動物物種。一些個體包括具有心血管疾病風險因素之任何年齡之人類。常見風險因素包括年齡、性別、體重、家族史、睡眠呼吸中止、酒精或煙草使用、體能活動不足心律不整或胰島素抗性徵象，例如黑棘皮症、高血壓、異常血脂症或多囊性卵巢症候群(PCOS)。術語「患者」意指適於療法的人，如此領域之從業者所確定。如此領域之從業者所理解，「治療(treating或treatment)」涵蓋對患者或個體之治療。如此領域之從業者所理解，「預防(preventing或prevention)」涵蓋對患者或個體之亞臨床疾病狀態進行預防性治療(即，預防及/或降低風險)，其旨在降低發生臨床疾病狀態之機率。基於已知與一般群體相比增加罹患臨床疾病狀態之風險之因素來選擇進行預防性療法之患者。如此領域之從業者所理解，「治療有效量」意指化合物有效之量。

【0071】本發明之另一態樣係醫藥組合物，其包含治療有效量之式(I)至(VII)之化合物與醫藥載劑之組合。

【0072】本發明之另一態樣係醫藥組合物，其包含治療有效量之式(I)至(VII)之化合物與至少一種其他治療劑及醫藥載劑之組合。

【0073】「醫藥組合物」意指包含本發明之化合物與至少一種其他醫藥上可接受之載劑之組合的組合物。「醫藥上可接受之載劑」係指業內一般接受用於將生物活性劑遞送至動物(特別是哺乳動物)之介質，包括

(即)佐劑、賦形劑或媒劑，例如稀釋劑、防腐劑、填充劑、流動調節劑、崩解劑、潤濕劑、乳化劑、懸浮劑、甜味劑、矯味劑、芳香劑、抗細菌劑、抗真菌劑、潤滑劑及分散劑，此取決於投與模式及劑型之性質。

【0074】醫藥上可接受之載劑係根據熟習此項技術者所熟知之多種因素來調配。該等因素包括(但不限於)：所調配活性劑之類型及性質；含有活性劑之組合物欲投與之個體；組合物之預期投與途徑；及所靶向之治療適應症。醫藥上可接受之載劑包括水性及非水性液體介質二者，以及多種固體及半固體劑型。此等載劑除活性劑以外亦可包括多種不同成分及添加劑，此等其他成分出於熟習此項技術者熟知之多種原因(例如，穩定活性劑、黏合劑等)包括於調配物中。適宜醫藥上可接受之載劑及其選擇中所涉及因素之闡述可見多種輕易獲得之來源，例如，Allen, L.V., Jr. 等人，*Remington: The Science and Practice of Pharmacy* (2卷)，第22版，Pharmaceutical Press (2012)。

【0075】特定而言，當作為單一劑量單位提供時，組合之活性成分之間可能存在化學相互作用。出於此原因，當本發明之化合物及第二治療劑以單一劑量單位組合時，其經調配使得儘管活性成分係以單一劑量單位組合，但活性成分之間的物理接觸降至最低(亦即減小)。舉例而言，一種活性成分可經包腸衣。藉由將一種活性成分包腸衣，不僅可將組合活性成分之間的接觸降至最低，亦可控制該等組分中之一者在胃腸道中之釋放，使得該等組分中之一者不在胃中釋放而在腸中釋放。該等活性成分中之一者亦可經影響在整個胃腸道內之持續釋放且亦用於使組合活性成分之間的物理接觸降至最低之材料包衣。此外，持續釋放組分可另外包腸衣，使得此組分之釋放僅發生於腸中。另一方法將涉及組合產物之調配，其中一種

組分經持續釋放及/或腸釋放聚合物包衣，且另一組分亦經聚合物(例如低黏度等級之羥丙基甲基纖維素(HPMC)或如業內已知之其他適當材料)包衣，以進一步分離活性組分。聚合物包衣用於形成與另一組分相互作用之額外障壁。

【0076】本發明之另一態樣係用於治療心臟疾病之方法，其包含向患者投與治療有效量之式(I)至(VII)之化合物。

【0077】本發明之另一態樣係用於治療心臟疾病之方法，其中該心臟疾病係選自由以下組成之群：心絞痛、不穩定性心絞痛、心肌梗塞、心臟衰竭、急性冠狀動脈疾病、急性心臟衰竭、慢性心臟衰竭及心臟醫源性損害。

【0078】應理解，心臟衰竭之治療或預防亦可涉及心血管事件之治療或預防。本文所提及之治療或預防可係指對與心血管事件相關或源自心血管事件之某些陰性症狀或病狀之治療或預防。舉例而言，治療或預防可涉及減少或預防以下各項與心血管事件相關或源自心血管事件之負向變化：縮短分數、心臟重量、肺重量、肌細胞橫斷面面積、壓力超負荷誘發之心臟纖維化、應力誘發之細胞衰老及/或心肥大性質或其任一組合。可為預防心血管事件或因應於心血管事件而投與治療以緩和負效應。預防可涉及積極主動或預防型治療以預防心血管事件或減少心血管事件負效應之發生。

【0079】在一個實施例中，本發明提供式(I)至(VII)之化合物或其醫藥上可接受之鹽之用途，其用於製備用於治療或預防心臟衰竭之醫藥組合物，例如由以下所導致之心臟衰竭：高血壓、缺血性心臟病、非缺血性心臟病、暴露於心臟毒性化合物、心肌炎、川崎病(Kawasaki's disease)、I

型及II型糖尿病、甲狀腺疾病、病毒感染、牙齦炎、藥物濫用、酒精濫用、心包炎、動脈粥樣硬化、血管疾病、肥厚性心肌病變、擴張性心肌病變、心肌梗塞、心房纖維化、左心室收縮功能障礙、左心室舒張功能障礙、冠狀動脈旁路手術、心律調節器植入手術、饑餓、飲食障礙、肌營養不良症及遺傳缺陷。較佳地，欲治療之心臟衰竭係舒張期心臟衰竭、射出分率降低型心臟衰竭(HF_REF)、射出分率保留型心臟衰竭(HF_PEF)、急性心臟衰竭以及缺血性及非缺血性起源之慢性心臟衰竭。

【0080】在一個實施例中，本發明提供式(I)至(VII)之化合物用以治療收縮及/或舒張功能障礙之用途，其中以治療有效量投與該化合物以增加心肌細胞收縮及舒張之能力，藉此增加右心室及左心室、較佳左心室之充盈及排空。

【0081】在另一實施例中，本發明提供式(I)至(VII)之化合物用以治療心臟衰竭之用途，其中以治療有效量投與該化合物以增加左心室中之射出分率。

【0082】在另一實施例中，本發明提供式(I)至(VII)之化合物用以治療心臟衰竭之用途，其中以治療有效量投與該化合物以降低心臟組織之纖維化。

【0083】本發明之另一態樣係用於治療心臟疾病之方法，其中治療係在心肌梗塞後進行。

【0084】本發明之另一態樣係用於治療心臟疾病之方法，其包含向患者投與治療有效量之式(I)至(VII)之化合物聯合其他治療劑。

【0085】本發明之化合物可藉由任何適宜方式來投與，例如經口，例如錠劑、膠囊(各自包括持續釋放或定時釋放之調配物)、丸劑、粉末、

顆粒、酞劑、酞劑、懸浮液(包括奈米懸浮液、微懸浮液、噴霧乾燥之分散液)、糖漿及乳液；經舌下；經頰；非經腸，例如藉由皮下、靜脈內、肌肉或胸骨內注射或輸注技術(例如，以無菌可注射水性或非水性溶液或懸浮液形式)；經鼻，包括投與至鼻膜，例如藉由吸入噴霧；經局部，例如以乳霜或軟膏之形式；或經直腸，例如以栓劑之形式。其可單獨投與，但通常將與基於所選投與途徑及標準醫藥實踐選擇之醫藥載劑一起投與。

【0086】當然，本發明化合物之藥劑量方案將端視諸如以下等已知因素而變化：特定藥劑之藥效學特性及其投與模式及途徑；接受者之物種、年齡、性別、健康狀況、醫學病狀及體重；症狀之性質及程度；同時治療之種類；治療頻率；投與途徑、患者之腎及肝功能及期望效應。

【0087】作為一般性指導，當使用以獲得所指示效應時，每一活性成分之日口服劑量將在以下範圍內：每天約0.01 mg至約5000 mg之間、較佳每天約0.1 mg至約1000 mg之間且最佳每天約0.1 mg至約250 mg之間。在恆定速率輸注期間，靜脈內最佳劑量將在約0.01 mg/kg/分鐘至約10 mg/kg/分鐘範圍內。本發明之化合物可以單一日劑量投與，或總日劑量可以每日兩次、三次或四次之分開劑量投與。

【0088】適於投與之藥劑型(醫藥組合物)可含有約1毫克至約2000毫克活性成分/劑量單位。在該等醫藥組合物中，基於組合物之總重量，活性成分通常將以約0.1重量%至95重量%之量存在。用於經口投與之典型膠囊含有至少一種本發明之化合物(250 mg)、乳糖(75 mg)及硬脂酸鎂(15 mg)。混合物穿過60目網篩並填充於1號明膠膠囊。典型可注射製劑係藉由將至少一種本發明之化合物(250 mg)無菌置於小瓶中、無菌冷凍-乾燥及密封來產生。使用時，將小瓶內容物與2 mL生理鹽水混合，以產生可

注射製劑。

【0089】本發明之化合物可與可用於治療上文所提及疾病或病症之其他適宜治療劑組合使用，該等其他適宜治療劑包括：抗動脈粥樣硬化劑、抗血脂異常劑、抗糖尿病劑、抗高血糖劑、抗高胰島素血症劑、抗血栓劑、抗視網膜病變劑、抗神經病變劑、抗腎病變劑、抗缺血劑、抗高血壓劑、抗肥胖症劑、抗高脂血症劑、抗高甘油三酯血症劑、抗高膽固醇血症劑、抗再狹窄劑、抗胰臟劑(anti-pancreatic agent)、降脂劑、厭食劑、記憶增強劑、抗失智症劑、認知促進劑、食欲抑制劑、用於治療心臟衰竭之藥劑、用於治療周圍動脈疾病之藥劑、用於治療惡性腫瘤之藥劑及抗發炎劑。

【0090】本發明之化合物可與選自以下心臟衰竭劑中之至少一者一起使用：袢利尿劑、血管收縮肽轉化酶(ACE)抑制劑、血管收縮肽II受體阻斷劑(ARB)、血管收縮肽受體-腦啡肽酶抑制劑(ARNI)、 β 阻斷劑、鹽皮質激素受體拮抗劑、硝鹽基供體、RXFP1促效劑、APJ促效劑及強心劑。該等藥劑包括(但不限於)呋塞米(furosemide)、布美他尼(bumetanide)、托塞米(torsemide)、沙庫巴曲(sacubitril)-鰓沙坦(valsartan)、噻嗪利尿劑、卡托普利(captopril)、依那普利(enalapril)、賴諾普利(lisinopril)、卡維地洛(carvedilol)、美托洛爾(metoprolol)、比索洛爾(bisoprolol)、思瑞萊辛(serelaxin)、螺內酯、依普利酮(eplerenone)、伊伐佈雷定(ivabradine)、坎地沙坦(candesartan)、依普羅沙坦(eprosartan)、厄貝沙坦(irbesartan)、氯沙坦(losartan)、奧美沙坦(olmesartan)、替米沙坦(telmisartan)及鰓沙坦。

【0091】本發明之化合物可與以下治療劑中之至少一者組合使用以

治療動脈粥樣硬化：抗高脂血症劑、血漿HDL升高劑、抗高膽固醇血症劑、膽固醇生物合成抑制劑(例如HMG CoA還原酶抑制劑)、LXR促效劑、匹洛布克(probucol)、雷洛昔芬(raloxifene)、煙鹼酸、煙鹼酸醯胺、膽固醇吸收抑制劑、膽汁酸鉗合劑(例如陰離子交換樹脂或四級胺(例如消膽胺(cholestyramine)或考來替泊(colestipol))、低密度脂蛋白受體誘導劑、氯貝特(clofibrate)、非諾貝特(fenofibrate)、苯紫貝特(benzofibrate)、環丙貝特(cipofibrate)、吉非羅齊(gemfibrozil)、維生素B₆、維生素B₁₂、抗氧化劑維生素、β-阻斷劑、抗糖尿病劑、血管收縮肽II拮抗劑、血管收縮肽轉化酶抑制劑、血小板聚集抑制劑、纖維蛋白原受體拮抗劑、阿斯匹林(aspirin)及纖維酸衍生物。

【0092】本發明之化合物可與以下治療劑中之至少一者組合使用以治療高脂血症：膽固醇生物合成抑制劑、特定地HMG-CoA還原酶抑制劑。適宜HMG-CoA還原酶抑制劑之實例包括(但不限於)洛伐他汀(lovastatin)、斯伐他汀(simvastatin)、普伐他汀(pravastatin)、氟伐他汀(fluvastatin)、阿托伐他汀(atorvastatin)及瑞舒伐他汀(rosuvastatin)。

【0093】本發明之化合物可與以下抗糖尿病劑中之至少一者組合使用，此取決於期望之目標療法。研究指示，可藉由對治療方案添加第二藥劑進一步改良糖尿病及高脂血症調節。抗糖尿病劑之實例包括(但不限於)磺醯脲類(例如氯磺丙脲(chlorpropamide)、甲苯磺丁脲(tolbutamide)、乙醯苯磺醯環己脲(acetohexamide)、甲磺吡啶脲(tolazamide)、格列苯脲(glyburide)、格列齊特(gliclazide)、格列農(glynase)、格列美脲(glimepiride)及格列吡嗪(glipizide))、雙胍類(例如二甲雙胍(metformin))、噻唑啉二酮類(例如環格列酮(ciglitazone)、吡格列酮

(pioglitazone)、曲格列酮(troglitazone)及羅格列酮(rosiglitazone))及相關胰島素敏化劑(例如PPAR α 、PPAR β 及PPAR γ 之選擇性及非選擇性活化劑)；去氫表雄酮(亦稱為DHEA或其共軛硫酸酯DHEA-SO₄)；抗糖皮質激素；TNF α 抑制劑；二肽基肽酶IV (DPP4)抑制劑(例如西他列汀(sitagliptin)、沙格列汀(saxagliptin))、GLP-1促效劑或類似物(例如艾塞那肽(exenatide))、 α -葡萄糖苷酶抑制劑(例如阿卡波糖(acarbose)、米格列醇(miglitol)及伏格列波糖(voglibose))、普蘭林肽(pramlintide)(人類激素澱粉素之合成類似物)、其他胰島素促泌素(例如瑞格列奈(repaglinide)、格列喹酮(gliquidone)及那格列奈(nateglinide))、胰島素以及上文所論述用於治療動脈粥樣硬化之治療劑。

【0094】本發明之化合物可與以下抗肥胖症劑中之至少一者組合使用，該等抗肥胖症劑選自苯丙醇胺(phenylpropanolamine)、芬他命(phentermine)、安非拉酮(diethylpropion)、馬吲哚(mazindol)、芬氟拉明(fenfluramine)、右芬氟拉明(dexfenfluramine)、非利拉明(phentiramine)、 β_3 -腎上腺素受體促效劑；西布曲明(sibutramine)、胃腸脂酶抑制劑(例如奧利司他(orlistat))及瘦素(leptin)。用於治療肥胖症或肥胖症相關病症之其他藥劑包括神經肽Y、腸抑素(enterostatin)、膽囊收縮素、鈴蟾素、澱粉素、組織胺H₃受體、多巴胺(dopamine) D₂受體調節劑、黑色素細胞刺激性激素、促皮質素釋放因子、甘丙胺素(galanin)及 γ 胺基丁酸(GABA)。

【0095】本發明之化合物在涉及FPR2之測試或分析中亦可用作標準品或參考化合物，例如用作品質標準品或對照。此等化合物可提供於商業套組中以(例如)用於涉及FPR2活性之醫藥研究。舉例而言，本發明之化

合物可在分析中用作參考以將其已知活性與具有未知活性之化合物進行比較。此可確保實驗者合理實施分析且提供比較依據，尤其在測試化合物係參考化合物之衍生物之情形下。在開發新的分析或方案時，可使用本發明化合物以測試其有效性。本發明之化合物亦可用於涉及FPR2之診斷分析中。

【0096】 本發明亦涵蓋製品。如本文所使用，製品意欲包括(但不限於)套組及包裝。本發明之製品包含：(a) 第一容器；(b) 位於該第一容器內部之醫藥組合物，其中該組合物包含第一治療劑，該第一治療劑包含本發明之化合物或其醫藥上可接受之鹽形式；及(c) 包裝插頁，其陳述該醫藥組合物可用於治療異常血脂症及其後遺症。在另一實施例中，包裝插頁陳述醫藥組合物可與第二治療劑組合(如先前所定義)使用以用於治療異常血脂症及其後遺症。製品可進一步包含：(d) 第二容器，其中組分(a)及(b)位於該第二容器內部且組分(c)位於該第二容器之內部或外部。位於第一及第二容器內部意指各別容器將物品容納在其邊界內。第一容器係用於容納醫藥組合物之貯器。此容器可用於製造、儲存、運送及/或個別/整體出售。第一容器意欲涵蓋瓶、罐、小瓶、燒瓶、注射器、管(例如用於乳霜製劑)或用於製造、容納、儲存或分配醫藥產物之任何其他容器。第二容器係用於容納第一容器及視情況包裝插頁者。第二容器之實例包括(但不限於)盒(例如紙板盒或塑膠盒)、條板箱、紙板箱、袋(例如紙袋或塑膠袋)、小袋及包。包裝插頁可經由膠帶、膠水、卡釘或另一附接方法物理附接至第一容器之外部，或其可位於第二容器之內部，而不需以任何物理方式附接至第一容器。或者，包裝插頁位於第二容器之外部。當位於第二容器之外部時，包裝插頁較佳經由膠帶、膠水、U形釘或另一附接方法物

理附接。或者，其可毗鄰或接觸第二容器之外部而無物理附接。包裝插頁係標記、標籤、標記物等，其列舉與位於第一容器內之醫藥組合物相關之資訊。所列舉資訊通常將由管理欲出售製品之地區之管理機構(例如美國食品與藥物管理局(United States Food and Drug Administration))確定。較佳地，包裝插頁明確地列舉醫藥組合物已批准使用之適應症。包裝插頁可由任何材料製得，可在該材料上閱讀其中或其上所含之資訊。較佳地，包裝插頁係在其上已形成(例如印刷或施加)期望資訊之可印刷材料(例如紙、塑膠、紙板、箔、黏著劑背襯紙或塑膠等)。

【0097】

化學方法

本文所使用之縮寫係如下進行定義：「1×」係一次，「2×」係兩次，「3×」係三次，「℃」係攝氏度，「aq」係水性，「Col」係管柱，「eq」係當量(equivalent或equivalents)，「g」係克(gram或grams)，「mg」係毫克(milligram或milligrams)，「L」係公升(liter或liters)，「mL」係毫升(milliliter或milliliters)，「μL」係微升(microliter或microliters)，「N」係正常，「M」係莫耳濃度，「nM」係奈莫耳濃度，「mol」係莫耳(mole或moles)，「mmol」係毫莫耳(millimole或millimoles)，「min」係分鐘(minute或minutes)，「h」係小時(hour或hours)，「rt」係室溫，「RT」係保留時間，「ON」係過夜，「atm」係氣氛，「psi」係磅/平方英吋，「conc.」係濃縮物，「aq」係水性，「sat」或「sat'd」係飽和，「MW」係分子量，「mw」或「μ波」係微波，「mp」係熔點，「Wt」係重量，「MS」或「Mass Spec」係質譜，「ESI」係電噴霧電離質譜，「HR」係高解析度，「HRMS」係高解析度

質譜，「LCMS」係液相層析質譜，「HPLC」係高壓液相層析，「RP HPLC」係反相HPLC，「TLC」或「tlc」係薄層層析，「NMR」係核磁共振光譜，「nOe」係核奧佛豪瑟效應光譜(nuclear Overhauser effect spectroscopy)，「¹H」係質子，「δ」係德爾塔(delta)，「s」係單峰，「d」係二重峰，「t」係三重峰，「q」係四重峰，「m」係多重峰，「br」係寬峰，「Hz」係赫茲(hertz)，且「α」、「β」、「R」、「S」、「E」及「Z」係熟習此項技術者習知之立體化學名稱。

Ac	乙酸
AcOH	乙酸
Acn (或MeCN)	乙腈
Bn	苄基
Boc	第三丁基羰基
Boc ₂ O	二碳酸二-第三丁基酯
Bu	丁基
如(Pd ₂ (dba) ₃)中之Dba	二亞苄基丙酮
Cbz	羧基苄基
DCM	二氯甲烷
DEA	二乙胺
DIEA或DIPEA	二異丙基乙胺
DMAP	4-二甲基胺基吡啶
DMF	二甲基甲醯胺
DMSO	二甲基亞砷
dppf	1,1'-雙(二苄基膦基)二茂鐵
Et	乙基
EtOH	乙醇
EtOAc	乙酸乙酯
HATU	六氟磷酸2-(7-氮雜-1H-苯并三唑-1-基)-1,1,3,3-四甲基脲鎢

HBTU	六氟磷酸2-(1 <i>H</i> -苯并三唑-1-基)-1,1,3,3-四甲基脲鎗
<i>i</i> -Bu	異丁基
IPA	異丙醇
<i>i</i> -Pr	異丙基
LAH	氫化鋰鋁
Me	甲基
MeOH	甲醇
pet	石油
Ph	苯基
Pr	丙基
<i>t</i> -Bu	第三丁基
TEA	三乙胺
TFA	三氟乙酸
THF	四氫呋喃
Ts	甲苯磺醯基

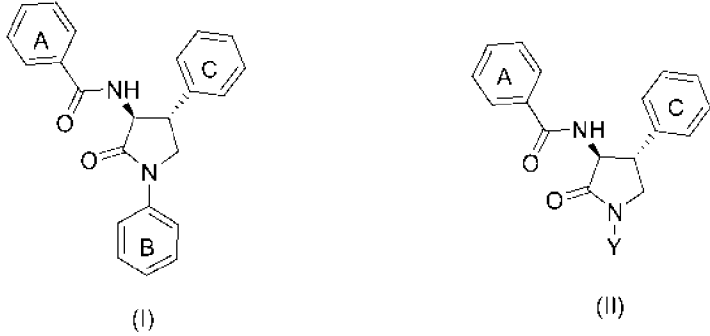
【0098】所揭示之化合物可藉由業內已知之各種方法來製得，該等方法包括以下方案及特定實施例部分中之彼等方法。合成方案中所示之結構編號及變量編號不同於申請專利範圍或說明書之其餘部分中之結構或變量編號，且不應與其混淆。方案中之變量僅意欲說明如何製備本發明之一些化合物。

【0099】本揭示內容不限於前述說明性實例，且該等實例在所有態樣中均應視為說明性而非限制性的，且因此本揭示內容意欲囊括在申請專利範圍之等效內容之含義及範圍內的所有變化。

【0100】在此領域中計劃任一合成途徑時之考慮因素係選擇用於保護存在於本發明所闡述化合物中之反應官能基之保護基團。向經訓練從業者闡述許多替代方式之權威解釋係Greene, T.W.等人，*Protecting Groups*

in *Organic Synthesis* , 第4版 , Wiley (2007))。

【0101】具有通式(I) (其中A、B及C在上文中分別定義為Ar¹、Ar²及Ar³)及式(II) (其中A、B及Y在上文中分別定義為Ar¹、Ar²及烷基及或環烷基)之化合物可藉由以下一或多種合成方案來製備。

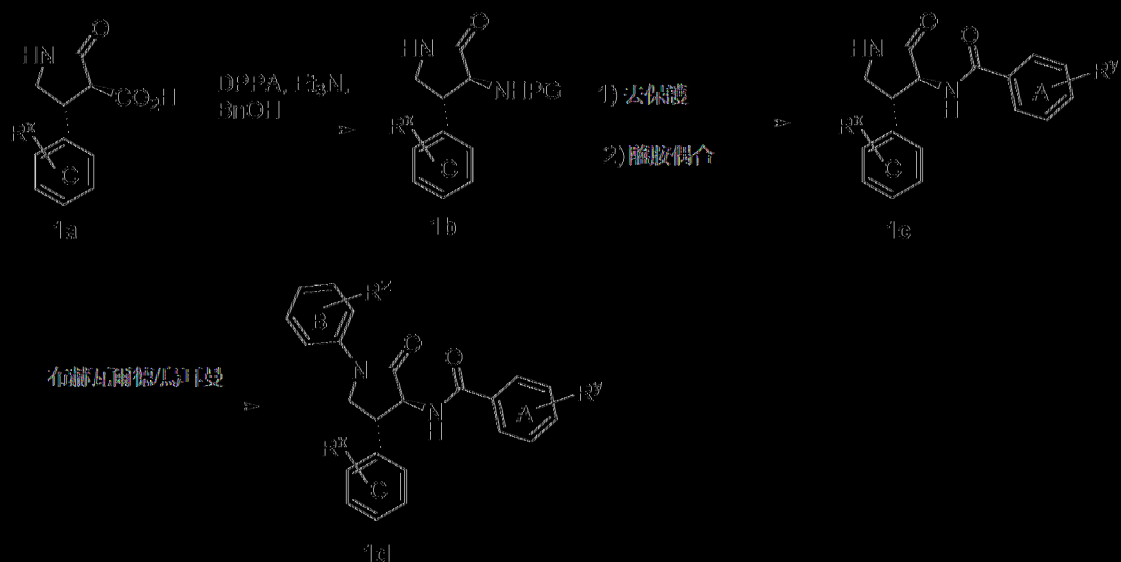


【0102】本發明之1-芳基吡咯啉酮化合物(式I) (其中環A係經取代之苯基或環烷基環，環B係苯基或雜芳基環且環C係經取代之苯基或雜芳基環)可藉由方案1中所示之一般途徑來製備。化合物**1a**係按照專利文獻(WO2015079692)中所報導之程序來合成。利用二苯基磷醯基疊氮化物(DPPA)及三級胺(例如三乙胺(TEA))處理化合物**1a**。隨後添加苄醇產生經Cbz保護之化合物**1b**。利用Pd/C在氫存在下自**1b**去除Cbz保護基團，之後使所得游離胺與適宜經取代之苯基酸進行醯胺偶合提供醯胺**1c**。熟習此項技術者已知之其他去保護條件及保護基團亦可按此順序使用。於適宜溶劑(例如丁醇或二噁烷或甲苯)中，在鹼(例如碳酸鉀或碳酸鈉)及適宜配體(例如N,N'-二甲基乙二胺或Xanthphos)存在下，**1c**至經取代之碘苯或溴苯或其他適宜鹵基芳基或雜芳基化合物之銅或Pd催化之偶合可提供期望化合物**1d**。適宜芳基或雜芳基鹵化物可商業購得或可藉由熟習此項技術者已知之方法自相應易於獲得之起始材料容易地獲得。此轉變之其他方法包括烏耳曼(Ullmann)、哥德堡(Goldberg)及布赫瓦爾德(Buchwald)銅催化之醯胺化或布赫瓦爾德Pd催化之C-N偶合之其他變化形式，其端視環B之性質使

用熟習此項技術者已知之用於該等類型偶合之方法(例如，參見Yin及Buchwald，Organic Lett.2000, 2, 1101；Klapars等人，JACS, 2001, 123, 7727；Klapars等人，JACS, 2002, 124, 7421；Yin及Buchwald，JACS.2002, 124, 6043；Kiyomor、Madoux及Buchwald，Tet.Lett., 1999, 40, 2657)。類似地，本發明之1-芳基吡咯啉酮化合物(式I) (其中環A及C係經取代之苯基環或雜芳基或環烷基，且環B係苯基或雜芳基)可藉由方案2中所示之一般途徑來製備。

[(0103)]

方案1



[(0104)]

方案2



本發明之1-芳基吡咯啉酮化合物(式II) (其中環A及C係苯環且Y係經

2% 水、0.1% HCOOH)之梯度、或溶劑A (95% 水、5% Acn、10 mM NH₄OAc)及溶劑B (98% Acn、2% 水、10 mM NH₄OAc)之梯度、或溶劑A (98% 水、2% Acn、0.1% NH₄OH)及溶劑B (98% Acn、2% 水、0.1% NH₄OH)之梯度。

【0108】實例之表徵中所採用之LC/MS方法。反相分析型HPLC/MS係在與Waters MICROMASS® ZQ質譜儀耦聯之Waters Acquity系統上實施。

【0109】方法A：在3 min內0%至100% B之線性梯度，在100% B下保持時間為0.75 min；

在220 nm下進行UV可視化

管柱：Waters BEH C18 2.1 × 50 mm

流速：1.0 mL/min

溶劑A：0.1% TFA、95% 水、5% Acn

溶劑B：0.1% TFA、5% 水、95% Acn

【0110】方法B：在3 min內0%至100% B之線性梯度，在100% B下保持時間為0.75 min；

在220 nm下進行UV可視化

管柱：Waters BEH C18 2.1 × 50 mm

流速：1.0 mL/min

溶劑A：10 mM乙酸銨、95% 水、5% Acn

溶劑B：10 mM乙酸銨、5% 水、95% Acn

分析型HPLC：實例之表徵中所採用之方法

產物係藉由反相分析型HPLC進行分析，其係在運行Discovery VP軟

體之Shimadzu分析型HPLC系統上實施。RT =滯留時間。

【0111】方法C：Ascentis Express C18，2.1 × 50 mm，2.7-μm粒子；溶劑A：95%水、5%乙腈、0.05% TFA；溶劑B：95%乙腈、5%水、0.1% TFA；溫度：50°C；梯度：在3分鐘內0%-100% B，然後在100% B下保持1分鐘；流速：1.1 mL/min。

【0112】方法D：Ascentis Express C18，2.1 × 50 mm，2.7-μm粒子；溶劑A：95%水、5%乙腈，含有10 mM乙酸銨；溶劑B：95%乙腈、5%水，含有10 mM乙酸銨；溫度：50°C；梯度：在3分鐘內0%-100% B，然後在100% B下保持1分鐘；流速：1.1 mL/min。

【0113】使用以下代表性條件針對手性純度篩選化合物。亦使用其他條件。

【0114】管柱：Chiralpak IA，250 × 4.6 mm，5.0-μm粒子，Chiralpak IB，250 × 4.6 mm，5.0-μm粒子，Chiralpak IC，250 × 4.6 mm，5.0-μm粒子，Chiralpak ID，250 × 4.6 mm，5.0-μm粒子，Chiralpak IE，250 × 4.6 mm，5.0-μm粒子及Chiralpak IF，250 × 4.6 mm，5.0-μm粒子；

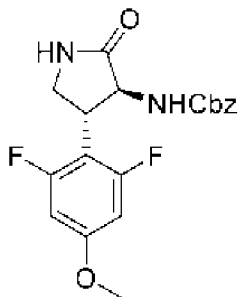
【0115】移動相：於Acn:MeOH (1:1)中之0.2%氨。

【0116】實例之表徵中所採用之NMR。利用Bruker或JEOL®傅裡葉(Fourier)變換光譜儀來獲得¹H NMR光譜，其係在如下頻率下操作：¹H NMR：300 MHz (Bruker或JEOL®)或400 MHz (Bruker或JEOL®)或500 MHz (Bruker或JEOL®)。¹³C NMR：100 MHz (Bruker或JEOL®)。光譜數據係以下列格式報告：化學位移(多重性、偶合常數及氫數)。化學位移係以四甲基矽烷內標準品之ppm低場區(δ單位，四甲基矽烷= 0 ppm)及/或

參照溶劑峰指定，在¹H NMR光譜中，對於CD₂HSOCD₃，其在2.49 ppm出現，對於CD₂HOD為3.30 ppm，對於CD₃CN為1.94 ppm，且對於CHCl₃為7.24 ppm，且在¹³C NMR光譜中，對於CD₃SOCD₃，其在39.7 ppm出現，對於CD₃OD為49.0 ppm且對於CDCl₃為77.0 ppm。所有¹³C NMR光譜均經質子去偶合。

【0117】

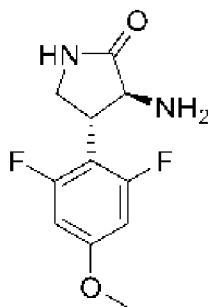
中間體1：((3*S*,4*R*)-4-(2,6-二氟-4-甲氧基苯基)-2-氧代吡咯啉-3-基)氨基甲酸苄基酯



向(3*S*,4*R*)-4-(2,6-二氟-4-甲氧基苯基)-2-氧代吡咯啉-3-甲酸(6.0 g, 22 mmol)、TEA (3.7 mL, 27 mmol)於甲苯(60 mL)及乙腈(12 mL)中之攪拌溶液添加二苯基磷醯基疊氮化物(5.7 mL, 27 mmol)。將混合物在室溫下攪拌3 h，且然後在80℃攪拌30 min。在混合物冷卻至室溫之後，添加苄醇(12 mL, 110 mmol)，並將混合物在100℃攪拌16 h。使反應混合物冷卻並在減壓下濃縮。經由管柱層析(石油醚-乙酸乙酯)純化殘餘物，提供呈無色液體之中間體1 (4.0 g, 11 mmol, 50%)。MS (ESI) *m/z*: 377.3 [M+H]⁺

【0118】

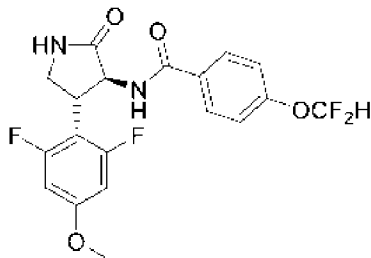
中間體2：(3*S*,4*R*)-3-氨基-4-(2,6-二氟-4-甲氧基苯基)吡咯啉-2-酮



向中間體1 (4.0 g, 11 mmol)於EtOH (60 mL)中之經脫氣溶液添加Pd-C (0.11 g, 1.1 mmol)。利用H₂吹掃反應混合物，且在室溫下在H₂氣氛下攪拌16 h。經由矽藻土墊過濾混合物且在減壓下濃縮，提供呈白色固體之(3*S*,4*R*)-3-胺基-4-(2,6-二氟-4-甲氧基苯基)吡咯啉-2-酮(2.5 g, 10.3 mmol, 97%)。粗製材料不經進一步純化即用於下一合成步驟中。MS (ESI) *m/z*: 243.2 [M+H]⁺

【0119】

中間體3：N-((3*S*,4*R*)-4-(2,6-二氟-4-甲氧基苯基)-2-氧代吡咯啉-3-基)-4-(二氟甲氧基)苯甲醯胺

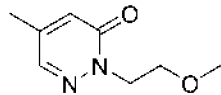


在氬氣氛下在室溫下向中間體2 (1.2 g, 5.0 mmol)於DMF (10 mL)中之攪拌溶液添加DIEA (1.0 mL, 6.0 mmol)、4-(二氟甲氧基)苯甲酸(1.1 g, 6.0 mmol)及 HATU (2.3 g, 6.0 mmol)。16 h後，利用水(20 mL)使反應混合物驟冷且用EtOAc (20 mL × 3)萃取。將合併之有機層用水及鹽水洗滌(各自20 mL)，經Na₂SO₄乾燥且在減壓下濃縮以得到粗產物，該粗產物經由管柱層析(石油醚-乙酸乙酯)進行純化，提供呈白色固體之中間體3 (1.2

在室溫下向3-溴-4-甲基吡啶-2(1H)-酮(1.5 g, 8.0 mmol)於DMF (15 mL)中之攪拌溶液添加3-溴-1,1,1-三氟丙-2-醇(2.3 g, 12 mmol)及K₂CO₃ (3.3 g, 24 mmol)。將反應混合物在90℃加熱16 h。使反應混合物冷卻，經由矽藻土墊過濾，且在減壓下濃縮。藉由矽膠層析(石油醚-乙酸乙酯)純化粗製化合物，且經由手性SFC分離來分離鏡像異構物以產生中間體5A (0.80 g, 2.7 mmol, 33.4%產率)及中間體5B (0.80 g, 2.7 mmol, 33%產率)。SFC製備條件：管柱/尺寸：Wheilk (R,R)(250 × 4.6) mm, 5μ；CO₂：85%，共溶劑%：15%之於IPA中之0.2% DEA。總流速：3.0 g/min，背壓：100巴，溫度：40℃，UV：220 nm。滯留時間峰1 = 3.2 min且峰2 = 4.4 min。鏡像異構物1：MS(ESI) m/z: 299.9 [M+H]⁺。 ¹H NMR (400 MHz, DMSO-d₆) δ = 7.60 (d, J = 7.0 Hz, 1H), 6.62 (d, J = 6.5 Hz, 1H), 6.29 (d, J = 7.0 Hz, 1H), 4.42 - 4.29 (m, 2H), 3.87 - 3.79 (m, 1H), 2.28 (s, 3H)。鏡像異構物2：MS(ESI) m/z: 299.9 [M+H]⁺。 ¹H NMR (400 MHz, DMSO-d₆) δ = 7.60 (d, J = 7.0 Hz, 1H), 6.62 (d, J = 6.5 Hz, 1H), 6.29 (d, J = 7.0 Hz, 1H), 4.42 - 4.29 (m, 2H), 3.87 - 3.79 (m, 1H), 2.28 (s, 3H)。

【0122】

中間體6：2-(2-甲氧基乙基)-5-甲基嘧啶-3(2H)-酮

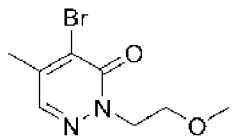


在室溫向5-甲基嘧啶-3(2H)-酮(1.0 g, 9.1 mmol)於DMF (10 mL)中之攪拌溶液添加碳酸鉀(3.8 g, 27 mmol)及1-溴-2-甲氧基乙烷(1.5 g, 11 mmol)。將反應混合物在70℃加熱15 h。然後，使反應混合物冷卻，經由

矽藻土墊過濾並在減壓下濃縮。藉由矽膠層析(石油醚-乙酸乙酯)純化粗製殘餘物，產生呈黃色液體之中間體6 (1.0 g，6.0 mmol，66%產率)。
MS(ESI) m/z : 169.1 $[M+H]^+$ 。 ^1H NMR (400 MHz, DMSO- d_6) δ = 7.79 (d, J = 2.0 Hz, 1H), 6.73 (m, 1H), 4.18 (t, J = 5.8 Hz, 2H), 3.64 (t, J = 5.8 Hz, 2H), 3.23 (s, 3H), 2.16 (d, J = 2.0 Hz, 3H)。

【0123】

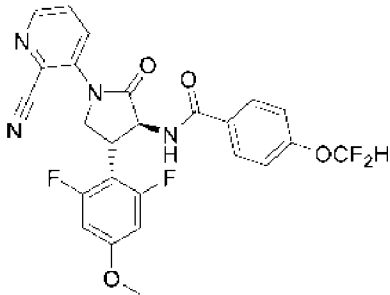
中間體7：4-溴-2-(2-甲氧基乙基)-5-甲基嗒嗪-3(2H)-酮



在室溫向2-(2-甲氧基乙基)-5-甲基嗒嗪-3(2H)-酮(500 mg, 3.0 mmol)於乙腈(5 mL)中之攪拌溶液添加NBS (1060 mg, 5.95 mmol)。然後，將反應混合物在80℃加熱16 h。使反應混合物冷卻，經由矽藻土墊過濾，並將濾液在減壓下濃縮。藉由矽膠層析(石油醚-乙酸乙酯)純化粗製化合物，提供呈橙色固體之中間體7 (350 mg，1.4 mmol，48%產率)。
MS(ESI) m/z : 249.1 $[M+H]^+$ 。 ^1H NMR (400 MHz, DMSO- d_6) δ = 7.86 (s, 1H), 4.26 (t, J = 5.5 Hz, 2H), 3.67 (t, J = 5.5 Hz, 2H), 3.22 (s, 3H), 2.27 (s, 3H)。

【0124】

實例1：N-((3S,4R)-1-(2-氰基吡啶-3-基)-4-(2,6-二氟-4-甲氧基苯基)-2-氧代吡咯啉-3-基)-4-(二氟甲氧基)苯甲醯胺

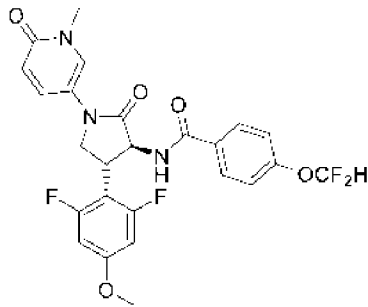


向中間體3 (80 mg, 0.19 mmol)於1,4-二噁烷(2 mL)中之攪拌溶液添加3-溴吡啶甲腈(43 mg, 0.23 mmol)及Cs₂CO₃ (130 mg, 0.39 mmol)。將反應混合物用氮吹掃5 min且裝填xanthphos (22 mg, 0.039 mmol)及Pd₂(dba)₃ (18 mg, 0.019 mmol)。將反應混合物再次用氮吹掃3 min且在100°C加熱16 h。使反應混合物冷卻且經由矽藻土墊過濾。將濾液在減壓下濃縮且藉由反相HPLC純化粗產物，提供呈白色固體之實例1 (26 mg，0.051 mmol，26%產率)。

MS(ESI) m/z: 515.2 [M+H]⁺。 ¹H NMR (400 MHz, DMSO-d₆) δ = 9.14 (d, *J* = 8.3 Hz, 1H), 8.72 (d, *J* = 4.6 Hz, 1H), 8.24 (d, *J* = 8.3 Hz, 1H), 7.94 - 7.87 (m, 3H), 7.35 (s, 1H), 7.29 (d, *J* = 8.8 Hz, 2H), 6.81 (d, *J* = 10.8 Hz, 2H), 5.16 - 5.02 (m, 1H), 4.34 - 4.22 (m, 2H), 4.18 - 4.09 (m, 1H), 3.78 (s, 3H)。 RT = 1.725 min，100% (方法D)。

【0125】

實例2：*N*-((3*S*,4*R*)-4-(2,6-二氟-4-甲氧基苯基)-1-(1-甲基-6-側氧基-1,6-二氫吡啶-3-基)-2-氧代吡咯啶-3-基)-4-(二氟甲氧基)苯甲醯胺

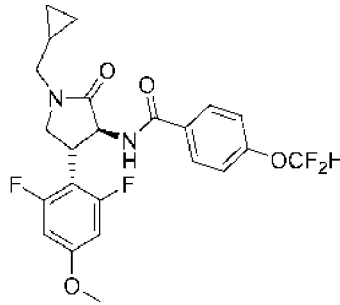


在室溫下向中間體3 (60 mg, 0.15 mmol)於1,4-二噁烷(2 mL)中之攪拌溶液添加5-溴-1-甲基吡啶-2(1H)-酮(33 mg, 0.18 mmol)、Cs₂CO₃ (95 mg, 0.29 mmol)及N,N'-二甲基乙二胺(2.6 mg, 0.029 mmol)。將反應混合物用氮吹掃5 min且然後裝填碘化銅(I) (5.5 mg, 0.029 mmol)，用氮吹掃3

min且在100℃加熱16 h。使反應混合物冷卻，經由矽藻土墊過濾且在減壓下濃縮以得到粗產物，藉由反相HPLC進行純化，提供呈白色固體之實例2 (32 mg，0.062 mmol，42%產率)。MS(ESI) m/z : 520.1 $[M+H]^+$ 。 ^1H NMR (400 MHz, DMSO- d_6) δ = 9.03 (d, J = 8.6 Hz, 1H), 8.01 (d, J = 2.7 Hz, 1H), 7.93 - 7.81 (m, 3H), 7.55 - 7.13 (m, 3H), 6.80 (d, J = 10.8 Hz, 2H), 6.46 (d, J = 10.0 Hz, 1H), 4.98 (m, 1H), 4.18 - 4.07 (m, 1H), 4.00 (t, J = 8.8 Hz, 1H), 3.93 - 3.85 (m, 1H), 3.78 (s, 3H), 3.45 (s, 3H)。RT = 1.677 min，100% (方法D)。

【0126】

實例3：N-((3S,4R)-1-(環丙基甲基)-4-(2,6-二氟-4-甲氧基苯基)-2-氧代吡咯啉-3-基)-4-(二氟甲氧基)苯甲醯胺

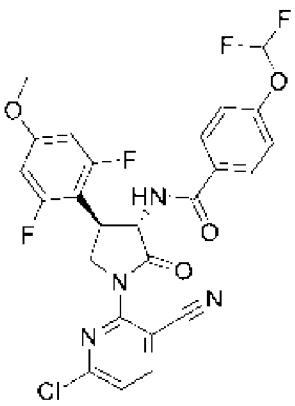
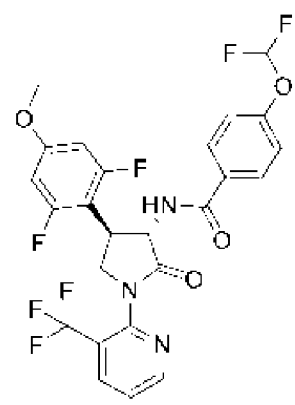


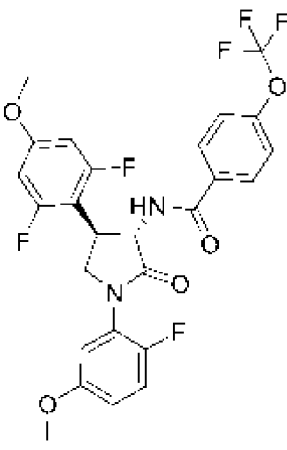
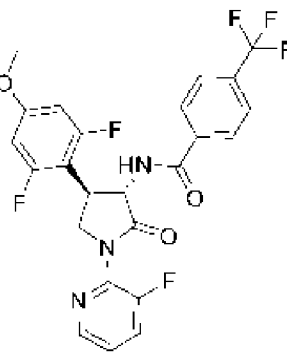
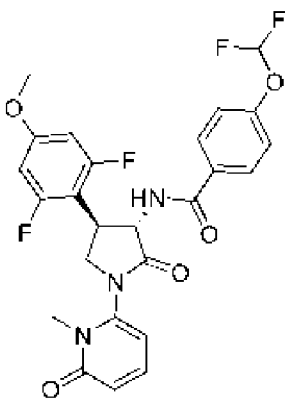
在0℃下在氬氣氛下向中間體3 (60 mg, 0.15 mmol)於DMF (2 mL)中之攪拌溶液添加NaH (8.7 mg, 0.22 mmol)，且將所得反應混合物攪拌30 min。然後將溴甲基環丙烷(24 mg, 0.18 mmol)添加至反應混合物，且經2 h之時期使混合物逐漸升溫至室溫。利用冰/水使反應混合物驟冷且用EtOAc (20 mL $\times$ 2)萃取。將合併之有機層用水(10 mL)及鹽水(10 mL)洗滌，經 Na_2SO_4 乾燥且在減壓下濃縮。藉由反相HPLC純化粗產物，提供呈白色固體之實例3 (23 mg，0.049 mmol，33%產率)。MS(ESI) m/z : 467.1 $[M+H]^+$ 。 ^1H NMR (400 MHz, DMSO- d_6) δ = 8.91 (d, J = 8.8 Hz,

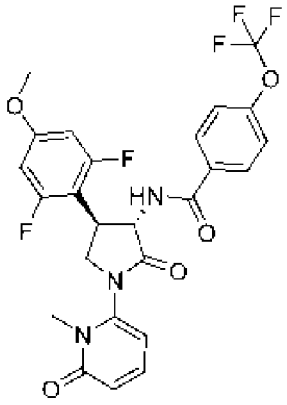
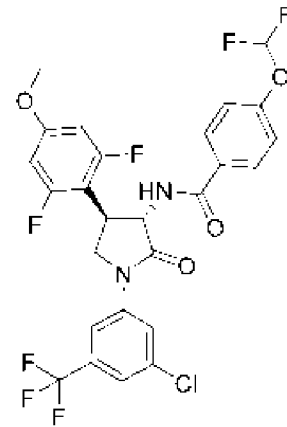
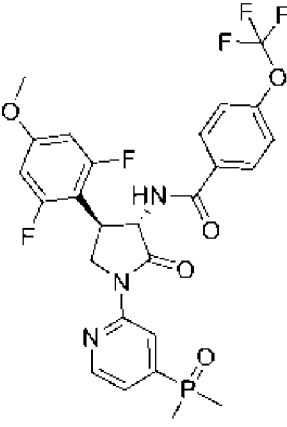
mmol，9.1%產率)及**實例5** (65 mg，0.10 mmol，8.7%產率)。SFC製備條件：管柱/尺寸：Luxcellulose (250 × 30) mm，5 μ ；CO₂%：60%，共溶劑%：40%之於MeOH中之4 M甲醇氨。總流速：120.0 g/min，背壓：100巴，溫度：30℃，UV：220 nm；滯留時間：峰1 = 4.6 min及峰2 = 9.7min。鏡像異構物1：MS(ESI) m/z: 618.2 [M+H]⁺。 ¹H NMR (400 MHz, DMSO-d₆) δ = 9.01 (br d, J = 8.6 Hz, 1H), 7.93 - 7.81 (m, 2H), 7.70 (dd, J = 6.8, 2.0 Hz, 1H), 7.65 (dd, J = 7.3, 2.0 Hz, 1H), 7.34 (t, J = 73.6 Hz, 1H), 7.27 (m, 2H), 6.76 (d, J = 10.8 Hz, 2H), 6.37 (t, J = 7.1 Hz, 1H), 5.16 - 5.04 (m, 1H), 4.45 (dd, J = 13.1, 2.8 Hz, 1H), 4.39 - 4.27 (m, 1H), 4.17 - 4.06 (m, 1H), 4.06 - 3.98 (m, 1H), 3.97 - 3.88 (m, 1H), 3.88 - 3.80 (m, 1H), 3.76 (s, 3H), 3.35 (br s, 1H)。鏡像異構物2：MS(ESI) m/z: 618.2 [M+H]⁺。 ¹H NMR (400 MHz, DMSO-d₆) δ = 9.02 (d, J = 8.8 Hz, 1H), 7.93 - 7.83 (m, 2H), 7.69 (dd, J = 6.7, 2.1 Hz, 1H), 7.64 (dd, J = 7.3, 2.1 Hz, 1H), 7.34 (t, J = 73.6 Hz, 1H), 7.28 (d, J = 8.8 Hz, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.37 (t, J = 7.0 Hz, 1H), 5.08 (dd, J = 10.9, 8.9 Hz, 1H), 4.44 (dd, J = 13.1, 3.1 Hz, 1H), 4.39 - 4.26 (m, 1H), 4.15 - 3.99 (m, 2H), 3.97 - 3.90 (m, 1H), 3.84 (dd, J = 13.3, 9.4 Hz, 1H), 3.76 (s, 3H), 3.36 (br s, 1H)。

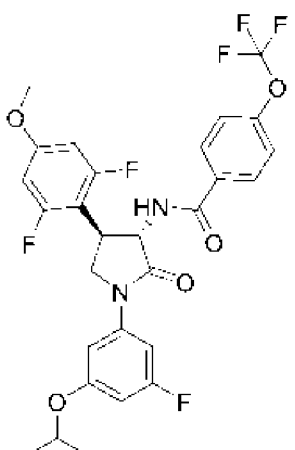
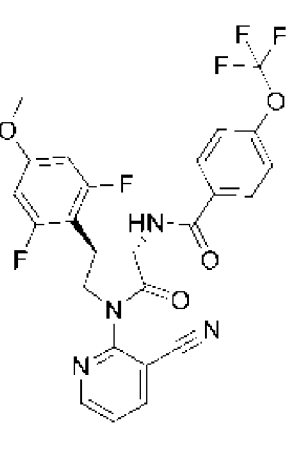
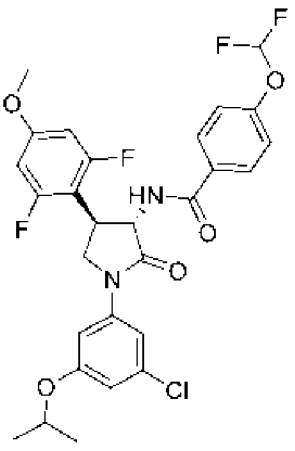
【0128】表2中之以下實例係藉由使用如實例1至5中所示之類似程序及/或熟習此項技術者已知之其修改形式來製得。

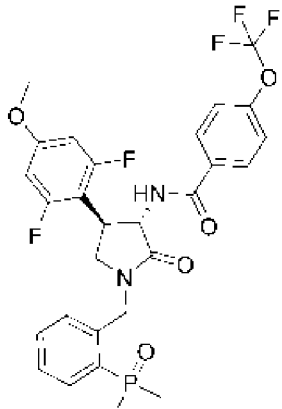
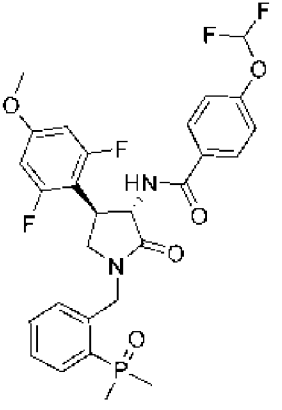
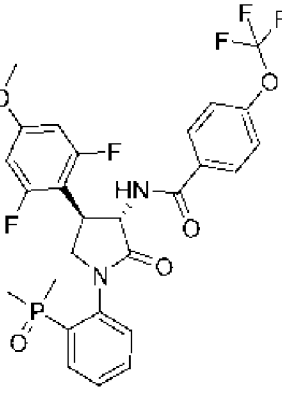
表2

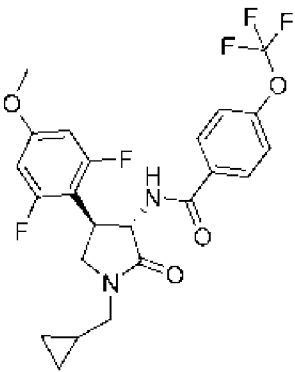
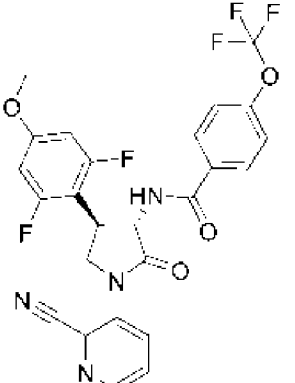
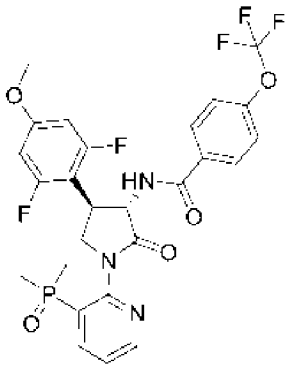
實例	結構	LCMS (M+H)+	HPLC方法，RT (min.)及純度	¹ H NMR
6		549.1	方法D， RT = 2.022 min， 96.2%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.18 (d, <i>J</i> = 8.1 Hz, 1H), 8.50 (d, <i>J</i> = 8.3 Hz, 1H), 7.96 - 7.82 (m, 2H), 7.70 (d, <i>J</i> = 8.1 Hz, 1H), 7.58 - 7.13 (m, 3H), 6.81 (d, <i>J</i> = 10.8 Hz, 2H), 5.06 (m, 1H), 4.46 - 4.33 (m, 1H), 4.31 - 4.20 (m, 1H), 4.17 - 4.08 (m, 1H), 3.78 (s, 3H)。
7		558.1	方法D， RT = 1.907 min， 97.7%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.09 (d, <i>J</i> = 8.6 Hz, 1H), 8.94 - 8.85 (m, 1H), 8.39 (dd, <i>J</i> = 1.6, 7.9 Hz, 1H), 7.95 - 7.83 (m, 2H), 7.73 (dd, <i>J</i> = 5.3, 7.7 Hz, 1H), 7.57 - 7.09 (m, 3H), 6.80 (d, <i>J</i> = 10.8 Hz, 2H), 5.14 (m, 1H), 4.28 (m, 1H), 4.14 (m, <i>J</i> = 9.3 Hz, 1H), 4.02 - 3.94 (m, 1H), 3.77 (s, 3H)。

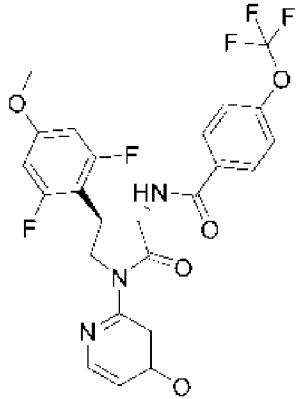
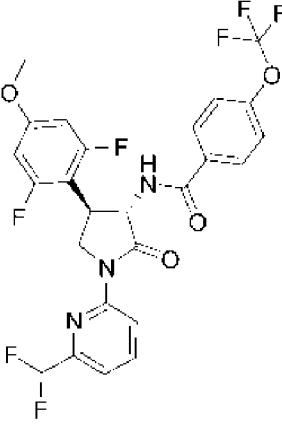
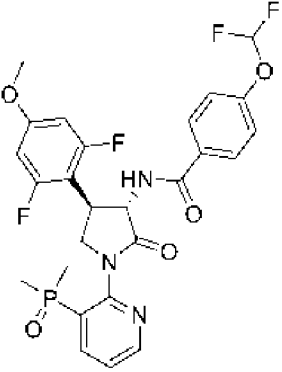
8		555.1	方法D， RT = 2.153 min， 97.9%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.18 (d, <i>J</i> = 8.6 Hz, 1H), 8.05 - 7.87 (m, 2H), 7.50 (d, <i>J</i> = 8.1 Hz, 2H), 7.29 (m, 1H), 7.14 (m, 1H), 6.95 (m, 1H), 6.79 (d, <i>J</i> = 10.8 Hz, 2H), 5.13 (m, 1H), 4.24 - 4.13 (m, 1H), 4.05 (t, <i>J</i> = 8.8 Hz, 1H), 4.01 - 3.90 (m, 1H), 3.77 (s, 3H), 3.51 (s, 3H)。
9		510.2	方法D， RT = 1.931 min， 97.7%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.35 (d, <i>J</i> = 8.3 Hz, 1H), 8.38 (d, <i>J</i> = 4.6 Hz, 1H), 8.03 (d, <i>J</i> = 8.3 Hz, 2H), 7.96 - 7.82 (m, 3H), 7.49 (m, 1H), 6.81 (d, <i>J</i> = 11.0 Hz, 2H), 5.13 (t, <i>J</i> = 9.3 Hz, 1H), 4.33 - 4.16 (m, 2H), 4.15 - 4.03 (m, 1H), 3.78 (s, 3H)。
10		520.1	方法D， RT = 1.583 min， 90.7%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.13 (d, <i>J</i> = 7.8 Hz, 1H), 7.89 (d, <i>J</i> = 8.8 Hz, 2H), 7.57 - 7.12 (m, 4H), 6.81 (d, <i>J</i> = 10.5 Hz, 2H), 6.46 (d, <i>J</i> = 9.3 Hz, 1H), 6.40 (m, 1H), 4.87 - 4.73 (m, 1H), 4.37 - 4.24 (m, 1H), 4.04 (t, <i>J</i> = 8.7 Hz, 1H), 3.99 - 3.92 (m, 1H), 3.78 (s, 3H), 3.45 (br s, 3H)。

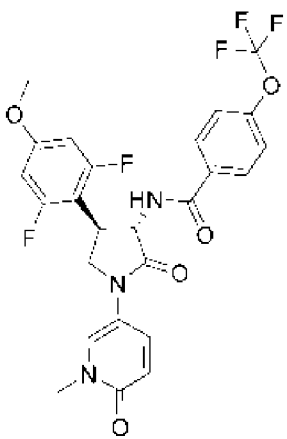
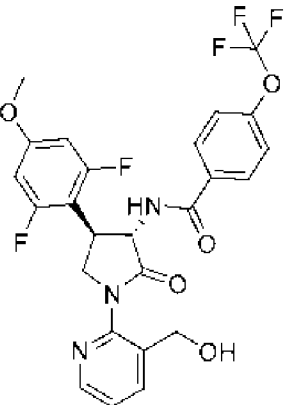
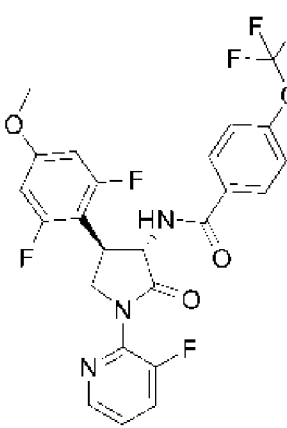
11		538.1	方法D， RT = 1.759 min， 99.2%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.23 (d, <i>J</i> = 8.1 Hz, 1H), 8.03 - 7.88 (m, 2H), 7.57 - 7.45 (m, 3H), 6.82 (d, <i>J</i> = 10.8 Hz, 2H), 6.50 - 6.44 (m, 1H), 6.40 (dd, <i>J</i> = 1.0, 7.1 Hz, 1H), 4.90 - 4.76 (m, 1H), 4.37 - 4.24 (m, 1H), 4.05 (t, <i>J</i> = 8.8 Hz, 1H), 4.00 - 3.92 (m, 1H), 3.78 (s, 3H), 3.44 (br s, 3H)。
12		591	方法D， RT = 2.381 min， 92.5%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.11 (d, <i>J</i> = 8.1 Hz, 1H), 8.20 (s, 1H), 8.11 (s, 1H), 7.95 - 7.83 (m, 2H), 7.69 (s, 1H), 7.55 - 7.12 (m, 3H), 6.81 (d, <i>J</i> = 10.8 Hz, 2H), 5.04 (m, 1H), 4.33 - 4.23 (m, 1H), 4.21 - 4.10 (m, 2H), 3.79 (s, 3H)。
13		584.2	方法D， RT = 1.784 min， 98.7%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.23 (d, <i>J</i> = 8.1 Hz, 1H), 8.72 (d, <i>J</i> = 12.7 Hz, 1H), 8.59 (m, 1H), 7.96 (d, <i>J</i> = 8.8 Hz, 2H), 7.62 - 7.42 (m, 3H), 6.80 (d, <i>J</i> = 10.5 Hz, 2H), 5.03 (m, 1H), 4.47 (t, <i>J</i> = 9.8 Hz, 1H), 4.18 (m, 1H), 4.09 - 3.99 (m, 1H), 3.79 (s, 3H), 1.75 (s, 3H), 1.70 (s, 3H)。

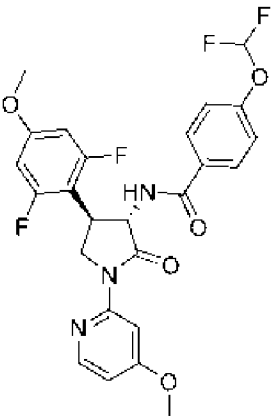
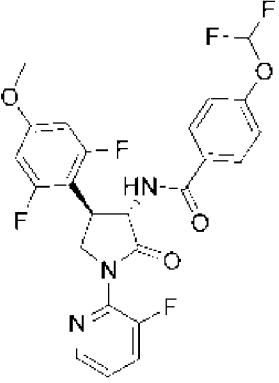
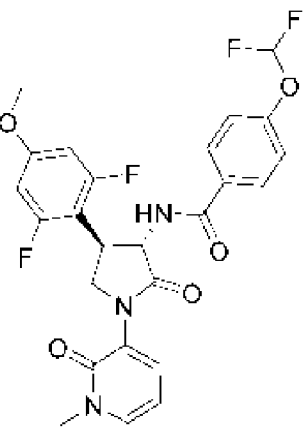
14		583.2	方法D， RT = 1.414 min， 99.8%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.17 (d, <i>J</i> = 8.3 Hz, 1H), 7.95 (d, <i>J</i> = 8.8 Hz, 2H), 7.50 (d, <i>J</i> = 8.3 Hz, 2H), 7.25 (m, 1H), 7.17 (s, 1H), 6.80 (d, <i>J</i> = 10.5 Hz, 2H), 6.70 - 6.61 (m, 1H), 5.06 (m, 1H), 4.66 (m, 1H), 4.23 - 4.05 (m, 2H), 4.04 - 3.94 (m, 1H), 3.78 (s, 3H), 1.28 (d, <i>J</i> = 5.9 Hz, 6H)。
15		533.1	方法D， RT = 1.951 min， 97.8%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.27 (d, <i>J</i> = 8.1 Hz, 1H), 8.81 (m, 1H), 8.45 (m, 1H), 7.96 (d, <i>J</i> = 8.8 Hz, 2H), 7.57 (m, 1H), 7.51 (d, <i>J</i> = 8.3 Hz, 2H), 6.81 (d, <i>J</i> = 10.8 Hz, 2H), 5.11 (m, 1H), 4.49 - 4.37 (m, 1H), 4.26 (q, <i>J</i> = 9.5 Hz, 1H), 4.19 - 4.08 (m, 1H), 3.75 (s, 3H)。
16		529.2	方法D， RT = 2.370 min， 100.0%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.08 - 9.02 (m, 1H), 7.89 (d, <i>J</i> = 8.8 Hz, 2H), 7.46 (m, 1H), 7.31 - 7.26 (m, 3H), 7.16 (s, 1H), 6.87 - 6.71 (m, 3H), 5.11 - 4.97 (m, 1H), 4.67 (m, 1H), 4.25 - 4.06 (m, 2H), 4.05 - 3.96 (m, 1H), 3.78 (s, 3H), 1.27 (d, <i>J</i> = 5.9 Hz, 6H)。

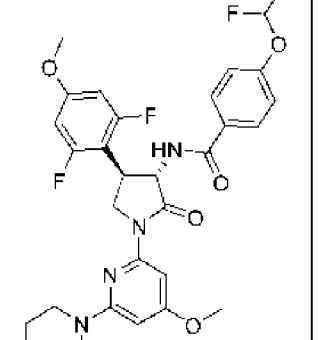
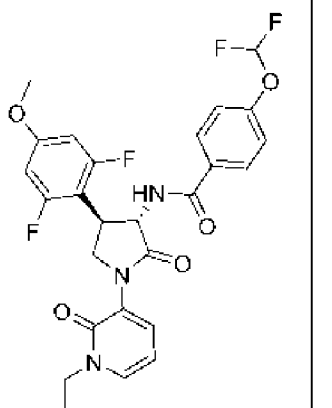
17		597.2	方法D， RT = 1.763 min， 98.4%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.10 (d, <i>J</i> = 8.3 Hz, 1H), 7.96 (d, <i>J</i> = 8.8 Hz, 2H), 7.71 - 7.60 (m, 2H), 7.52 - 7.42 (m, 4H), 6.75 (d, <i>J</i> = 10.8 Hz, 2H), 5.13 - 4.98 (m, 2H), 4.95 - 4.87 (m, 1H), 4.02 (m, 1H), 3.75 (s, 3H), 3.61 (m, 1H), 3.52 - 3.44 (m, 1H), 1.80 (s, 3H), 1.74 (s, 3H)。
18		579.2	方法D， RT = 1.607 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.00 (d, <i>J</i> = 8.1 Hz, 1H), 7.90 (d, <i>J</i> = 8.8 Hz, 2H), 7.71 - 7.60 (m, 2H), 7.50 - 7.41 (m, 2H), 7.35 (s, 1H), 7.29 (d, <i>J</i> = 8.6 Hz, 2H), 6.75 (d, <i>J</i> = 10.5 Hz, 2H), 5.05 (m, 2H), 4.93 - 4.86 (m, 1H), 4.02 (m, 1H), 3.75 (s, 3H), 3.60 (m, 1H), 3.50 - 3.43 (m, 1H), 1.80 (s, 3H), 1.75 (s, 3H)。
19		583.1	方法D， RT = 1.723 min， 93.7%	¹ H NMR (400MHz, DMSO-d ₆) δ = 9.21 - 9.06 (m, 1H), 7.95 (d, <i>J</i> = 8.6 Hz, 2H), 7.89 - 7.79 (m, 1H), 7.74 - 7.66 (m, 1H), 7.60 - 7.52 (m, 1H), 7.52 - 7.44 (m, 3H), 6.85 - 6.72 (m, 2H), 5.12 - 4.90 (m, 1H), 4.31 - 4.16 (m, 1H), 4.13 - 3.89 (m, 2H), 3.77 (s, 3H), 1.86 - 1.58 (m, 6H)。

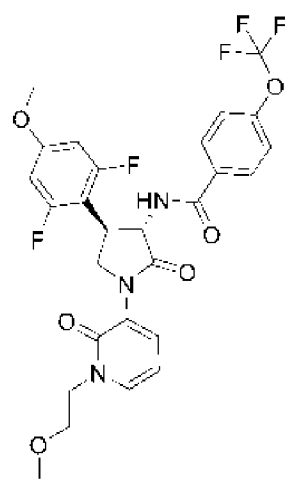
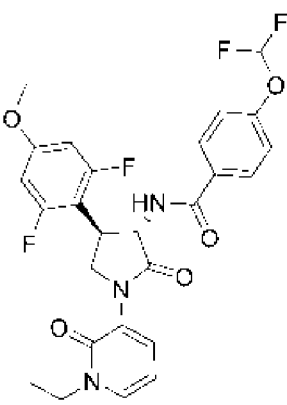
20		485.1	方法D， RT = 1.965 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.01 (d, <i>J</i> = 8.6 Hz, 1H), 7.93 (d, <i>J</i> = 8.8 Hz, 2H), 7.48 (d, <i>J</i> = 8.3 Hz, 2H), 6.78 (s, 1H), 6.75 (s, 1H), 4.96 - 4.89 (m, 1H), 3.93 (m, 1H), 3.77 (s, 3H), 3.76 - 3.72 (m, 1H), 3.64 - 3.56 (m, 1H), 3.31 - 3.25 (m, 1H), 3.07 (m, 1H), 1.02 - 0.89 (m, 1H), 0.51 (d, <i>J</i> = 8.1 Hz, 2H), 0.30 - 0.20 (m, 2H)。
21		533.1	方法D， RT = 1.897 min， 96.7%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.25 (d, <i>J</i> = 8.3 Hz, 1H), 8.72 (m, 1H), 8.25 (m, 1H), 8.02 - 7.93 (m, 2H), 7.90 (m, 1H), 7.51 (d, <i>J</i> = 8.3 Hz, 2H), 6.82 (d, <i>J</i> = 10.8 Hz, 2H), 5.13 (m, 1H), 4.36 - 4.22 (m, 2H), 4.17 - 4.07 (m, 1H), 3.78 (s, 3H)。
22		584.1	方法D， RT = 1.620min， 93.1%	¹ H NMR (400MHz, DMSO-d ₆) δ = 9.16 (d, <i>J</i> = 8.1 Hz, 1H), 8.79 - 8.70 (m, 1H), 8.33-8.31 (m, 1H), 7.95 (d, <i>J</i> = 8.8 Hz, 2H), 7.61 (m, 1H), 7.59 - 7.50 (m, 2H), 6.79 (d, <i>J</i> = 10.8 Hz, 2H), 5.10 - 4.94 (m, 1H), 4.33 - 4.23 (m, 1H), 4.15 - 4.08 (m, 1H), 4.06 - 3.97 (m, 1H), 3.78 (s, 3H), 1.91 - 1.68 (m, 6H)。

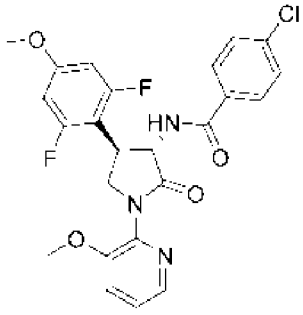
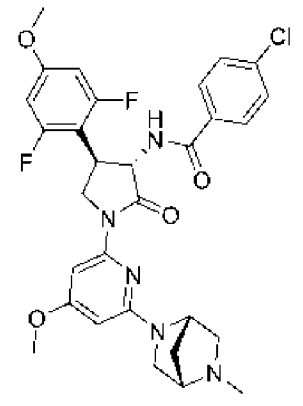
23		538.1	方法D , RT = 2.065 min , 94.0%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.19 (d, <i>J</i> = 8.3 Hz, 1H), 8.25 (d, <i>J</i> = 5.9 Hz, 1H), 8.01 - 7.81 (m, 3H), 7.51 (d, <i>J</i> = 8.3 Hz, 2H), 6.85 (m, 1H), 6.79 (d, <i>J</i> = 10.8 Hz, 2H), 5.08 (m, 1H), 4.44 (m, 1H), 4.12 (m, 1H), 4.03 - 3.94 (m, 1H), 3.85 (s, 3H), 3.78 (s, 3H) °
24		558.1	方法D , RT = 2.223 min , 92.5%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.23 (d, <i>J</i> = 8.1 Hz, 1H), 8.50 (d, <i>J</i> = 8.3 Hz, 1H), 8.09 (m, 1H), 7.96 (d, <i>J</i> = 8.6 Hz, 2H), 7.54 - 7.48 (m, 3H), 6.9 (s, 1 H), 6.82 - 6.74 (m, 2H), 5.11 (m, 1H), 4.46 (m, 1H), 4.17 (m, 1H), 4.06 - 3.96 (m, 1H), 3.78 (s, 3H) °
25		566.2	方法D , RT = 1.594 min , 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.06 (d, <i>J</i> = 7.8 Hz, 1H), 8.82 - 8.68 (m, 1H), 8.41 - 8.28 (m, 1H), 7.89 (d, <i>J</i> = 8.8 Hz, 2H), 7.61 (m, 1H), 7.54 - 7.07 (m, 3H), 6.87 - 6.71 (m, 2H), 5.08 - 4.91 (m, 1H), 4.38 - 4.23 (m, 1H), 4.11 (m, 1H), 4.06 - 3.94 (m, 1H), 3.78 (s, 3H), 1.86 - 1.72 (m, 6H) °

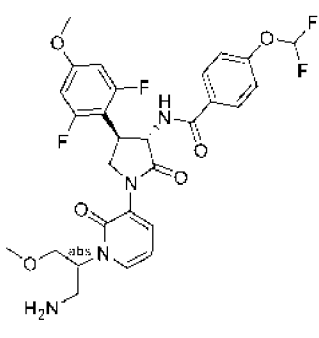
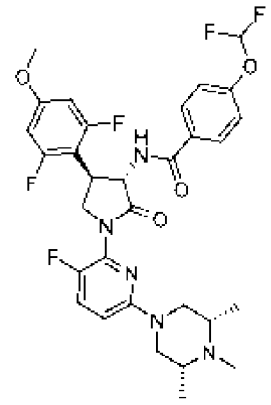
26		538.1	方法D， RT = 1.677 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.13 (d, <i>J</i> = 8.3 Hz, 1H), 8.01 (d, <i>J</i> = 2.9 Hz, 1H), 7.94 (d, <i>J</i> = 8.8 Hz, 2H), 7.87 (m, 1H), 7.50 (d, <i>J</i> = 8.6 Hz, 2H), 6.80 (d, <i>J</i> = 10.8 Hz, 2H), 6.46 (d, <i>J</i> = 9.8 Hz, 1H), 5.08 - 4.91 (m, 1H), 4.12 (m, 1H), 4.00 (m, 1H), 3.94 - 3.87 (m, 1H), 3.78 (s, 3H), 3.45 (s, 3H)。
27		538.1	方法D， RT = 1.874 min， 93.8%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.20 (d, <i>J</i> = 8.3 Hz, 1H), 8.19 (d, <i>J</i> = 8.6 Hz, 1H), 7.96 (d, <i>J</i> = 8.8 Hz, 2H), 7.88 (m, 1H), 7.51 (d, <i>J</i> = 8.3 Hz, 2H), 7.29 (d, <i>J</i> = 7.3 Hz, 1H), 6.80 (d, <i>J</i> = 10.8 Hz, 2H), 5.40 (m, 1H), 5.10 (m, 1H), 4.52 (d, <i>J</i> = 5.9 Hz, 2H), 4.44 (m, 1H), 4.12 (q, <i>J</i> = 9.9 Hz, 1H), 4.01 - 3.98 (m, 1H), 3.78 (s, 3H)。
28		526.1	方法D， RT = 1.926 min， 97.9%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.22 (d, <i>J</i> = 8.3 Hz, 1H), 8.38 (d, <i>J</i> = 4.4 Hz, 1H), 8.03 - 7.78 (m, 3H), 7.57 - 7.39 (m, 3H), 6.80 (d, <i>J</i> = 10.8 Hz, 2H), 5.11(m, 1H), 4.32 - 4.17 (m, 2H), 4.15 - 4.06 (m, 1H), 3.78 (s, 3H)。

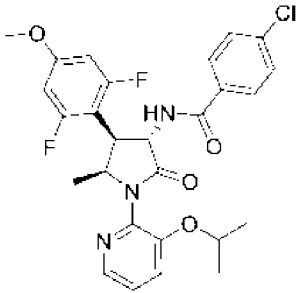
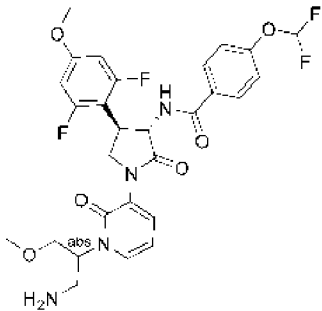
32		520.1	方法D， RT = 1.886 min， 94.2%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.09 (d, <i>J</i> = 8.1 Hz, 1H), 8.25 (d, <i>J</i> = 5.9 Hz, 1H), 7.96 (d, <i>J</i> = 2.2 Hz, 1H), 7.92 - 7.86 (m, 2H), 7.36 (s, 1H), 7.29 (d, <i>J</i> = 8.8 Hz, 2H), 6.85 (m, 1H), 6.79 (d, <i>J</i> = 10.5 Hz, 2H), 5.06 (dd, <i>J</i> = 8.1, 11.0 Hz, 1H), 4.47 - 4.40 (m, 1H), 4.17 - 4.08 (m, 1H), 4.03 - 3.94 (m, 1H), 3.86 (s, 3H), 3.78 (s, 3H)。
33		508.1	方法D， RT = 1.790 min， 90.9%	¹ H NMR (400MHz, DMSO-d ₆) δ = 9.12 (d, <i>J</i> =8.6 Hz, 1H), 8.38 (d, <i>J</i> =4.6 Hz, 1H), 7.96 - 7.84 (m, 3H), 7.56 - 7.13 (m, 4H), 6.80 (d, <i>J</i> =10.8 Hz, 2H), 5.17 - 5.01 (m, 1H), 4.32 - 4.17 (m, 2H), 4.15 - 4.03 (m, 1H), 3.78 (s, 3H)。
34		520.2	方法D， RT = 1.564 min， 99.4%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.01 (d, <i>J</i> = 8.8 Hz, 1H), 7.96 - 7.82 (m, 2H), 7.76 (m, 1H), 7.59 (m, 1H), 7.55 - 7.11 (m, 3H), 6.77 (d, <i>J</i> = 10.8 Hz, 2H), 6.33 (m, 1H), 5.11 (m, 1H), 4.17 - 4.03 (m, 1H), 3.98 (m, 2H), 3.77 (s, 3H), 3.51 (s, 3H)。

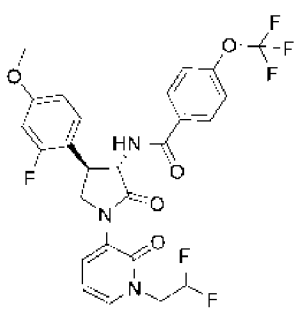
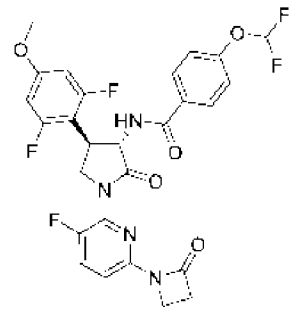
35		618.3	方法D， RT = 1.881 min， 94.8%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.05 (d, <i>J</i> = 8.3 Hz, 1H), 7.89 (d, <i>J</i> = 8.8 Hz, 2H), 7.55 - 7.13 (m, 4H), 6.79 (d, <i>J</i> = 10.5 Hz, 2H), 6.14 (d, <i>J</i> = 1.5 Hz, 1H), 5.08 (m, 1H), 4.43 (m, 1H), 4.06 (m, 1H), 3.92 - 3.84 (m, 1H), 3.79 (d, <i>J</i> = 7.6 Hz, 6H), 3.48 (m, 4H), 2.49 - 2.35 (m, 4H), 2.25 (s, 3H) °
36		564.2	方法D， RT = 1.640 min， 97.8%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.02 (d, <i>J</i> = 8.6 Hz, 1H), 7.93 - 7.83 (m, 2H), 7.67 (dd, <i>J</i> = 6.8, 2.0 Hz, 1H), 7.60 (dd, <i>J</i> = 7.3, 2.0 Hz, 1H), 7.34 (t, <i>J</i> = 73.6 Hz, 1H), 7.27 (d, <i>J</i> = 8.8 Hz, 2H), 6.77 (d, <i>J</i> = 10.8 Hz, 2H), 6.33 (t, <i>J</i> = 7.0 Hz, 1H), 5.12 (dd, <i>J</i> = 11.0, 8.6 Hz, 1H), 4.20 - 4.03 (m, 3H), 4.02 - 3.94 (m, 2H), 3.77 (s, 3H), 3.60 (t, <i>J</i> = 5.3 Hz, 2H), 3.25 (s, 3H) °

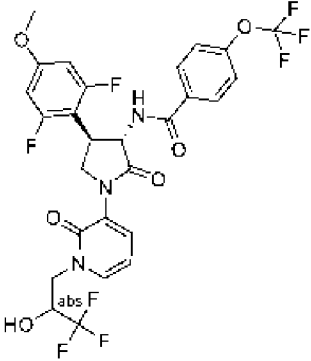
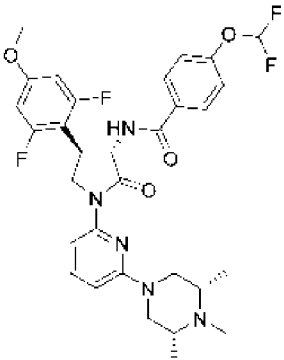
37		582.2	方法D， RT = 1.808 min， 95.8%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.13 (d, <i>J</i> = 8.6 Hz, 1H), 8.00 - 7.87 (m, 2H), 7.67 (dd, <i>J</i> = 6.8, 2.0 Hz, 1H), 7.60 (dd, <i>J</i> = 7.3 Hz, 2.0, 1H), 7.49 (d, <i>J</i> = 7.8 Hz, 2H), 6.78 (d, <i>J</i> = 10.8 Hz, 2H), 6.33 (t, <i>J</i> = 7.0 Hz, 1H), 5.13 (dd, <i>J</i> = 11.0, 8.6 Hz, 1H), 4.19 - 3.93 (m, 5H), 3.77 (s, 3H), 3.60 (t, <i>J</i> = 5.3 Hz, 2H), 3.25 (s, 3H)。
38		534.2	方法D， RT = 1.651 min， 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.02 (d, <i>J</i> = 8.6 Hz, 1H), 7.94 - 7.84 (m, 2H), 7.77 (dd, <i>J</i> = 6.8, 2.0 Hz, 1H), 7.58 (dd, <i>J</i> = 7.1, 2.0 Hz, 1H), 7.34 (t, <i>J</i> = 73.6 Hz, 1H), 7.27 (d, <i>J</i> = 8.6 Hz, 2H), 6.77 (d, <i>J</i> = 10.8 Hz, 2H), 6.35 (t, <i>J</i> = 7.0 Hz, 1H), 5.12 (dd, <i>J</i> = 11.0, 8.6 Hz, 1H), 4.16 - 4.04 (m, 1H), 4.02 - 3.92 (m, 4H), 3.77 (s, 3H), 1.25 (t, <i>J</i> = 7.1 Hz, 3H)。

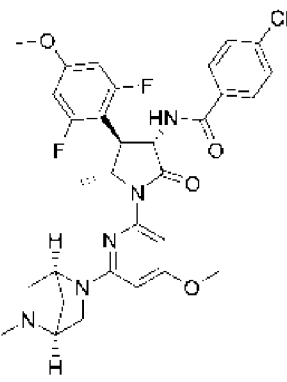
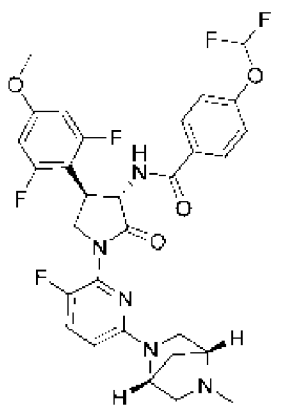
39		488.1	方法D， RT = 1.73 min，99%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.14 (d, J = 8.8 Hz, 1H), 8.10 (dd, J = 4.6, 1.2 Hz, 1H), 7.90 - 7.77 (m, 2H), 7.64 (dd, J = 8.4, 1.2 Hz, 1H), 7.61 - 7.53 (m, 2H), 7.44-7.41 (m, 1H), 6.79 (d, J = 10.8 Hz, 2H), 5.22 (dd, J = 11.1, 8.9 Hz, 1H), 4.23 - 4.11 (m, 1H), 4.05 (t, J = 8.9 Hz, 1H), 3.93 - 3.89 (m, 1H), 3.87 (s, 3H) 3.77 (s, 3H)。
40		598.2	方法D， RT = 1.68 min， 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.11 (d, J = 8.3 Hz, 1H), 7.84 - 7.82 (m, 2H), 7.59 - 7.56 (m, 2H), 7.22 (d, J = 2.0 Hz, 1H), 6.79 (d, J = 10.8 Hz, 2H), 5.80 (s, 1H), 5.11 - 5.06 (m, 1H), 4.59 (br s, 1H), 4.45 (t, J = 9.9 Hz, 1H), 4.08 - 3.98 (m, 1H), 3.90 - 3.81 (m, 2H), 3.78 (s, 3H), 3.77 (s, 3H), 3.45 - 3.38 (m, 2H), 3.25 - 3.22 - 3.19 (m, 1H), 2.82 - 2.76 (m, 1H), 2.24 (s, 3H), 1.83 - 1.79 (m, 1H), 1.71 - 1.63 (m, 1H)。

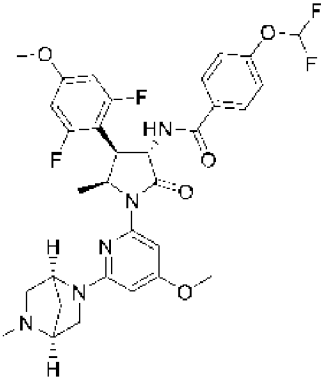
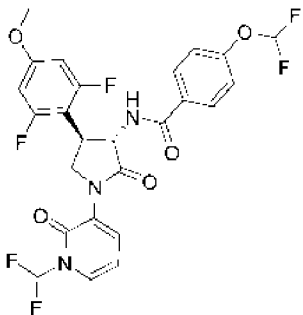
41		593.3	方法D， RT = 1.424 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.00 (d, J = 8.8 Hz, 1H), 7.96 - 7.81 (m, 2H), 7.68 (dd, J = 7.0, 1.8, Hz, 1H), 7.55 (dd, J = 7.2, 1.8 Hz, 1H), 7.34 (t, J = 73.6 Hz, 1H), 7.28 (d, J = 8.8 Hz, 2H), 6.76 (d, J = 10.8 Hz, 2H), 6.34 (t, J = 7.1 Hz, 1H), 5.10 (dd, J = 10.8, 8.6 Hz, 1H), 5.01 - 4.88 (m, 1H), 4.15 - 4.03 (m, 1H), 4.03 - 3.89 (m, 2H), 3.80 - 3.71 (m, 4H), 3.61 (dd, J = 10.5, 4.4 Hz, 1H), 3.34 (br s, 2H), 3.23 (s, 3H), 2.95 - 2.81 (m, 2H)。
42		634.2	方法D， RT = 2.634 min，99%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.13 - 9.04 (m, 1H), 7.93 - 7.84 (m, 2H), 7.70 - 7.57 (m, 1H), 7.34 (t, J = 72 Hz, 1H), 7.29 - 7.27 (m, 2H), 6.89 - 6.74 (m, 3H), 5.16 - 5.07 (m, 1H), 4.26 - 4.15 (m, 2H), 4.06 - 3.93 (m, 3H), 3.76 (s, 3H), 2.56 - 2.47 (m, 2H), 2.17 (s, 3H), 2.16 - 2.10 (m, 2H), 1.12 - 1.03 (d, J = 6 Hz, 6H)。

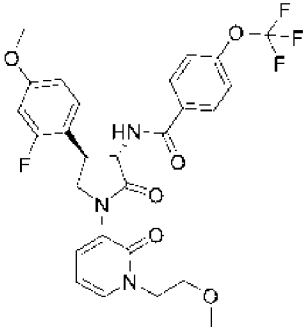
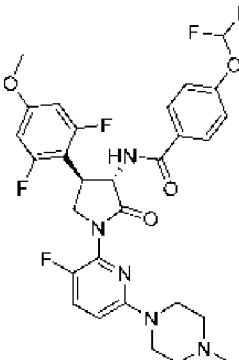
43		529.15	方法D， RT = 1.97 min，97%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.96 (d, J = 8.6 Hz, 1H), 8.07 (dd, J = 4.6, 1.2 Hz, 1H), 7.90 - 7.79 (m, 2H), 7.61 (d, J = 7.3 Hz, 1 H), 7.57 - 7.49 (m, 2H), 7.37 (dd, J = 8.3, 4.6 Hz, 1H), 6.84 - 6.70 (m, 2H), 5.60 (dd, J = 11.5, 8.8 Hz, 1H), 4.74-4.68 (m, 1H), 4.54 - 4.44 (m, 1H), 4.40-4.35 (m, 1H), 3.77 (s, 3H), 1.28 (d, J = 6.0 Hz, 3H), 1.27 (d, J = 6.0 Hz, 3H), 0.90 (d, J = 6.6 Hz, 3H)。
44		593.3	方法D， RT = 1.427 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.11 (d, J = 8.6 Hz, 1H), 7.95 (d, J = 8.8 Hz, 2H), 7.68 (dd, J = 7.0, 1.8 Hz, 1H), 7.56 (dd, J = 7.1, 1.8 Hz, 1H), 7.34 (t, J = 73.6 Hz, 1H), 7.28 (d, J = 8.8 Hz, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.34 (t, J = 7.1 Hz, 1H), 5.13 (dd, J = 10.8, 8.8 Hz, 1H), 5.02 - 4.90 (m, 1H), 4.15 - 3.88 (m, 3H), 3.81 - 3.70 (m, 4H), 3.61 (dd, J = 10.8, 4.4 Hz, 1H), 3.35 - 3.33 (br s, 2H), 3.20 (s, 3H), 2.96 - 2.84 (m, 2H)。

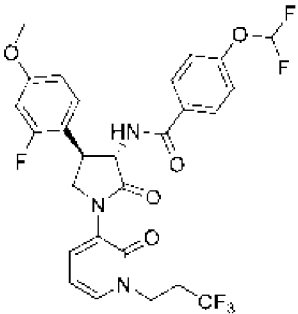
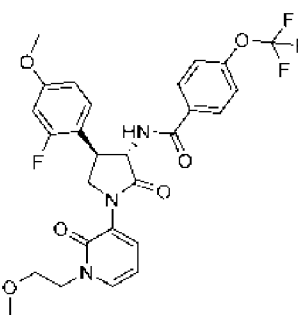
45		570.2	方法D， RT = 1.84 min， 96.7%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.06 (d, J = 8.8 Hz, 1H), 8.01 - 7.91 (m, 2H), 7.72 (dd, J = 7.0, 1.8 Hz, 1H), 7.66 (dd, J = 7.1, 1.8 Hz, 1H), 7.55 - 7.35 (m, 3H), 6.89 - 6.74 (m, 2H), 6.43 - 6.40 (m, 1H), 6.35 (t, J = 57.6 Hz, 1H), 5.14 (dd, J = 11.4, 8.7 Hz, 1H), 4.49 - 4.43 (m, 2H), 4.20 - 4.09 (m, 1H), 4.07 - 3.97 (m, 1H), 3.76 (s, 3H), 3.75 - 3.67 (m, 1H)。
46		577.2	方法D， RT = 1.862 min，99%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.12 (d, J = 8.3 Hz, 1H), 8.01 - 7.74 (m, 3H), 7.74 - 7.28 (m, 3H), 7.36 (t, J = 72 Hz, 1H), 6.81 (d, J = 10.8 Hz, 2H), 5.11 (m, 1H), 4.33 - 4.15 (m, 2H), 4.12 - 3.98 (m, 1H), 3.78 (s, 3H), 3.76 - 3.57 (m, 2H), 3.13 (t, J = 4.4 Hz, 2H)。

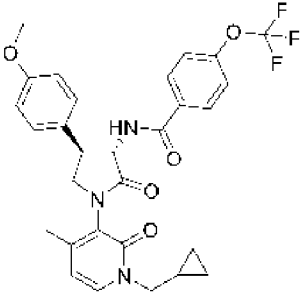
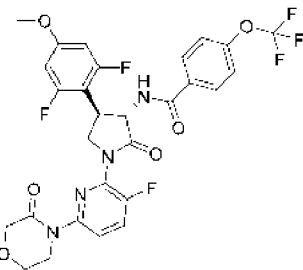
47		636.2	方法D， RT = 1.904 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.18 - 9.04 (m, 1H), 7.99 - 7.86 (m, 2H), 7.70 (dd, J = 6.8, 2.0 Hz, 1H), 7.66 (dd, J = 7.3, 2.0 Hz, 1H), 7.53 - 7.39 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.37 (t, J = 7.0 Hz, 1H), 5.16 - 5.02 (m, 1H), 4.45 (dd, J = 13.2, 2.9 Hz, 1H), 4.37 - 4.25 (m, 1H), 4.19 - 3.98 (m, 2H), 3.98 - 3.80 (m, 2H), 3.76 (s, 3H), 3.35 - 3.33 (brs, 1H)。
48		616.3	方法D， RT = 1.939 min，99%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.07 (d, J = 8.3 Hz, 1H), 7.94 - 7.82 (m, 2H), 7.64 - 7.56 (m, 2H), 7.36 (t, J = 72 Hz, 1H), 7.29 - 7.27 (m, 2H), 6.86 - 6.73 (m, 2H), 6.63 (dd, J = 6.1, 2.9 Hz, 1H), 5.07 (dd, J = 11.0, 9.0 Hz, 1H), 4.51 - 4.39 (m, 1H), 4.14 - 3.98 (m, 3H), 3.97 - 3.87 (m, 1H), 3.78 (s, 3H), 3.34 - 3.28 (m, 2H), 2.17 (s, 3H), 2.17 - 2.03 (m, 2H), 1.06 (d, J = 5.9 Hz, 6H)。

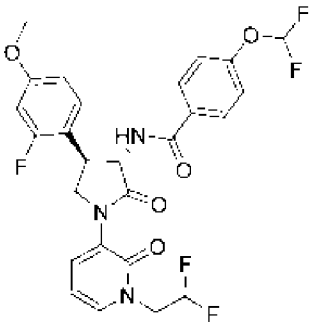
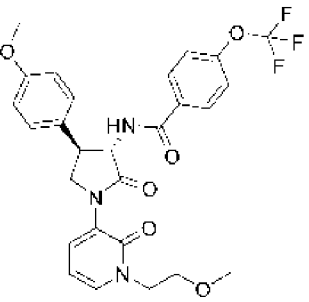
49		612.3	方法D， RT = 1.74 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.11 (d, J = 8.6 Hz, 1H), 7.84 (d, J = 8.4 Hz, 2H), 7.57 (d, J = 8.4 Hz, 2H), 6.90 - 6.69 (m, 3H), 5.85 (s, 1H), 4.99 (dd, J = 10.8, 8.3 Hz, 1H), 4.61 - 4.38 (m, 2H), 3.79 (s, 3H), 3.78 (s, 3H), 3.64-3.61 (m, 2H), 3.45 - 3.42 (m, 1H), 3.23 - 3.21 (m, 1H), 2.80 (dd, J = 9.3, 2.0 Hz, 1H), 2.42-2.44 (m, 1H), 2.25 (s, 3H), 1.92 - 1.77 (m, 1H), 1.71-1.68 (m, 1H), 1.36 (d, J = 5.9 Hz, 3H)。
50		618.2	方法D， RT = 2.407 min，96%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.10 - 9.03 (m, 1H), 7.93 - 7.86 (m, 2H), 7.59 - 7.56 (m, 1H), 7.35 (t, J = 72 Hz, 1H), 7.29 - 7.27 (m, 2H), 6.84 - 6.74 (m, 2H), 6.51 - 6.43 (m, 1H), 5.17 - 5.07 (m, 1H), 4.55 - 4.48 (m, 1H), 4.20 - 4.11 (m, 2H), 4.02 - 3.93 (m, 1H), 3.77 (s, 3H), 3.44 - 3.38 (m, 3H), 2.83 - 2.76 (m, 1H), 2.47 - 2.39 (m, 1H), 2.25 (s, 3H), 1.87 - 1.82 (m, 1H), 1.74 - 1.69 (m, 1H)。

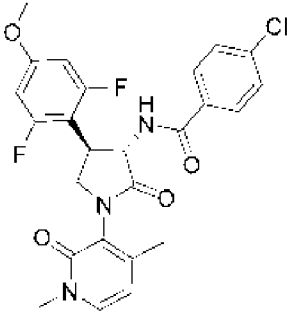
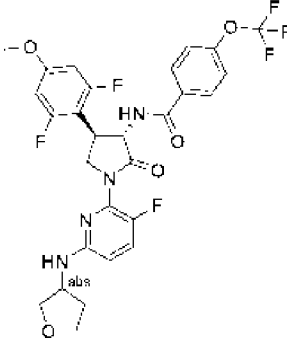
51		644.3	方法D， RT = 1.69 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.86 (d, <i>J</i> = 8.6 Hz, 1H), 7.93 - 7.82 (m, 2H), 7.35 (t, <i>J</i> = 73.6 Hz, 1H), 7.27 - 7.25 (m, 3H), 6.87 - 6.70 (m, 2H), 5.78 (d, <i>J</i> = 1.7 Hz, 1H), 5.65 (dd, <i>J</i> = 12.8, 8.4 Hz, 1H), 4.94 - 4.83 (m, 1H), 4.58 - 4.53 (m, 1H), 4.26 - 4.21 (m, 1H), 3.77 (s, 3H), 3.76 (s, 3H), 3.43 - 3.37 (m, 1H), 3.40 - 3.36 (m, 1H), 3.26 - 3.24 (m, 1H), 2.79-2.76 (m, 1H), 2.46 - 2.37 (m, 1H), 2.27 (s, 3H), 1.82 - 1.7 (m, 1H), 1.75 - 1.64 (m, 1H), 1.18 (d, <i>J</i> = 6.4 Hz, 3H)。
52		556.2	方法D， RT = 1.764 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.02 (d, <i>J</i> = 8.6 Hz, 1H), 7.92 (t, <i>J</i> = 59.2 Hz, 1H) 7.92 (t, <i>J</i> = 67.2 Hz, 1H), 7.89 - 7.74 (m, 3H), 7.34 (t, <i>J</i> = 73.6 Hz, 1H) 7.28 (d, <i>J</i> = 8.4 Hz, 2H), 6.78 (d, <i>J</i> = 10.8 Hz, 2H), 6.56 (t, <i>J</i> = 7.2 Hz, 1H), 5.08 (dd, <i>J</i> = 11.0, 8.6 Hz, 1H), 4.20 - 4.07 (m, 1H), 4.06 - 3.94 (m, 2H), 3.77 (s, 3H)。

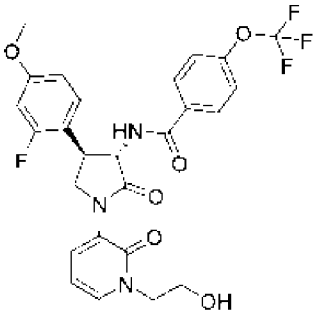
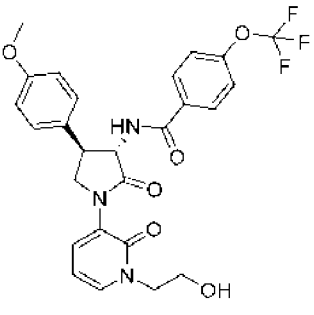
53		564.3	方法D， RT = 1.70 min， 94.9%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.64 (d, J = 8.0 Hz, 1H), 7.81 - 7.55 (m, 4H), 7.50 - 7.23 (m, 3H), 6.79 - 6.57 (m, 2H), 6.36 (t, J = 7.0 Hz, 1H), 5.24 - 5.11 (m, 1H), 4.23 - 4.04 (m, 5H), 3.72 (s, 3H), 3.66 - 3.57 (m, 2H), 3.24 (s, 3H)。
54		606.2	方法D， RT = 1.805 min，97%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.07 (br d, J = 8.1 Hz, 1H), 7.93 - 7.82 (m, 2H), 7.63 (t, J = 9.3 Hz, 1H), 7.34 (t, J = 72 Hz, 1H), 7.29 - 7.6 (m, 2H), 6.86 - 6.73 (m, 3H), 5.12 (t, J = 9.4 Hz, 1H), 4.25 - 4.13 (m, 2H), 4.03 - 3.94 (m, 1H), 3.78 (s, 3H), 3.48 - 3.42 (m, 4H), 2.48 - 2.36 (m, 4H), 2.25 (s, 3H)。

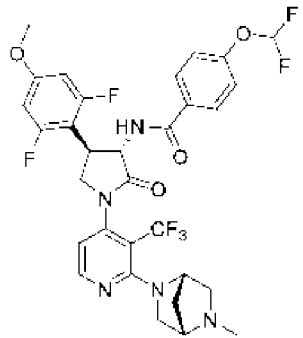
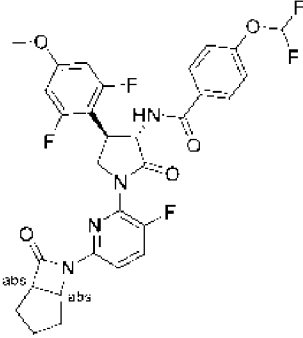
55		584.2	方法D， RT = 1.81 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.95 (d, J = 8.8 Hz, 1H), 7.96 - 7.85 (m, 2H), 7.77 (dd, J = 6.8, 2.0 Hz, 1H), 7.63 (dd, J = 7.3, 2.0 Hz, 1H), 7.51 (d, J = 8.1 Hz, 1H), 7.35 (t, J = 72.0 Hz, 1H), 7.32 - 7.23 (m, 2H), 6.86 - 6.74 (m, 2H), 6.38 (t, J = 7.1 Hz, 1H), 5.13 (dd, J = 11.5, 8.8 Hz, 1H), 4.30 - 4.09 (m, 3H), 4.04 - 3.94 (m, 1H), 3.74 (s, 3H), 3.73 - 3.64 (m, 1H), 2.84 - 2.70 (m, 2H)。
56		564.2	方法D， RT = 1.75 min， 98.9%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.06 (d, J = 8.8 Hz, 1H), 8.04 - 7.88 (m, 2H), 7.65 (dd, J = 6.7, 2.1 Hz, 1H), 7.59 (dd, J = 7.1, 2.0 Hz, 1H), 7.55 - 7.37 (m, 3H), 6.90 - 6.70 (m, 2H), 6.32 (t, J = 7.0 Hz, 1H), 5.14 (dd, J = 11.2, 8.8 Hz, 1H), 4.22 - 4.06 (m, 3H), 4.05 - 3.94 (m, 1H), 3.74 (s, 3H), 3.72 - 3.65 (m, 1H), 3.60 (t, J = 5.3 Hz, 2H), 3.25 (s, 3H)。

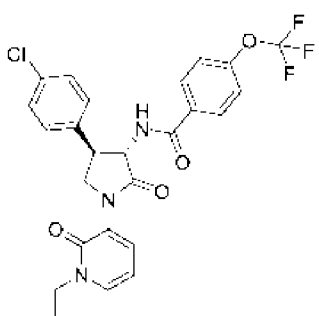
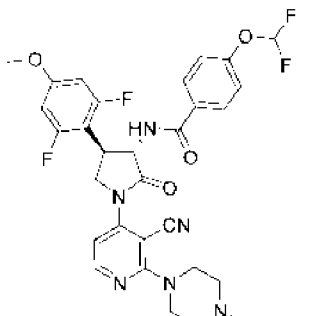
57		556.3	方法D， RT = 1.881 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.05 (t, J = 8.6 Hz, 1H), 8.06 - 7.91 (m, 2H), 7.75 - 7.60 (m, 1H), 7.57 - 7.42 (m, 2H), 7.42 - 7.22 (m, 2H), 6.91 (dd, J = 13.8, 8.7 Hz, 2H), 6.22 (d, J = 6.8 Hz, 1H), 5.28 - 4.66 (m, 1H), 4.14 - 3.78 (2s, 3H), 3.77 - 3.64 (m, 5H), 2.21 - 2.07 (2s, 3H), 1.27 - 1.08 (m, 1H), 0.55 - 0.43 (m, 2H), 0.44 - 0.32 (m, 2H)。(可互相轉化之阻轉異構物之混合物)
58		625.2	方法D， RT = 1.87 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.23 (d, J = 8.5 Hz, 1H), 8.07 - 8.00 (m, 1H), 7.99 - 7.87 (m, 3H), 7.55 - 7.45 (m, 2H), 6.80 (d, J = 10.5 Hz, 2H), 5.15-5.10 (m, 1H), 4.33 - 4.18 (m, 4H), 4.12 - 4.04 (m, 1H), 4.02 - 3.88 (m, 4H), 3.90 (s, 3H)。

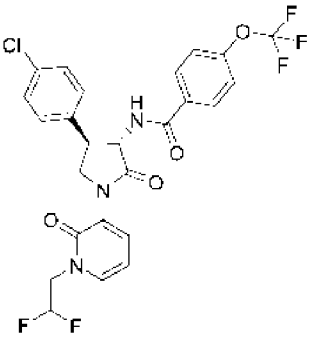
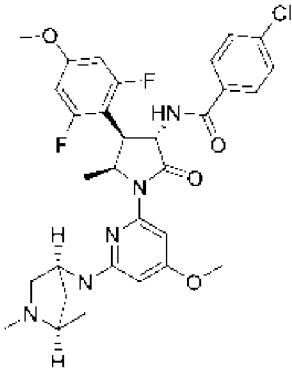
59		552.2	方法D， RT = 1.75 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.96 (d, J = 8.8 Hz, 1H), 7.96 - 7.86 (m, 2H), 7.72 (dd, J = 6.8, 2.0 Hz, 1H), 7.66 (dd, J = 7.3, 2.0 Hz, 1H), 7.55 - 7.49 (m, 1H), 7.35 (t, J = 73.6 Hz, 1H), 7.33 - 7.25 (m, 2H), 6.85 - 6.75 (m, 2H), 6.42 (t, J = 7.2 Hz, 1H), 6.35 (t, J = 57.6 Hz, 1H), 5.13 (dd, J = 11.4, 8.7 Hz, 1H), 4.53 - 4.37 (m, 2H), 4.20 - 4.10 (m, 1H), 4.05 - 3.95 (m, 1H), 3.74 (s, 3H), 3.70 (t, J = 9.5 Hz, 1H)。
60		546.2	方法D， RT = 1.69 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.02 (d, J = 8.6 Hz, 1H), 8.08 - 7.91 (m, 2H), 7.64 (dd, J = 6.8, 2.0 Hz, 1H), 7.59 (dd, J = 7.3, 2.0 Hz, 1H), 7.51 - 7.43 (m, 2H), 7.41 - 7.30 (m, 2H), 7.01 - 6.83 (m, 2H), 6.32 (t, J = 7.0 Hz, 1H), 5.02 (dd, J = 11.1, 8.7 Hz, 1H), 4.19 - 4.04 (m, 3H), 3.82 - 3.67 (m, 5H), 3.60 (t, J = 5.3 Hz, 2H), 3.25 (s, 3H)。

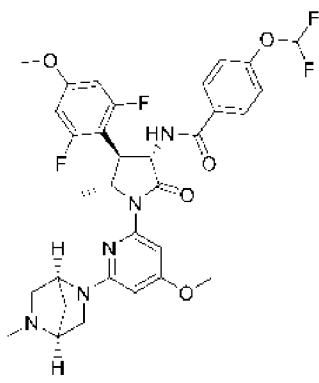
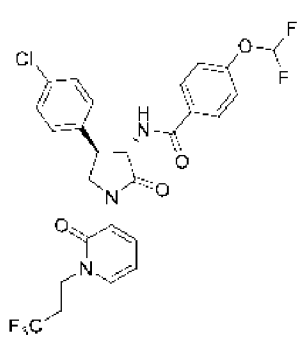
61		502.1	方法D， RT = 1.606 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.19 - 8.95 (m, 1H), 7.90 - 7.80 (m, 2H), 7.71 - 7.62 (m, 1H), 7.60 - 7.44 (m, 2H), 6.82 - 6.69 (m, 2H), 6.25 - 6.16 (m, 1H), 5.34 - 4.84 (m, 1H), 4.27 - 4.05 (m, 2H), 3.79 - 3.70 (2s, 3H), 3.53 - 3.38 (m, 4H), 2.22 - 1.98 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)
62		611.2	方法D， RT = 1.99 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.18 (d, J = 8.6 Hz, 1H), 8.03 - 7.87 (m, 2H), 7.54 - 7.40 (m, 3H), 6.97 (d, J = 5.6 Hz, 1H), 6.79 (d, J = 11.0 Hz, 2H), 6.47 (dd, J = 8.8, 2.7 Hz, 1H), 5.16 - 5.05 (m, 1H), 4.27 - 4.09 (m, 3H), 4.04 - 3.94 (m, 1H), 3.89 (dd, J = 8.8, 5.9 Hz, 1H), 3.85 - 3.77 (m, 1H), 3.76 (s, 3H), 3.73 - 3.69 (m, 1H), 3.51 - 3.47 (m, 1H), 2.23 - 2.08 (m, 1H), 1.82 - 1.71 (m, 1H)。

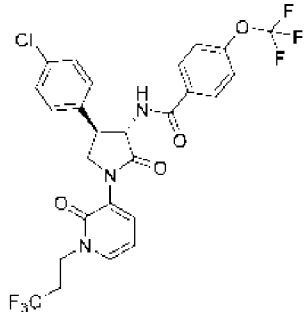
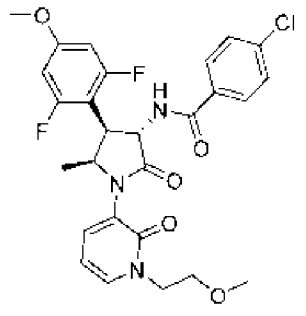
63		550.2	方法D， RT = 1.62 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.04 (d, J = 8.8 Hz, 1H), 8.05 - 7.84 (m, 2H), 7.64 (dd, J = 6.8, 2.0 Hz, 1H), 7.59 (dd, J = 7.3, 2.0 Hz, 1H), 7.54 - 7.43 (m, 3H), 6.89 - 6.71 (m, 2H), 6.31 (t, J = 7.0 Hz, 1H), 5.13 (dd, J = 11.4, 8.7 Hz, 1H), 4.92 (t, J = 5.4 Hz, 1H), 4.18 - 4.09 (m, 1H), 4.05 - 3.92 (m, 1H), 4.07 - 3.92 (m, 2H), 3.74 (s, 3H), 3.71 (br d, J = 9.5 Hz, 1H), 3.68 - 3.59 (m, 2H)。
64		532.2	方法D， RT = 2.147 min，99%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.02 (d, J = 8.5 Hz, 1H), 8.06 - 7.95 (m, 2H), 7.62 (m, 2H), 7.48 (d, J = 8.0 Hz, 2H), 7.40 - 7.31 (m, 2H), 6.95 - 6.85 (m, 2H), 6.36 - 6.28 (m, 1H), 5.06 - 4.95 (m, 1H), 4.93- 4.89 (m, 1H), 4.16 - 3.98 (m, 3H), 3.78 - 3.67 (m, 5H), 3.65 - 3.60 (m, 2H)。

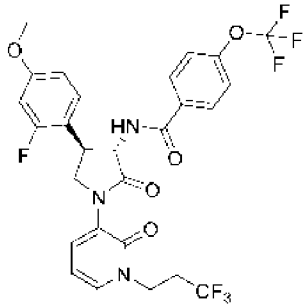
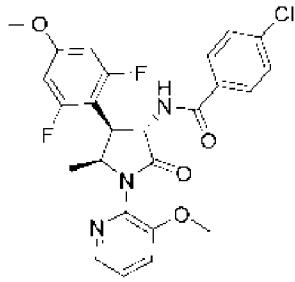
65		668.2	方法D， RT = 1.68 min， 98.5%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.06 (br d, J = 8.1 Hz, 1H), 8.34 (d, J = 4.9 Hz, 1H), 7.89 (d, J = 8.8 Hz, 2H), 7.36 (t, J = 73.6 Hz, 1H), 7.28 (d, J = 8.4 Hz, 2H), 6.86 (br d, J = 4.9 Hz, 1H), 6.80 (br d, J = 10.8 Hz, 2H), 5.09 - 4.89 (m, 1H), 4.23 - 4.12 (m, 1H), 4.09 - 3.98 (m, 1H), 3.98 - 3.86 (m, 1H), 3.77 (s, 3H), 3.57 - 3.41 (m, 2H), 3.30 - 3.20 (m, 2H), 2.85 - 2.69 (m, 2H), 2.30 (br s, 3H), 1.96 - 1.84 (m, 1H), 1.80 - 1.64 (m, 1H)。
66		617.2	方法D， RT = 2.009 min，95%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.11 (d, J = 8.6 Hz, 1H), 7.97 - 7.81 (m, 3H), 7.58 (dd, J = 2.8, 8.7 Hz, 1H), 7.34 (t, J = 73.6 Hz, 1H), 7.29 - 7.27 (m, 2H), 6.87 - 6.68 (m, 2H), 5.17 - 5.05 (m, 1H), 4.58 (t, J = 3.7 Hz, 1H), 4.28 - 4.14 (m, 2H), 4.09 - 4.03 (m, 1H), 3.77 (s, 3H), 3.68 - 3.62 (m, 1H), 2.27 - 2.21 (m, 1H), 1.97 - 1.89 (m, 1H), 1.85 - 1.78 (m, 1H), 1.72 - 1.63 (m, 1H), 1.56 - 1.37 (m, 2H)。

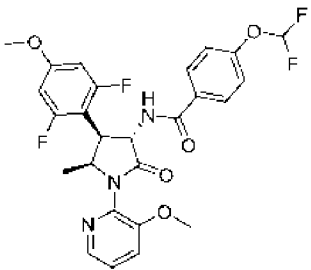
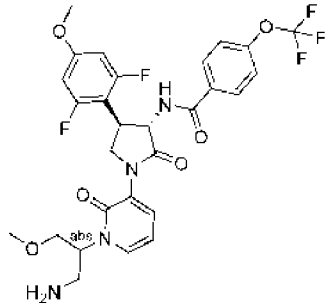
67		520.2	方法D， RT = 1.899 min， 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.07 (d, J = 8.6 Hz, 1H), 8.03 - 7.91 (m, 2H), 7.75 (dd, J = 6.6, 2.0 Hz, 1H), 7.58 (dd, J = 7.2, 2.1 Hz, 1H), 7.53 - 7.44 (m, 4H), 7.44 - 7.32 (m, 2H), 6.35 (t, J = 7.0 Hz, 1H), 5.05 (dd, J = 10.9, 8.7 Hz, 1H), 4.22 - 4.11 (m, 1H), 4.04 - 3.88 (m, 2H), 3.88 - 3.70 (m, 2H), 1.24 (t, J = 7.1 Hz, 3H)。
68		613.2	方法D， RT = 1.76 min，99%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.15 (d, J = 8.3 Hz, 1H), 8.43 (d, J = 5.6 Hz, 1H), 7.89 (d, J = 8.8 Hz, 2H), 7.35 (t, J = 73.2 Hz, 1H), 7.27 (d, J = 8.4 Hz, 2H), 7.12 (d, J = 5.4 Hz, 1H), 6.90 - 6.72 (m, 2H), 5.14 - 4.98 (m, 1H), 4.32 - 4.02 (m, 3H), 3.91 (s, 3H), 3.83 - 3.72 (m, 4H), 3.72 - 3.61 (m, 4H), 2.56 (s, 3H)。

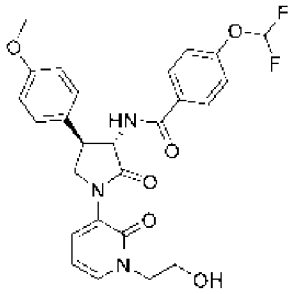
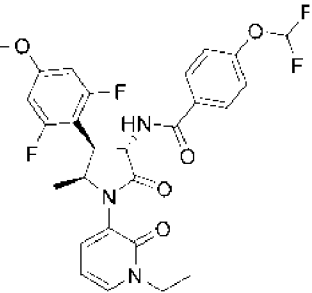
69		556.2	方法D， RT = 1.970 min， 97.7%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.07 (d, J = 8.6 Hz, 1H), 8.03 - 7.91 (m, 2H), 7.72 (d, J = 6.8 Hz, 1H), 7.66 (td, J = 1.1, 7.2 Hz, 1H), 7.48 (d, J = 8.6 Hz, 4H), 7.44 - 7.29 (m, 2H), 6.42 (m, 1H), 6.34 (t, J = 3.6 Hz, 1 H), 6.40 (t, J = 59.6 Hz, 1H), 5.05 (dd, J = 8.9, 10.9 Hz, 1H), 4.56 - 4.29 (m, 2H), 4.17 (t, J = 7.7 Hz, 1H), 3.89 - 3.72 (m, 2H)
70		612.3	方法D， RT = 1.74 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.92 (d, J = 8.3 Hz, 1H), 7.91 - 7.74 (m, 2H), 7.63 - 7.47 (m, 2H), 7.26 (s, , 1H), 6.90 - 6.68 (m, 2H), 5.78 (d, J = 1.7 Hz, 1H), 5.66-5.63 (m, 1H), 4.96 - 4.79 (m, 1H), 4.58 - 4.53 (m, 1H), 4.25 - 4.20 (m, 1H), 3.77 (s, 3H), 3.76 (s, 3H), 3.42 -3.37 (m, 2H), 3.26 - 3.21 (m, 1H), 2.79-2.77 (m, 1H), 2.41 (d, J = 9.0 Hz, 1H), 2.26 (s, 3H), 1.81-1.79 (m, 1H), 1.72-1.69 (m, 1H), 1.18 (d, J = 6.6 Hz, 3H)。

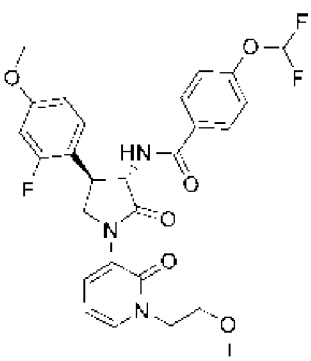
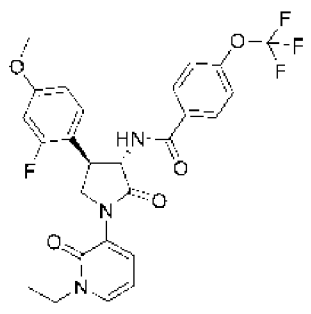
71		644.2	方法D， RT = 1.58 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.05 (d, J = 8.6 Hz, 1H), 7.96 - 7.80 (m, 2H), 7.35 (t, J = 73.6 Hz, 1H), 7.29-7.27 (m, 2H), 6.93 - 6.66 (m, 3H), 5.85 (s, 1H), 4.99 (dd, J = 10.8, 8.3 Hz, 1H), 4.58 - 4.39 (m, 2H), 3.78 (s, 3H), 3.76 (s, 3H), 3.64-3.61 (m, 1H), 3.45 - 3.42 (m, 1H), 3.37 - 3.29 (m, 1H), 3.23-3.21 (m, 1H), 2.80 (dd, J = 9.0, 1.7 Hz, 1H), 2.44 (br d, J = 9.0 Hz, 1H), 2.25 (s, 3H), 1.90 - 1.78 (m, 1H), 1.71-1.68 (m, 1H), 1.36 (d, J = 5.9 Hz, 3H)。
72		570.2	方法C， RT = 1.927 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.96 (d, J = 8.6 Hz, 1H), 7.97 - 7.87 (m, 2H), 7.77 (dd, J = 6.8, 2.0 Hz, 1H), 7.63 (dd, J = 7.2, 1.8 Hz, 1H), 7.51 - 7.37 (m, 4H), 7.35 (t, J = 73.2 Hz, 1H), 7.30 - 7.32 (m, 2H), 6.38 (t, J = 7.0 Hz, 1H), 5.04 (dd, J = 11.1, 8.7 Hz, 1H), 4.26 - 4.11 (m, 3H), 3.88 - 3.72 (m, 2H), 2.83 - 2.70 (m, 2H)。

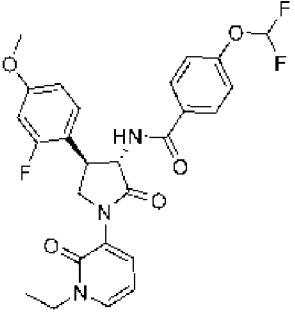
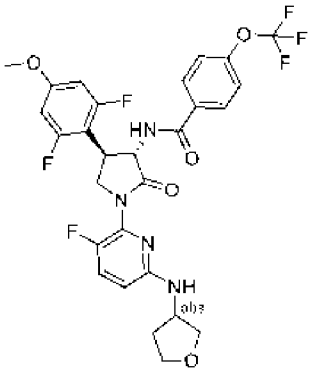
73		588.2	方法D， RT = 2.086 min， 98.8%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.06 (d, J = 8.6 Hz, 1H), 8.02 - 7.93 (m, 2H), 7.77 (dd, J = 6.8, 2.0 Hz, 1H), 7.63 (dd, J = 7.1, 2.0 Hz, 1H), 7.52 - 7.46 (m, 4H), 7.44 - 7.35 (m, 2H), 6.38 (t, J = 7.0 Hz, 1H), 5.05 (dd, J = 11.0, 8.8 Hz, 1H), 4.26 - 4.15 (m, 3H), 3.89 - 3.71 (m, 2H), 2.85 - 2.71 (m, 2H)。
74		546.2	方法D， RT = 1.69 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.30 (d, J = 5.5 Hz, 1H), 7.68 (dd, J = 7.0, 2.0 Hz, 1H), 7.64 - 7.56 (m, 2H), 7.49 - 7.33 (m, 3H), 6.75 - 6.59 (m, 2H), 6.35 (t, J = 7.0 Hz, 1H), 5.11 (dd, J = 9.0, 5.5 Hz, 1H), 4.90 - 4.87 (m, 1H), 4.63-4.61 (m, 1H), 4.23 - 4.06 (m, 2H), 3.72 (s, 3H), 3.61 (t, J = 5.8 Hz, 2H), 3.25 (s, 3H), 0.70 (d, J = 6.5 Hz, 3H)。

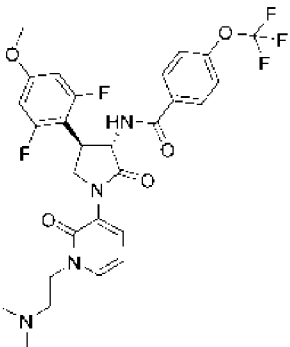
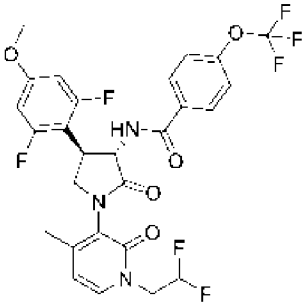
75		602.2	方法D， RT = 1.98 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.06 (d, J = 8.8 Hz, 1H), 8.04 - 7.89 (m, 2H), 7.77 (dd, J = 6.8, 2.0 Hz, 1H), 7.63 (dd, J = 7.3, 2.0 Hz, 1H), 7.57 - 7.39 (m, 3H), 6.92 - 6.70 (m, 2H), 6.38 (t, J = 7.0 Hz, 1H), 5.14 (dd, J = 11.4, 8.7 Hz, 1H), 4.29 - 4.09 (m, 3H), 4.06 - 3.94 (m, 1H), 3.75 (s, 3H), 3.74 - 3.61 (m, 1H), 2.87 - 2.68 (m, 2H)
76		502.2	方法D， RT = 1.78 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.95 (d, J = 9.0 Hz, 1H), 8.11 (dd, J = 4.6, 1.5 Hz, 1H), 7.91 - 7.76 (m, 2H), 7.64 (dd, J = 8.3, 1.5 Hz, 1H), 7.59 - 7.49 (m, 2H), 7.42 (dd, J = 4.6, 8.3 Hz, 1H), 6.87 - 6.70 (m, 2H), 5.67 (dd, J = 12.0, 8.6 Hz, 1H), 4.58 - 4.46 (m, 1H), 4.40-4.35 (m, 1H), 3.85 (s, 3H), 3.77 (s, 3H), 0.92 (d, J = 6.8 Hz, 3H)。

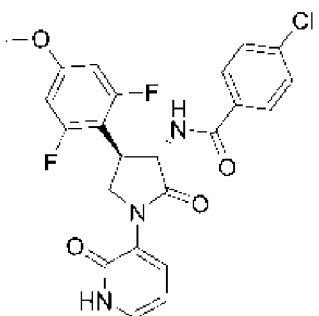
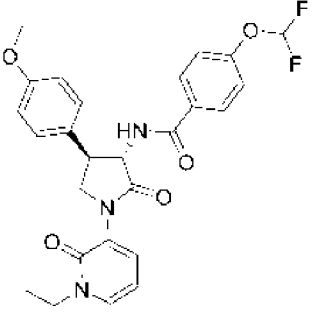
77		534.2	方法D， RT = 1.76 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.88 (d, J = 8.8 Hz, 1H), 8.11 (dd, J = 4.6, 1.5 Hz, 1H), 7.95 - 7.83 (m, 2H), 7.64 (dd, J = 8.6, 1.5 Hz, 1H), 7.43-7.40 (m, 1 H), 7.35 (t, J = 73.6 Hz, 1H), 7.26-7.24 (m, 2H), 6.85 - 6.72 (m, 2H), 5.67 (dd, J = 11.7, 8.6 Hz, 1H), 4.60 - 4.48 (m, 1H), 4.41-4.36 (m, 1H), 3.86 (s, 3H), 3.77 (s, 3H), 0.92 (d, J = 6.6 Hz, 3H)。
78		611.3	方法C， RT = 1.525 min， 97.1%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.11 (d, J = 8.6 Hz, 1H), 7.95 (d, J = 8.8 Hz, 2H), 7.68 (dd, J = 7.0, 1.7 Hz, 1H), 7.56 (dd, J = 7.1, 1.7 Hz, 1H), 7.48 (d, J = 8.1 Hz, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.34 (t, J = 7.1 Hz, 1H), 5.13 (dd, J = 10.8, 8.8 Hz, 1H), 5.02 - 4.90 (m, 1H), 4.15 - 3.88 (m, 4H), 3.81 - 3.70 (m, 4H), 3.61 (dd, J = 10.8, 4.4 Hz, 1H), 3.24 - 3.18 (m, 4H), 2.96 - 2.84 (m, 2H)。

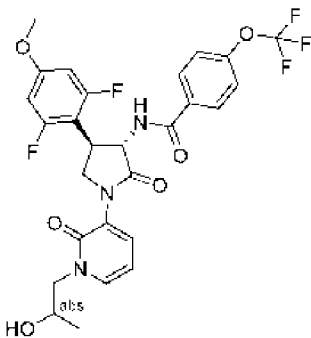
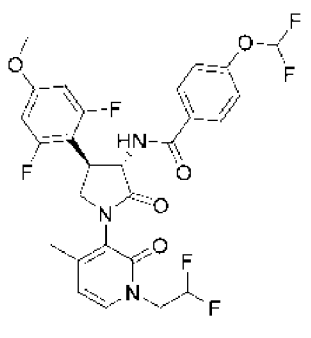
79		514.2	方法D， RT = 1.36 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.93 (d, J = 8.8 Hz, 1H), 7.99 - 7.83 (m, 2H), 7.63 (dd, J = 6.7, 2.1 Hz, 1H), 7.58 (dd, J = 7.1, 2.1 Hz, 1H), 7.33 (t, J = 73.6 Hz, 1H), 7.36 - 7.25 (m, 4H), 6.98 - 6.77 (m, 2H), 6.35 - 6.23 (m, 1H), 5.06 - 4.87 (m, 2H), 4.16 - 3.96 (m, 3H), 3.82 - 3.68 (m, 5H), 3.65 (br s, 2H)。
80		548.2	方法D， RT = 1.68 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.86 (d, J = 8.6 Hz, 1H), 7.90 (d, J = 8.8 Hz, 2H), 7.77 (dd, J = 7.2, 1.8 Hz, 1H), 7.57 (dd, J = 7.2, 1.8 Hz, 1H), 7.35 (t, J = 73.6 Hz, 1H), 7.25 - 7.23 (m, 2H), 6.77 (d, J = 11.5 Hz, 2H), 6.34 (t, J = 7.0 Hz, 1H), 5.66 (dd, J = 12.0, 8.8 Hz, 1H), 4.69 - 4.58 (m, 1H), 4.333-4.28 (m, 1H), 4.14 - 3.98 (m, 1H), 3.98 - 3.87 (m, 1H), 3.76 (s, 3H), 1.25 (t, J = 7.1 Hz, 3H), 0.91 (d, J = 6.8 Hz, 3H)。

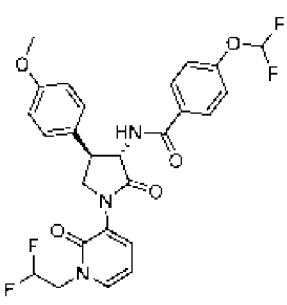
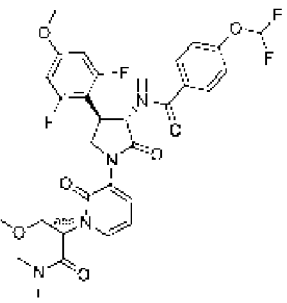
81		546.2	方法D， RT = 1.57 min， 95.1%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.95 (d, J = 8.8 Hz, 1H), 7.97 - 7.86 (m, 2H), 7.65 (dd, J = 6.6, 2.0 Hz, 1H), 7.59 (dd, J = 7.1, 2.0 Hz, 1H), 7.55 - 7.46 (m, 1H), 7.35 (t, J = 73.6 Hz, 1H), 7.32 - 7.23 (m, 2H), 6.87 - 6.74 (m, 2H), 6.36 - 6.26 (m, 1H), 5.13 (dd, J = 11.4, 8.9 Hz, 1H), 4.19 - 4.05 (m, 3H), 4.04 - 3.95 (m, 1H), 3.74 (s, 3H), 3.73 - 3.65 (m, 1H), 3.60 (t, J = 5.4 Hz, 2H), 3.25 (s, 3H)。
82		534.2	方法D， RT = 1.77 min， 98.9%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.05 (d, J = 8.8 Hz, 1H), 8.00 - 7.92 (m, 2H), 7.75 (dd, J = 6.8, 2.0 Hz, 1H), 7.58 (dd, J = 7.3, 2.0 Hz, 1H), 7.54 - 7.43 (m, 3H), 6.86 - 6.73 (m, 2H), 6.39 - 6.29 (m, 1H), 5.13 (dd, J = 11.4, 8.9 Hz, 1H), 4.19 - 4.09 (m, 1H), 4.04 - 3.93 (m, 3H), 3.74 (s, 3H), 3.73 - 3.64 (m, 1H), 1.24 (t, J = 7.1 Hz, 3H)。

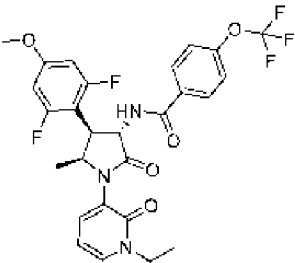
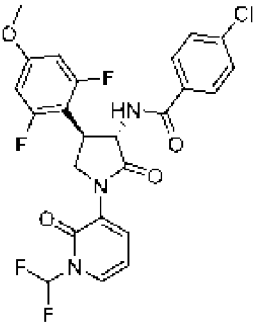
83		516.2	方法D， RT = 1.58 min， 96.07%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.95 (d, J = 8.8 Hz, 1H), 7.98 - 7.84 (m, 2H), 7.75 (dd, J = 6.6, 2.0 Hz, 1H), 7.58 - 7.51 (m, 1H), 7.35 (t, 72.0 Hz, 1H), 7.28 - 7.19 (m, 3H), 6.91 - 6.69 (m, 2H), 6.39 - 6.31 (m, 1H), 5.13 (dd, J = 11.5, 8.8 Hz, 1H), 4.20 - 4.08 (m, 1H), 4.06 - 3.89 (m, 3H), 3.74 (s, 3H), 3.73 - 3.61 (m, 1H), 1.24 (t, J = 7.1 Hz, 3H)。
84		611.2	方法D， RT = 1.99 min，99%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.18 (d, J = 8.6 Hz, 1H), 7.99 - 7.86 (m, 2H), 7.54 - 7.41 (m, 3H), 6.96 (d, J = 5.9 Hz, 1H), 6.79 (d, J = 10.8 Hz, 2H), 6.47 (dd, J = 8.9, 2.6 Hz, 1H), 5.16 - 5.05 (m, 1H), 4.28 - 4.18 (m, 1H), 4.18 - 4.07 (m, 2H), 4.03 - 3.94 (m, 1H), 3.89-3.86 (m, 1H), 3.84 - 3.77 (m, 1H), 3.76 (s, 3H), 3.70 (dt, J = 8.1, 5.7 Hz, 1H), 3.51-3.49 (m, 1H), 2.19-2.16 (m, 1H), 1.83 - 1.73 (m, 1H)。

85		595.3	方法D， RT = 1.651 min， 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.12 (d, J = 8.6 Hz, 1H), 8.01 - 7.89 (m, 2H), 7.70 (dd, J = 2.0, 6.8 Hz, 1H), 7.58 (dd, J = 7.3, 2.0 Hz, 1H), 7.49 (dd, J = 8.8, 1.0Hz, 2H), 6.84 - 6.72 (m, 2H), 6.32 (t, J = 7.0 Hz, 1H), 5.13 (dd, J = 8.6, 11.0 Hz, 1H), 4.14 - 3.91 (m, 5H), 3.77 (s, 3H), 2.18 (s, 6H), 2.14 - 1.73 (m, 2H)。
86		602.2	方法D， RT = 1.93 min，97%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.26 - 8.96 (m, 1H), 8.04 - 7.84 (m, 2H), 7.74 - 7.58 (m, 1H), 7.55 - 7.37 (m, 2H), 6.90 - 6.68 (m, 2H), 6.51 - 6.12 (m, 2H), 5.38 - 4.83 (m, 1H), 4.52 - 4.31 (m, 2H), 4.30 - 4.00 (m, 2H), 3.82 - 3.73 (m, 3H), 3.59 - 3.49 (m, 1H), 2.26 - 1.97 (2s, 3H)。(可互相轉化之阻轉 異構物之混合物)

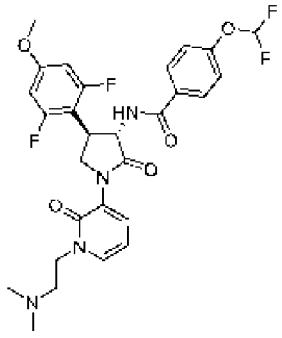
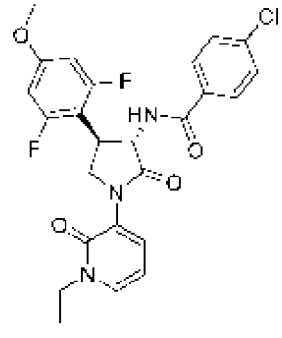
87		474.1	方法D , RT = 1.491 min , 95.5%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 12.03 (br dd, J = 3.8, 2.3 Hz, 1H), 9.06 (br d, J = 8.8 Hz, 1H), 7.88 - 7.80 (m, 2H), 7.61 (dd, J = 7.1, 2.0 Hz, 1H), 7.59 - 7.51 (m, 2H), 7.40 (dd, J = 1.3, 6.2 Hz, 1H), 6.77 (d, J = 10.8 Hz, 2H), 6.30 (t, J = 6.8 Hz, 1H), 5.12 (dd, J = 10.5, 8.8 Hz, 1H), 4.15 - 3.87 (m, 3H), 3.77 (s, 3H) °
88		498.2	方法D , RT = 1.519 min , 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 8.92 (d, J = 8.8 Hz, 1H), 7.98 - 7.86 (m, 2H), 7.74 (dd, J = 6.7, 2.1 Hz, 1H), 7.57 (dd, J = 7.3, 2.0 Hz, 1H), 7.34 (t, J = 80.0 Hz, 1H), 7.35 - 7.27 (m, 4H), 6.97 - 6.83 (m, 2H), 6.34 (t, J = 7.0 Hz, 1H), 5.01 (dd, J = 11.2, 8.8 Hz, 1H), 4.18 - 4.08 (m, 1H), 4.04 - 3.90 (m, 2H), 3.83 - 3.63 (m, 5H), 1.24 (t, J = 7.2 Hz, 3H) °

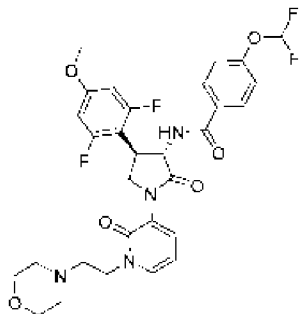
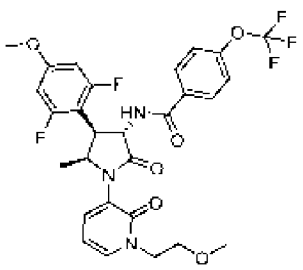
89		582.2	方法D， RT = 1.693 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.11 (d, J = 8.6 Hz, 1H), 8.00 - 7.85 (m, 2H), 7.62 (dd, J = 6.8, 2.0 Hz, 1H), 7.58 (dd, J = 7.2, 2.1 Hz, 1H), 7.53 - 7.39 (m, 2H), 6.76 (d, J = 10.8 Hz, 2H), 6.31 (t, J = 7.1 Hz, 1H), 5.12 (dd, J = 11.0, 8.6 Hz, 1H), 4.94 (br d, J = 5.4 Hz, 1H), 4.16 - 3.88 (m, 5H), 3.76 (s, 3H), 3.65 (dd, J = 13.0, 8.1 Hz, 1H), 1.09 (d, J = 6.1 Hz, 3H)。
90		584.2	方法D， RT = 1.765 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.15 - 8.90 (m, 1H), 7.99 - 7.83 (m, 2H), 7.74 - 7.59 (m, 1H), 7.35 (t, J = 68 Hz, 1H), 7.56 - 7.07 (m, 2H), 6.84 - 6.69 (m, 2H), 6.54 - 6.11 (m, 2H), 5.39 - 4.80 (m, 1H), 4.51 - 4.02 (m, 4H), 3.82 - 3.71 (m, 3H), 3.58 - 3.41 (m, 1H), 2.25 - 1.95 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)

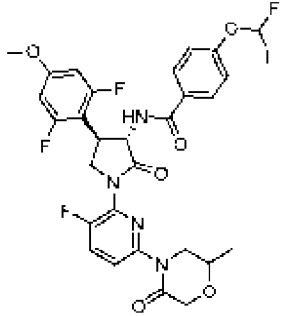
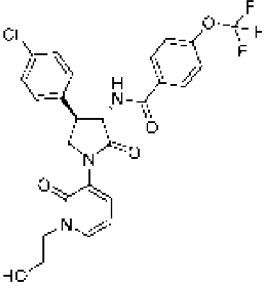
91		534.2	方法D， RT = 1.597 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.93 (d, J = 8.8 Hz, 1H), 7.99 - 7.87 (m, 2H), 7.72 (dd, J = 7.0, 2.1 Hz, 1H), 7.66 (dd, J = 7.3, 2.0 Hz, 1H), 7.35 (t, J = 72.4 Hz, 1 H), 7.34 - 7.25 (m, 4H), 6.94 - 6.85 (m, 2H), 6.34 (tt, J = 52.2, 4 Hz, 1H), 6.41 (t, J = 8 Hz, 1H), 5.02 (dd, J = 11.1, 8.9 Hz, 1H), 4.54 - 4.41 (m, 2H), 4.17 - 4.08 (m, 1H), 3.79 - 3.70 (m, 5H)。
92		635.2	方法D， RT = 1.615 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.01 (d, J = 8.6 Hz, 1H), 7.94 - 7.83 (m, 2H), 7.72 (dd, J = 7.1, 2.0 Hz, 1H), 7.61 (dd, J = 7.2, 1.8 Hz, 1H), 7.34 (t, J = 73.6 Hz, 1H), 7.28 (m, 1H), 6.76 (d, J = 11.0 Hz, 2H), 6.41 (t, J = 7.1 Hz, 1H), 6.07 (dd, J = 8.7, 5.3 Hz, 1H), 5.09 (dd, J = 11.1, 8.7 Hz, 1H), 4.13 - 4.04 (m, 1H), 4.03 - 3.79 (m, 5H), 3.76 (s, 3H), 3.26 (s, 3H), 3.11 (s, 3H), 2.84 (s, 3H)。

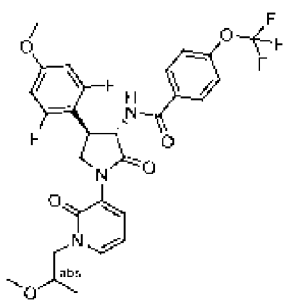
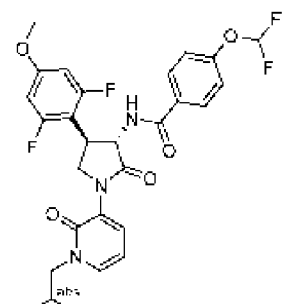
93		566.2	方法D， RT = 1.86 min，98%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.97 (d, J = 8.8 Hz, 1H), 8.02 - 7.88 (m, 2H), 7.78 (dd, J = 6.8, 2.0 Hz, 1H), 7.58 (dd, J = 6.8, 2.0 Hz, 1H), 7.45 (d, J = 8.3 Hz, 2H), 6.81 - 6.67 (m, 2H), 6.34 (t, J = 7.0 Hz, 1H), 5.67 (dd, J = 12.0, 8.8 Hz, 1H), 4.71 - 4.56 (m, 1H), 4.33-4.28 (m, 1H), 4.13 - 3.99 (m, 1H), 3.98 - 3.89 (m, 1H), 3.76 (s, 3H), 1.25 (t, J = 7.1 Hz, 3H), 0.91 (d, J = 6.6 Hz, 3H)。
94		524.1	方法D， RT = 1.789 min， 98.8%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.07 (br d, J = 8.3 Hz, 1H), 7.92 (t, J = 59.6 Hz, 1H), 7.84 (m, 2H), 7.74 (m, 2H), 7.56 (d, J = 8.3 Hz, 2H), 6.77 (d, J = 10.5 Hz, 2H), 6.56 (t, J = 7.1 Hz, 1H), 5.08 (dd, J = 11.0, 8.8 Hz, 1H), 4.20 - 4.06 (m, 1H), 4.04 - 3.93 (m, 2H), 3.77 (s, 3H)。

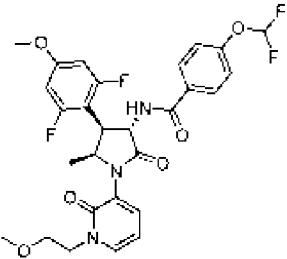
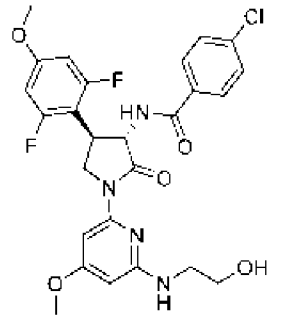
95		506.1	方法D， RT = 1.509 min， 96.5%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 12.03 (br s, 1H), 9.00 (br d, J = 7.8 Hz, 1H), 7.94 - 7.84 (m, 2H), 7.61 (dd, J = 7.2, 2.1 Hz, 1H), 7.40 - 7.25 (m, 3H), 7.33 (t, J = 73.6 Hz, 1H), 6.77 (d, J = 10.8 Hz, 2H), 6.30 (t, J = 6.7 Hz, 1H), 5.12 (dd, J = 10.8, 8.6 Hz, 1H), 4.15 - 3.92 (m, 3H), 3.77 (s, 3H)。
96		610.2	方法D， RT = 1.856 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.00 (d, J = 8.8 Hz, 1H), 7.95 - 7.84 (m, 2H), 7.79 (dd, J = 6.8, 2.0 Hz, 1H), 7.61 (dd, J = 7.3, 2.0 Hz, 1H), 7.33 (t, J = 73.6 Hz, 1H), 7.28 (m, 2H), 6.77 (d, J = 10.5 Hz, 2H), 6.36 (t, J = 7.0 Hz, 1H), 5.11 (dd, J = 10.8, 8.8 Hz, 1H), 4.18 - 4.03 (m, 3H), 4.03 - 3.88 (m, 2H), 3.77 (s, 3H), 2.68 - 2.55 (m, 5H)。

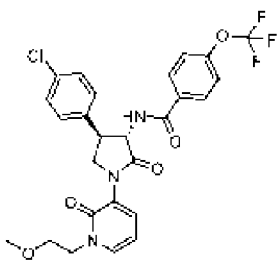
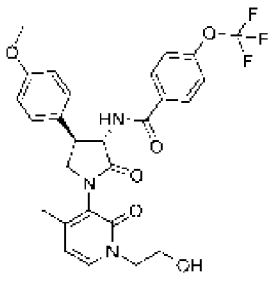
97		577.3	方法D， RT = 1.464 min， 98.5%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.01 (d, J = 8.8 Hz, 1H), 7.92 - 7.83 (m, 2H), 7.70 (dd, J = 6.7, 2.1 Hz, 1H), 7.58 (dd, J = 7.2, 2.1 Hz, 1H), 7.34 (t, J = 73.6 Hz, 1H), 7.28 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.32 (t, J = 7.0 Hz, 1H), 5.12 (dd, J = 11.0, 8.6 Hz, 1H), 4.12 - 3.92 (m, 7H), 3.76 (s, 3H), 2.18 (s, 6H)。
98		502.1	方法D， RT = 1.680 min， 99.7%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.06 (br d, J = 8.3 Hz, 1H), 7.94 - 7.80 (m, 2H), 7.76 (dd, J = 6.8, 1.7 Hz, 1H), 7.64 - 7.44 (m, 3H), 6.77 (d, J = 10.5 Hz, 2H), 6.35 (t, J = 7.0 Hz, 1H), 5.13 (dd, J = 10.9, 8.7 Hz, 1H), 4.18 - 4.05 (m, 1H), 4.05 - 3.92 (m, 4H), 3.78 (s, 3H), 1.25 (t, J = 7.1 Hz, 3H)。

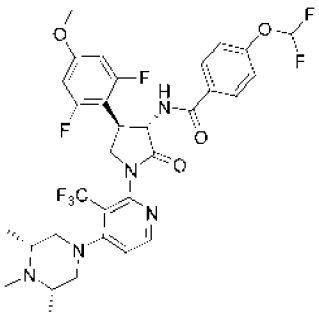
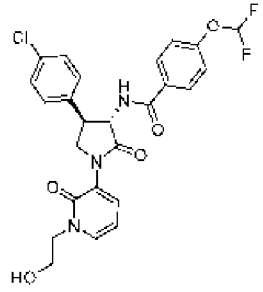
99		619.2	方法D， RT = 1.569 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.01 (d, J = 8.6 Hz, 1H), 7.94 - 7.80 (m, 2H), 7.71 (dd, J = 6.6, 2.0 Hz, 1H), 7.59 (dd, J = 7.1, 2.0 Hz, 1H), 7.34 (t, J = 76.0 Hz, 1 H), 7.27 - 7.25 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.33 (t, J = 7.0 Hz, 1H), 5.12 (dd, J = 10.9, 8.7 Hz, 1H), 4.14 - 3.92 (m, 5H), 3.76 (s, 3H), 3.54 (t, J = 4.5 Hz, 4H), 2.58 (t, J = 6.4 Hz, 2H), 2.43 (m, 4H)。
100		596.2	方法D， RT = 1.84 min，98%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.97 (d, J = 8.8 Hz, 1H), 8.01 - 7.89 (m, 2H), 7.68 (dd, J = 6.7, 2.0 Hz, 1H), 7.60 (dd, J = 6.7, 2.0 Hz, 1H), 7.52 - 7.38 (m, 2H), 6.84 - 6.71 (m, 2H), 6.32 (t, J = 7.0 Hz, 1H), 5.67 (dd, J = 12.1, 8.7 Hz, 1H), 4.69 - 4.57 (m, 1H), 4.32 - 4.27 (m 1H), 4.23-4.18 (m, 1H), 4.10 - 3.99 (m, 1H), 3.76 (s, 3H), 3.60 (t, J = 5.3 Hz, 2H), 3.25 (s, 3H), 0.91 (d, J = 6.8 Hz, 3H)。

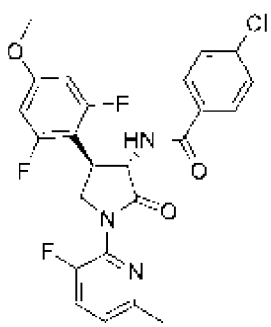
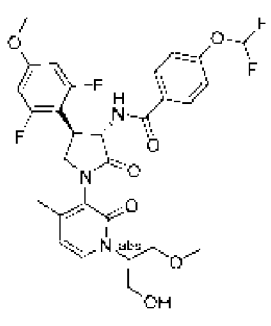
101		620.1	方法D， RT = 1.82 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.11 (d, J = 8.3 Hz, 1H), 8.08 - 7.77 (m, 4H), 7.35 (t, J = 73.6 Hz, 1H), 7.29 - 7.27 (m, 2H), 6.79 (d, J = 10.8 Hz, 2H), 5.18 - 5.04 (m, 1H), 4.30 (s, 1H), 4.27 - 4.20 (m, 3H), 4.11 - 3.97 (m, 3H), 3.77 (s, 3H), 3.55 - 3.46 (m, 1H), 1.26 (d, J = 6.1 Hz, 3H)。
102		536.2	方法D， RT = 1.730 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.07 (d, J = 8.8 Hz, 1H), 8.04 - 7.88 (m, 2H), 7.64 (dd, J = 6.8, 2.0 Hz, 1H), 7.59 (dd, J = 7.3, 2.0 Hz, 1H), 7.52 - 7.44 (m, 4H), 7.43 - 7.34 (m, 2H), 6.32 (t, J = 7.1 Hz, 1H), 5.04 (dd, J = 10.9, 8.7 Hz, 1H), 4.98 - 4.88 (m, 1H), 4.16 (t, J = 7.6 Hz, 1H), 4.05 - 3.95 (m, 2H), 3.88 - 3.71 (m, 2H), 3.70 - 3.59 (m, 2H)。

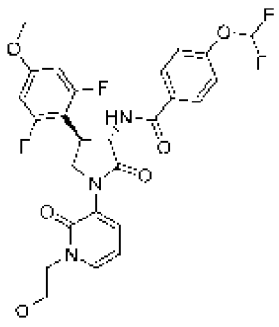
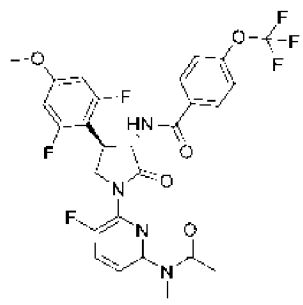
103		596.2	方法D， RT = 1.889 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.11 (d, J = 8.6 Hz, 1H), 7.94 (d, J = 8.8 Hz, 2H), 7.67 - 7.55 (m, 2H), 7.48 (d, J = 8.8 Hz, 2H), 6.77 (d, J = 10.5 Hz, 2H), 6.32 (t, J = 7.0 Hz, 1H), 5.12 (dd, J = 10.8, 8.6 Hz, 1H), 4.15 - 3.92 (m, 4H), 3.92 - 3.82 (m, 1H), 3.76 (s, 3H), 3.65 (dt, J = 6.5, 4.6 Hz, 1H), 3.19 (s, 3H), 1.09 (d, J = 6.1 Hz, 3H)。
104		564.2	方法D， RT = 1.512 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.00 (d, J = 8.6 Hz, 1H), 7.94 - 7.82 (m, 2H), 7.62 (dd, J = 6.8, 2.0 Hz, 1H), 7.58 (dd, J = 7.2, 2.1 Hz, 1H), 7.34 (t, J = 73.6 Hz, 1H), 7.28 (m, 2H), 6.76 (d, J = 10.8 Hz, 2H), 6.30 (t, J = 7.0 Hz, 1H), 5.11 (dd, J = 11.1, 8.7 Hz, 1H), 4.93 (d, J = 5.6 Hz, 1H), 4.17 - 4.04 (m, 2H), 4.04 - 3.83 (m, 3H), 3.76 (s, 3H), 3.63 (dd, J = 12.8, 8.2 Hz, 1H), 1.09 (d, J = 6.4 Hz, 3H)。

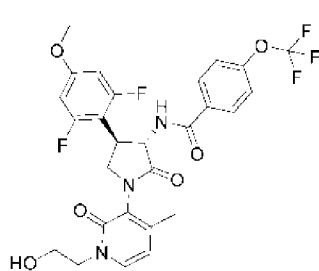
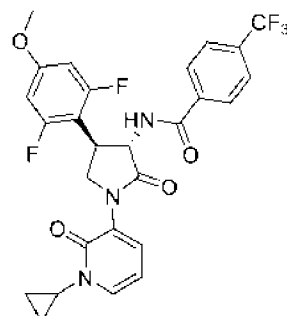
105		578.3	方法D， RT = 1.66 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.87 (d, J = 8.6 Hz, 1H), 7.90 (d, J = 8.8 Hz, 2H), 7.68 (dd, J = 7.1, 2.0 Hz, 1H), 7.59 (dd, J = 7.1, 2.0 Hz, 1H), 7.35 (t, J = 73.6 Hz, 1H), 7.25 - 7.35 (m, 2H), 6.84 - 6.65 (m, 2H), 6.32 (t, J = 7.0 Hz, 1H), 5.66 (dd, J = 12.0, 8.6 Hz, 1H), 4.69 - 4.58 (m, 1H), 4.33-4.29 (m, 1H), 4.24-4.18 (m, 1H), 4.09 - 4.03 (m, 1H), 3.76 (s, 3H), 3.60 (t, J = 5.1 Hz, 2H), 3.25 (s, 3H), 0.91 (d, J = 6.6 Hz, 3H)。
106		547.2	方法D， RT = 1.808 min， 97.5%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.10 (br d, J = 8.3 Hz, 1H), 7.91 - 7.75 (m, 2H), 7.58 (d, J = 8.6 Hz, 2H), 7.16 (d, J = 2.0 Hz, 1H), 6.79 (d, J = 10.8 Hz, 2H), 6.45 (br dd, J = 0.7, 2.4 Hz, 1H), 5.87 (d, J = 1.7 Hz, 1H), 5.08 (dd, J = 10.9, 8.4 Hz, 1H), 4.67 - 4.56 (m, 1H), 4.40 (t, J = 9.8 Hz, 1H), 4.14 - 3.98 (m, 1H), 3.94 - 3.85 (m, 1H), 3.78 (s, 3H), 3.73 (s, 3H), 3.50 (q, J = 5.7 Hz, 2H), 3.31 - 3.25 (m, 1H), 3.18 (d, J = 5.1 Hz, 1H)。

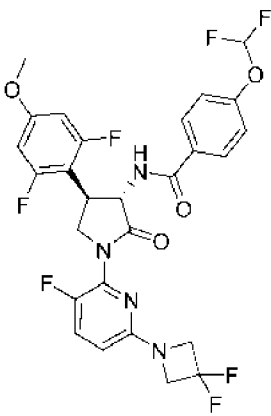
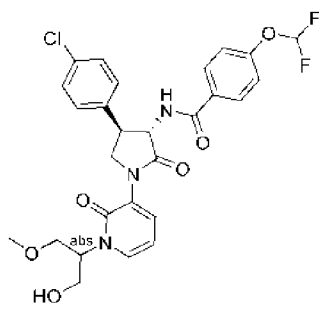
107		550.2	方法D， RT = 1.891 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.07 (d, J = 8.6 Hz, 1H), 8.04 - 7.89 (m, 2H), 7.65 (dd, J = 6.8, 2.0 Hz, 1H), 7.60 (dd, J = 7.1, 2.0 Hz, 1H), 7.54 - 7.44 (m, 4H), 7.44 - 7.29 (m, 2H), 6.33 (t, J = 7.0 Hz, 1H), 5.05 (dd, J = 10.8, 8.8 Hz, 1H), 4.25 - 4.04 (m, 3H), 3.88 - 3.69 (m, 2H), 3.60 (t, J = 5.4 Hz, 2H), 3.25 (s, 3H)。
108		546.2	方法D， RT = 1.78 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.14 - 8.93 (m, 1H), 8.07 - 7.91 (m, 3H), 7.57 - 7.26 (m, 4H), 7.05 - 6.79 (m, 3H), 5.27 - 4.71 (m, 2H), 4.54 - 4.01 (m, 3H), 3.98 - 3.84 (m, 2H), 3.81 - 3.67 (m, 5H), 2.31 - 2.19 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)

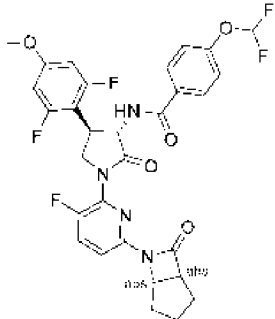
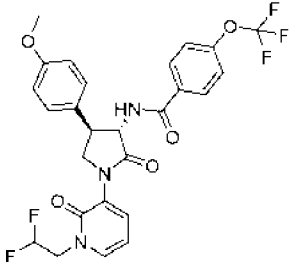
109		684.3	方法D， RT = 2.00 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.11 - 8.90 (m, 1H), 8.46 - 8.35 (m, 1H), 7.96 - 7.78 (m, 2H), 7.35 (t, J = 73 Hz, 1H), 7.31 - 7.25 (m, 3H), 6.79 (d, J=11.0 Hz, 2H), 5.18 - 4.97 (m, 1H), 4.44 - 4.35 (m, 1H), 4.28 - 4.13 (m, 1H), 3.76 - 3.74 (m, 1H), 3.73 (s, 3H), 3.00 - 2.70 (m, 3H), 2.35 - 2.26 (m, 3H) 2.19 (s, 3H), 1.04 (d, J = 6.4 Hz, 6H)。
110		518.2	方法D， RT = 1.547 min， 97.1%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.96 (d, J = 9.0 Hz, 1H), 7.99 - 7.84 (m, 2H), 7.64 (dd, J = 7.0, 2.0 Hz, 1H), 7.60 (dd, J = 7.0, 2.0 Hz, 1H), 7.55 - 7.38 (m, 4H), 7.34 (t, J = 73.6 Hz, 1H), 7.29 - 7.24 (m, 2H), 6.32 (t, J = 7.0 Hz, 1H), 5.09 - 5.00 (m, 1H), 4.93 (t, J = 5.3 Hz, 1H), 4.16 (t, J = 7.8 Hz, 1H), 4.05 - 3.96 (m, 2H), 3.89 - 3.72 (m, 2H), 3.68 - 3.60 (m, 2H)。

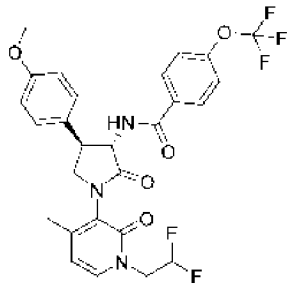
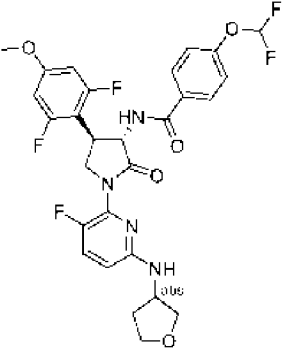
111		490.1	方法D， RT = 1.932 min，95%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.16 (d, J = 8.8 Hz, 1H), 7.84 (d, J = 8.6 Hz, 2H), 7.80 - 7.72 (m, 1H), 7.58 (d, J = 8.6 Hz, 2H), 7.31 (dd, J = 8.2, 3.3 Hz, 1H), 6.79 (d, J = 10.8 Hz, 2H), 5.15 - 5.04 (m, 1H), 4.31 - 4.16 (m, 2H), 4.12 - 4.01 (m, 1H), 3.78 (s, 3H), 2.47 (s, 3H)。
112		608.3	方法D， RT = 1.602 min， 98.8%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.15 - 8.89 (m, 1H), 7.98 - 7.84 (m, 2H), 7.67 - 7.56 (m, 1H), 7.55 - 7.05 (m, 2H), 7.34 (t, J = 73.6 Hz, 1H), 6.76 (dd, J = 5.0, 10.9 Hz, 2H), 6.29 - 6.12 (m, 1H), 5.36 - 4.85 (m, 2H), 4.28 - 4.08 (m, 2H), 3.76 (s, 3H), 3.74 - 3.59 (m, 4H), 3.50 (br s, 1H), 3.25 - 3.21 (2s, 3H), 2.25 - 2.02 (2s, 3H), 1.98 - 1.80 (m, 1H)。(可互相轉化之阻轉異構物之混合物)

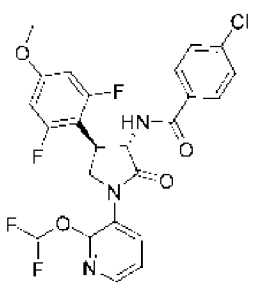
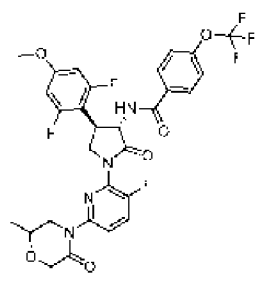
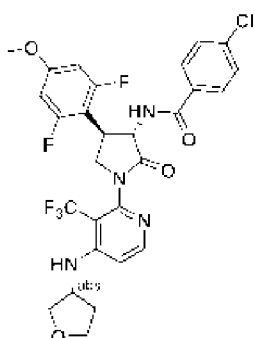
113		564.2	方法D， RT = 2.304 min， 99.9%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.01 (d, J = 8.5 Hz, 1H), 7.93 - 7.86 (m, 2H), 7.67 (dd, J = 7.0, 2.0 Hz, 1H), 7.62 - 7.57 (m, 1H), 7.35 (t, J = 72.6 Hz, 1H), 7.30 - 7.24 (m, 2H), 6.77 (d, J = 10.5 Hz, 2H), 6.33 (t, J = 7.0 Hz, 1H), 5.12 (dd, J = 11.0, 9.0 Hz, 1H), 4.17 - 4.04 (m, 3H), 4.02 - 3.93 (m, 2H), 3.77 (s, 3H), 3.60 (t, J = 5.3 Hz, 2H), 3.25 (s, 3H)。
114		597.2	方法D， RT = 1.88 min，97%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.22 (d, J = 8.8 Hz, 1H), 8.05 - 7.83 (m, 3H), 7.57 (dd, J = 2.6, 8.9 Hz, 1H), 7.50 (d, J = 8.3 Hz, 2H), 6.79 (d, J = 10.8 Hz, 2H), 5.10 (br dd, J = 8.8, 10.3 Hz, 1H), 4.30 - 4.16 (m, 2H), 4.09-4.03 (m, 1H), 3.77 (s, 3H), 3.27 (s, 3H), 2.07 (s, 3H)。

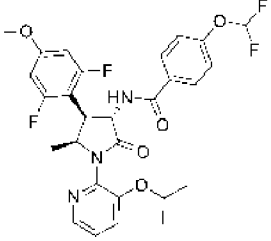
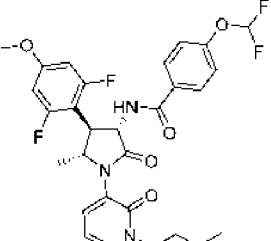
115		582.3	方法D， RT = 2.369 min， 99.5%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.26 - 9.02 (m, 1H), 8.02 - 7.89 (m, 2H), 7.61 - 7.42 (m, 3H), 6.83 - 6.71 (m, 2H), 6.27 - 6.14 (m, 1H), 5.41 - 4.85 (m, 2H), 4.33 - 3.87 (m, 4H), 3.83 - 3.72 (m, 3H), 3.70 - 3.58 (m, 2H), 3.56 - 3.44 (m, 1H), 2.24 - 2.02 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)
116		548.2	方法D， RT = 1.787 min， 99.6%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.23 (d, J = 8.6 Hz, 1H), 8.02 (d, J = 8.3 Hz, 2H), 7.88 (d, J = 8.3 Hz, 2H), 7.62 - 7.57 (m, 2H), 6.78 (d, J = 10.8 Hz, 2H), 6.30 (t, J = 7.1 Hz, 1H), 5.14 (dd, J = 11.0, 8.8 Hz, 1H), 4.18 - 4.06 (m, 1H), 4.04 - 3.94 (m, 2H), 3.77 (s, 3H), 3.43 - 3.38 (m, 1H), 1.10 - 0.98 (m, 2H), 0.93 - 0.80 (m, 2H)。

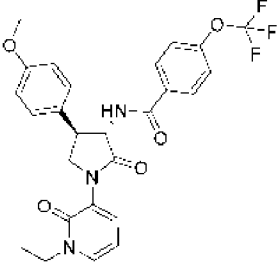
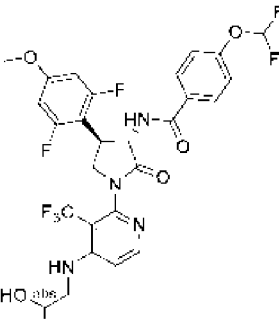
117		599.2	方法D， RT = 2.095 min，93%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.07 (d, J = 8.5 Hz, 1H), 7.88 (d, J = 9.0 Hz, 2H), 7.74 (t, J = 9.0 Hz, 1H), 7.34 (t, J = 76.0 Hz, 1 H), 7.29 - 7.26 (m, 2H), 6.79 (d, J = 10.5 Hz, 2H), 6.59 (dd, J = 8.5, 2.5 Hz, 1H), 5.16 - 5.03 (m, 1H), 4.46 - 4.33 (m, 4H), 4.25 - 4.14 (m, 2H), 4.02 - 3.90 (m, 1H), 3.77 (s, 3H)。
118		562.2	方法D， RT = 1.612 min， 95.8%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.98 (d, J = 8.8 Hz, 1H), 7.92 (d, J = 9.0 Hz, 2H), 7.69 (dd, J = 7.1, 2.0 Hz, 1H), 7.56 (dd, J = 7.3, 2.0 Hz, 1H), 7.50 - 7.37 (m, 4H), 7.34 (t, J = 73.6 Hz, 1H), 7.32 - 7.19 (m, 2H), 6.34 (t, J = 7.1 Hz, 1H), 5.13 - 5.00 (m, 3H), 4.16 (t, J = 7.9 Hz, 1H), 3.86 - 3.60 (m, 6H), 3.23 (s, 3H)。

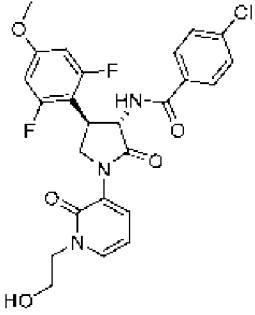
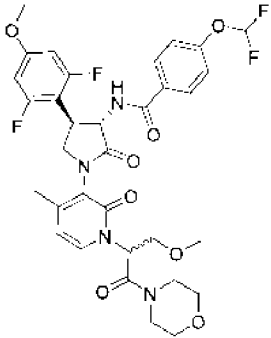
119		617.2	方法D， RT = 2.014 min，94%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.09 (d, J = 8.3 Hz, 1H), 7.97 - 7.80 (m, 3H), 7.59 (dd, J = 8.7, 2.8 Hz, 1H), 7.34 (t, J = 73.6 Hz, 1H), 7.29 - 7.27 (m, 2H), 6.79 (d, J = 10.8 Hz, 2H), 5.13 - 5.09 (m, 1H), 4.60 - 4.58 (m, 1H), 4.30 - 4.18 (m, 2H), 4.05 - 3.98 (m, 1H), 3.77 (s, 3H), 3.67 - 3.64 (m, 1H), 2.31 - 2.22 (m, 1H), 1.95 - 1.88 (m, 1H), 1.85 - 1.79 (m, 1H), 1.69 - 1.64 (m, 1H), 1.56 - 1.35 (m, 2H)。
120		552.3	方法D， RT = 1.777 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.04 (d, J = 8.6 Hz, 1H), 8.03 - 7.93 (m, 2H), 7.72 (dd, J = 6.8, 2.0 Hz, 1H), 7.66 (dd, J = 7.3, 2.0 Hz, 1H), 7.48 (d, J = 7.8 Hz, 2H), 7.39 - 7.26 (m, 2H), 6.97 - 6.82 (m, 2H), 6.42 (t, J = 7 Hz, 1H), 6.35 (tt, J = 56.2, 3.5 Hz, 1H), 5.03 (dd, J = 11.1, 8.7 Hz, 1H), 4.53 - 4.35 (m, 2H), 4.19 - 4.09 (m, 1H), 3.81 - 3.68 (m, 5H)。

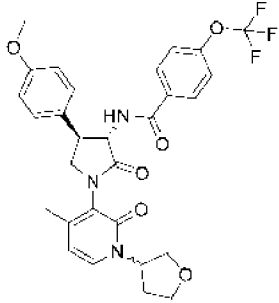
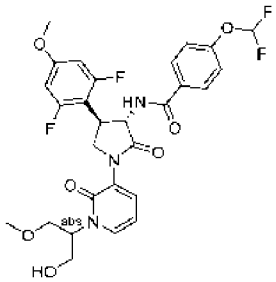
121		566.2	方法D， RT = 1.817 min，99%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.05 (dd, J = 16.0, 8.7 Hz, 1H), 8.04 - 7.91 (m, 2H), 7.77 - 7.18 (m, 5H), 7.01 - 6.67 (m, 2H), 6.48 - 6.10 (m, 2H), 5.35 - 4.62 (m, 1H), 4.53 - 4.26 (m, 2H), 4.12 - 3.77 (m, 2H), 3.77 - 3.62 (m, 4H), 3.57 - 3.36 (m, 1H), 2.27 - 1.98 (2s, 3H)。 (可互相轉化之阻轉異構物之 混合物)
122		593.3	方法D， RT = 1.82 min，98%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.07 (d, J = 8.6 Hz, 1H), 7.95 - 7.81 (m, 2H), 7.53 - 7.48 (m, 1H), 7.35 (t, J = 73.6 Hz, 1H), 7.28 - 7.26 (m, 2H) 6.96 (d, J = 5.9 Hz, 1H), 6.78 (d, J = 10.8 Hz, 2H), 6.46 (dd, J = 2.6, 8.9 Hz, 1H), 5.19 - 5.03 (m, 1H), 4.31 - 4.19 (m, 1H), 4.19 - 4.07 (m, 2H), 4.04 - 3.94 (m, 1H), 3.87-3.86 (m, 1H), 3.84 - 3.77 (m, 1H), 3.76 (s, 3H), 3.70 (dt, J = 5.7, 8.1 Hz, 1H), 3.50-3.49 (m, 1H), 2.19- 2.16 (m, 1H), 1.83 - 1.70 (m, 1H)。

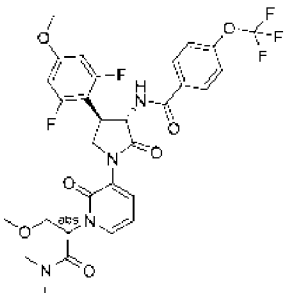
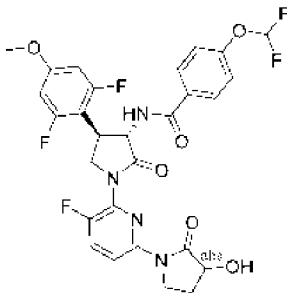
123		524.1	方法D， RT = 1.794 min， 94.4%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.10 (d, J = 8.6 Hz, 1H), 7.93 (t, J = 59.6 Hz, 1H), 7.86 - 7.66 (m, 4H), 7.63 - 7.47 (m, 2H), 6.78 (d, J = 10.8 Hz, 2H), 6.56 (t, J = 7.1 Hz, 1H), 5.09 (dd, J = 10.9, 8.7 Hz, 1H), 4.19 - 4.06 (m, 1H), 4.03 - 3.92 (m, 2H), 3.77 (s, 3H)。
124		639.2	方法D， RT = 2.01 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.20 (br d, J = 8.6 Hz, 1H), 8.02 - 7.87 (m, 4H), 7.49 (d, J = 8.3 Hz, 2H), 6.80 (d, J = 11.0 Hz, 2H), 5.17 - 5.07 (m, 1H), 4.33 - 4.20 (m, 4H), 4.12 - 3.98 (m, 3H), 3.77 (s, 3H), 3.57 - 3.49 (m, 1H), 1.26 (d, J = 6.1 Hz, 3H)。
125		611.2	方法D， RT = 1.88 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.09 (br d, J = 8.8 Hz, 1H), 8.32 - 8.21 (m, 1H), 7.91 - 7.78 (m, 2H), 7.65 - 7.51 (m, 2H), 6.97 - 6.85 (m, 1H), 6.78 (d, J = 10.8 Hz, 2H), 6.13 - 5.95 (m, 1H), 5.21 - 5.02 (m, 1H), 4.37 - 4.11 (m, 3H), 3.95 - 3.83 (m, 2H), 3.82 (s, 3H), 3.79 - 3.64 (m, 3H), 2.31 - 2.19 (m, 1H), 2.04 - 1.89 (m, 1H)。

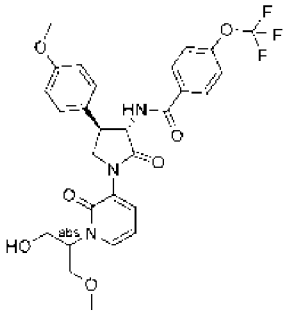
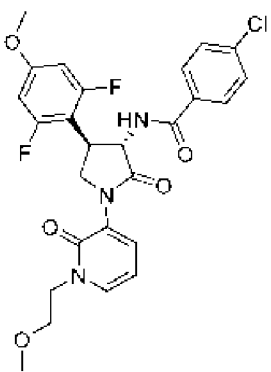
126		562.2	方法D， RT = 1.95 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.90 (d, <i>J</i> = 8.6 Hz, 1H), 8.07 (dd, <i>J</i> = 4.6, 1.2 Hz, 1H), 7.99 - 7.81 (m, 2H), 7.61 (d, <i>J</i> = 7.3 Hz, 1H), 7.39 - 7.35 (m, 1H), 7.35 (t, <i>J</i> = 73.6 Hz, 1H), 7.27 - 7.24 (m, 2H), 6.87 - 6.67 (m, 2H), 5.60 (dd, <i>J</i> = 11.5, 8.6 Hz, 1H), 4.77-4.68 (m, 1H), 4.56 - 4.43 (m, 1H), 4.40-4.35 (m, 1H), 3.77 (s, 3H), 1.30 (d, <i>J</i> = 5.5 Hz, 3H), 1.26 (d, <i>J</i> = 5.5 Hz, 3H), 0.90 (d, <i>J</i> = 6.4 Hz, 3H)。
127		578.3	方法D， RT = 1.67 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.98 (d, <i>J</i> = 8.6 Hz, 1H), 7.93 - 7.82 (m, 2H), 7.69 (dd, <i>J</i> = 6.8, 2.0 Hz, 1H), 7.48-7.45 (m, 1H), 7.35 (t, <i>J</i> = 73.6 Hz, 1H), 7.28 - 7.26 (m, 2H), 6.87 - 6.70 (m, 2H), 6.34 (t, <i>J</i> = 7.0 Hz, 1H), 5.11 (dd, <i>J</i> = 11.1, 8.4 Hz, 1H), 4.53- 5.09 (m, 1H), 4.17 - 4.08 (m, 2H), 3.77 (s, 3H), 3.76-3.74 (m, 1H), 3.63 - 3.57 (m, 2H), 3.24 (s, 3H), 0.99 (d, <i>J</i> = 6.1 Hz, 3H)。

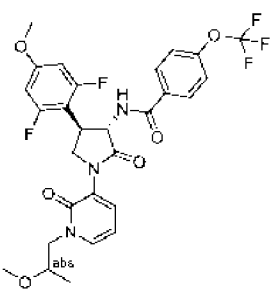
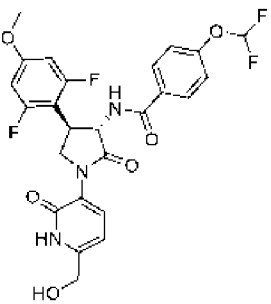
128		516.2	方法D， RT = 1.7 min， 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.03 (d, J = 8.8 Hz, 1H), 8.05 - 7.92 (m, 2H), 7.75 (dd, J = 6.6, 2.0 Hz, 1H), 7.58 (dd, J = 7.3, 2.0 Hz, 1H), 7.48 (d, J = 8.1 Hz, 2H), 7.39 - 7.28 (m, 2H), 7.00 - 6.83 (m, 2H), 6.35 (t, J = 7.0 Hz, 1H), 5.02 (dd, J = 11.1, 8.7 Hz, 1H), 4.18 - 4.08 (m, 1H), 4.05 - 3.92 (m, 2H), 3.83 - 3.68 (m, 5H), 1.25 (t, J = 7.1 Hz, 3H)。
129		631.2	方法D， RT = 1.75 min， 98.77%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.06 - 8.99 (m, 1H), 8.24 - 8.14 (m, 1H), 7.94 - 7.81 (m, 2H), 7.33 (t, J = 73.6 Hz, 1H), 7.28 - 7.24 (m, 2H), 6.93 - 6.81 (m, 1H), 6.77 (d, J = 10.5 Hz, 2H), 6.28 (br d, J = 4.9 Hz, 1H), 5.16 - 4.93 (m, 2H), 4.32 - 4.10 (m, 2H), 3.92 - 3.82 (m, 1H), 3.76 (s, 3H), 3.75 - 3.68 (m, 1H), 3.47 - 3.39 (m, 2H), 1.18 - 1.04 (m, 3H)。(可互相 轉化之阻轉異構物之混合物)

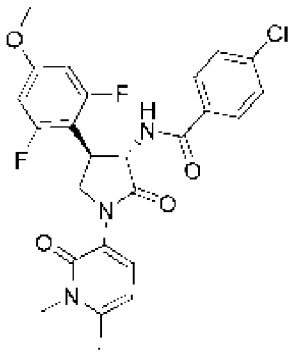
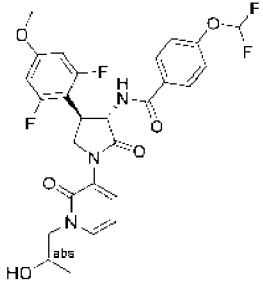
130		518.2	方法D， RT = 1.467 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.07 (d, <i>J</i> = 8.6 Hz, 1H), 7.83 (d, <i>J</i> = 8.6 Hz, 2H), 7.65 (dd, <i>J</i> = 6.8, 2.0 Hz, 1H), 7.62 - 7.43 (m, 3H), 6.77 (d, <i>J</i> = 10.8 Hz, 2H), 6.31 (t, <i>J</i> = 7.0 Hz, 1H), 5.12 (dd, <i>J</i> = 11.0, 8.8 Hz, 1H), 5.02 - 4.88 (m, 1H), 4.19 - 3.88 (m, 5H), 3.76 (s, 3H), 3.69 - 3.60 (m, 2H)。
131		691.2	方法D， RT = 1.732 min，99%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.14 - 8.91 (m, 1H), 7.97 - 7.80 (m, 2H), 7.69 - 7.55 (m, 1H), 7.35 (t, <i>J</i> = 73.6 Hz, 1H), 7.28 (m, 1H), 6.86 - 6.69 (m, 2H), 6.40 - 6.25 (m, 1H), 6.08 - 5.99 (m, 1H), 5.37 - 4.87 (m, 2H), 3.91 - 3.77 (m, 4H), 3.77 - 3.73 (m, 3H), 3.63 - 3.37 (m, 4H), 3.30 - 3.22 (m, 3H), 2.83 - 2.58 (m, 3H), 2.26 - 2.03 (m, 3H), 1.81 (br s, 2H)。(可互相轉化之阻轉異構物之混合物)

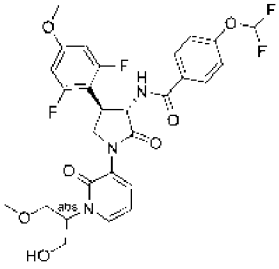
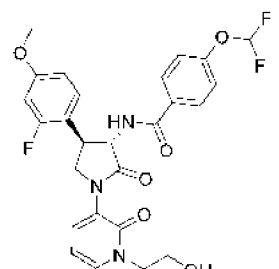
132		572.3	方法D， RT = 1.72 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.14 - 8.91 (m, 1H), 8.06 - 7.96 (m, 2H), 7.53 (td, <i>J</i> = 3.5, 7.1 Hz, 1H), 7.50 - 7.43 (m, 2H), 7.43 - 7.34 (m, 1H), 7.32 (d, <i>J</i> = 8.8 Hz, 1H), 7.01 - 6.79 (m, 2H), 6.28 (dd, <i>J</i> = 3.1, 7.2 Hz, 1H), 5.43 - 5.31 (m, 1H), 5.28 - 4.61 (m, 1H), 4.16 - 4.02 (m, 1H), 3.97 - 3.64 (m, 5H), 3.47 (t, <i>J</i> = 9.4 Hz, 1H), 2.98 - 2.83 (m, 2H), 2.19 - 2.05 (2s, 3H), 2.03 - 1.83 (m, 1H), 1.19 - 1.13 (m, 2H)。(可互相轉化之阻轉異構物之混合物)
133		594.2	方法D， RT = 1.526 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.01 (d, <i>J</i> = 8.6 Hz, 1H), 7.95 - 7.83 (m, 2H), 7.70 (dd, <i>J</i> = 6.8, 2.0 Hz, 1H), 7.56 (dd, <i>J</i> = 7.2, 1.8 Hz, 1H), 7.34 (t, <i>J</i> = 73.6 Hz, 1H), 7.28 (m, 2H), 6.76 (d, <i>J</i> = 10.5 Hz, 2H), 6.34 (t, <i>J</i> = 7.0 Hz, 1H), 5.17 - 5.04 (m, 3H), 4.14 - 4.03 (m, 1H), 4.03 - 3.92 (m, 2H), 3.81 - 3.65 (m, 6H), 3.65 - 3.56 (m, 1H), 3.23 (s, 3H)。

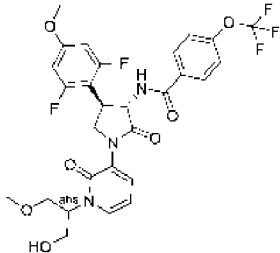
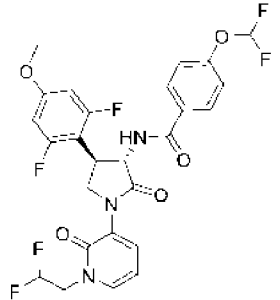
134		653.3	方法D， RT = 1.790 min， 98.6%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.12 (d, J = 8.3 Hz, 1H), 8.00 - 7.88 (m, 2H), 7.72 (dd, J = 7.0, 1.8 Hz, 1H), 7.61 (dd, J = 7.2, 1.8 Hz, 1H), 7.48 (dd, J = 1.0, 8.8 Hz, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.41 (t, J = 7.2 Hz, 1H), 6.08 (dd, J = 8.8, 5.1 Hz, 1H), 5.10 (dd, J = 11.0, 8.6 Hz, 1H), 4.16 - 4.04 (m, 1H), 4.02 - 3.91 (m, 2H), 3.89 - 3.80 (m, 2H), 3.76 (s, 3H), 3.27 (s, 3H), 3.11 (s, 3H), 2.85 (s, 3H)。
135		607.2	方法D， RT = 1.66 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.12 (d, J = 8.6 Hz, 1H), 8.28 (dd, J = 9.0, 3.2 Hz, 1H), 7.94 (t, J = 9.0 Hz, 1H), 7.91 - 7.83 (m, 2H), 7.35 (t, J = 73.6 Hz, 1H), 7.28 - 7.26 (m, 2H), 6.80 (d, J = 10.8 Hz, 2H), 5.86 (br d, J = 6.1 Hz, 1H), 5.17 - 5.05 (m, 1H), 4.46 - 4.35 (m, 1H), 4.30 - 4.17 (m, 2H), 4.12 - 3.90 (m, 2H), 3.77 (s, 3H), 3.75 - 3.60 (m, 1H), 2.43 - 2.34 (m, 1H), 1.88 - 1.75 (m, 1H)。

136		576.3	方法D， RT = 1.606 min，98%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.05 - 8.98 (m, 1H), 7.98 (d, J = 8.3 Hz, 2H), 7.70 - 7.65 (m, 1H), 7.61 - 7.52 (m, 1H), 7.51 - 7.39 (m, 2H), 7.34 (d, J = 8.3 Hz, 2H), 6.90 (d, J = 8.3 Hz, 2H), 6.34 (t, J = 6.8 Hz, 1H), 5.12 - 4.96 (m, 3H), 4.15 - 4.06 (m, 1H), 3.79 - 3.60 (m, 9H), 3.23 (s, 3H)。(NMR不清晰)
137		532.1	方法D， RT = 1.666 min， 99.6%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.06 (d, J = 8.8 Hz, 1H), 7.93 - 7.76 (m, 2H), 7.66 (dd, J = 6.8, 2.0 Hz, 1H), 7.63 - 7.48 (m, 3H), 6.77 (d, J = 10.5 Hz, 2H), 6.33 (t, J = 7.0 Hz, 1H), 5.12 (dd, J = 11.0, 8.6 Hz, 1H), 4.23 - 4.04 (m, 2H), 4.02 - 3.94 (m, 2H), 3.93 - 3.89 (m, 1H), 3.77 (s, 3H), 3.61 (t, J = 5.3 Hz, 2H), 3.26 (s, 3H)。

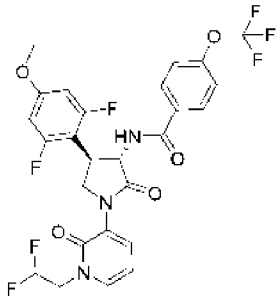
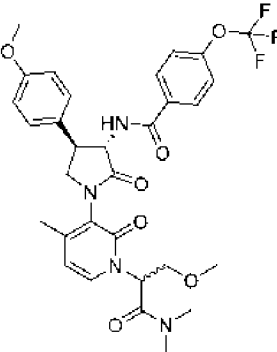
138		596.2	方法D， RT = 1.869 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.11 (d, J = 8.6 Hz, 1H), 8.00 - 7.83 (m, 2H), 7.61 (dt, J = 2.0, 7.1 Hz, 2H), 7.48 (d, J = 8.1 Hz, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.32 (t, J = 7.0 Hz, 1H), 5.13 (dd, J = 10.6, 8.7 Hz, 1H), 4.15 - 3.97 (m, 3H), 3.97 - 3.81 (m, 2H), 3.76 (s, 3H), 3.68 - 3.59 (m, 1H), 3.18 (s, 3H), 1.09 (d, J = 6.1 Hz, 3H)。
139		536.3	方法D， RT = 1.386 min， 97.2%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 11.94 - 11.70 (m, 1H), 9.00 (d, J = 8.6 Hz, 1H), 7.95 - 7.84 (m, 2H), 7.63 - 7.55 (m, 1H), 7.34 (t, J = 73.6 Hz, 1H), 7.28 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.26 (dt, J = 1.1, 2.9 Hz, 1H), 5.56 - 5.43 (m, 1H), 5.17 - 5.03 (m, 1H), 4.41 - 4.23 (m, 2H), 4.12 - 3.88 (m, 3H), 3.76 (s, 3H)。

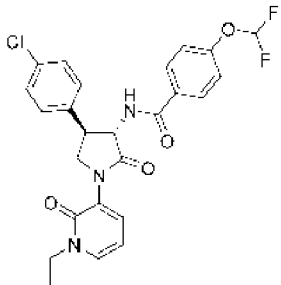
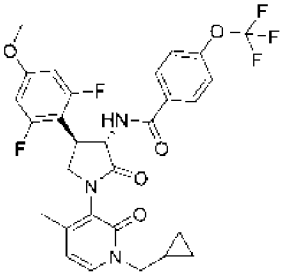
140		502.2	方法D， RT = 1.605 min， 98.6%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.07 (d, J = 8.6 Hz, 1H), 7.89 - 7.78 (m, 2H), 7.62 - 7.52 (m, 2H), 7.46 (d, J = 7.3 Hz, 1H), 6.77 (d, J = 10.5 Hz, 2H), 6.28 - 6.18 (m, 1H), 5.12 (dd, J = 11.1, 8.7 Hz, 1H), 4.16 - 4.02 (m, 1H), 3.99 - 3.86 (m, 2H), 3.76 (s, 3H), 3.49 (s, 3H), 2.39 (s, 3H)
141		564.2	方法D， RT = 1.508 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.00 (d, J = 8.6 Hz, 1H), 7.97 - 7.81 (m, 2H), 7.62 (dd, J = 6.7, 2.1 Hz, 1H), 7.58 (dd, J = 7.1, 2.0 Hz, 1H), 7.34 (t, J = 73.6 Hz, 1H), 7.28 (m, 2H), 6.76 (d, J = 10.8 Hz, 2H), 6.31 (t, J = 7.1 Hz, 1H), 5.11 (dd, J = 10.9, 8.7 Hz, 1H), 4.94 (d, J = 5.4 Hz, 1H), 4.15 - 3.85 (m, 5H), 3.76 (s, 3H), 3.64 (dd, J = 12.8, 8.2 Hz, 1H), 1.09 (d, J = 6.4 Hz, 3H)。

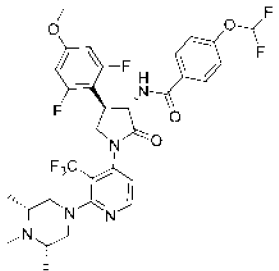
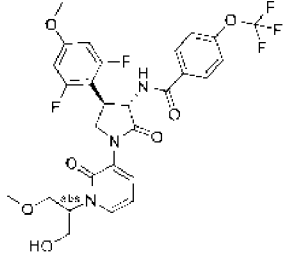
142		594.3	方法D， RT = 1.528 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.00 (d, J = 8.8 Hz, 1H), 7.94 - 7.82 (m, 2H), 7.70 (dd, J = 2.0, 7.1 Hz, 1H), 7.56 (dd, J = 2.0, 7.1 Hz, 1H), 7.34 (t, J = 73.6 Hz, 1H), 7.28 (m, 2H), 6.76 (d, J = 10.8 Hz, 2H), 6.34 (t, J = 7.0 Hz, 1H), 5.17 - 4.98 (m, 3H), 4.15 - 4.04 (m, 1H), 4.01 - 3.91 (m, 2H), 3.77(s, 3H), 3.77 - 3.58 (m, 4H), 3.23 (s, 3H)。
143		532.2	方法D， RT = 1.44 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.95 (d, J = 9.0 Hz, 1H), 7.99 - 7.87 (m, 2H), 7.63 (dd, J = 6.8, 2.0 Hz, 1H), 7.59 (dd, J = 7.1, 2.0 Hz, 1H), 7.51 (d, J = 9.3 Hz, 1H), 7.35 (t, J = 73.6 Hz, 1H), 7.26 (d, J = 8.8 Hz, 2H), 6.88 - 6.75 (m, 2H), 6.31 (t, J = 7.0 Hz, 1H), 5.12 (dd, J = 11.2, 8.8 Hz, 1H), 4.93 (t, J = 5.4 Hz, 1H), 4.17 - 4.09 (m, 1H), 4.06 - 3.93 (m, 3H), 3.74 (s, 3H), 3.72 - 3.58 (m, 3H)。

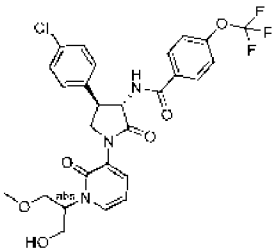
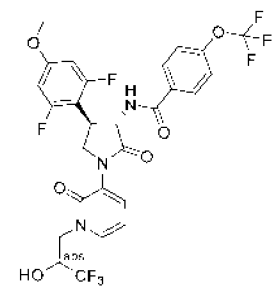
144		612.3	方法D， RT = 1.698 min， 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.11 (d, J = 8.6 Hz, 1H), 8.07 - 7.89 (m, 2H), 7.70 (dd, J = 6.8, 2.0 Hz, 1H), 7.56 (dd, J = 7.1, 2.0 Hz, 1H), 7.52 - 7.41 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.34 (t, J = 7.1 Hz, 1H), 5.22 - 4.95 (m, 3H), 4.20 - 4.03 (m, 1H), 4.03 - 3.90 (m, 2H), 3.83 - 3.61 (m, 4H), 3.76 (s, 3H), 3.23 (s, 3H)。
145		570.2	方法D， RT = 1.708 min，97%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.02 (d, J = 8.6 Hz, 1H), 7.89 (d, J = 8.8 Hz, 2H), 7.74 (dd, J = 6.8, 1.7 Hz, 1H), 7.66 (dd, J = 7.2, 1.7 Hz, 1H), 7.34 (t, J = 76.0 Hz, 1 H), 7.28 - 7.25 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.53 - 6.18 (m, 2H), 6.42 (t, J = 7 Hz, 1H), 6.35 (tt, J = 56.2, 3.5 Hz, 1H), 5.11 (dd, J = 10.6, 8.7 Hz, 1H), 4.56 - 4.34 (m, 2H), 4.16 - 4.06 (m, 1H), 4.03 - 3.92 (m, 2H), 3.77 (s, 3H)。

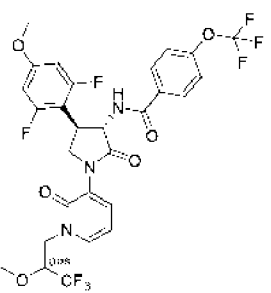
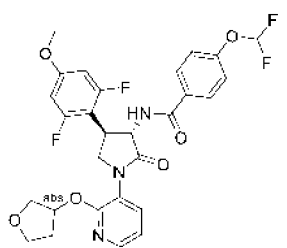
146		565.2	方法D， RT = 1.70 min，98%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 10.61 (s, 1H), 9.11 (d, J = 8.6 Hz, 1H), 8.04 (br d, J = 3.4 Hz, 1H), 7.93 - 7.70 (m, 3H), 7.35 (t, J = 73.6 Hz, 1H), 7.29 - 7.27 (m, 2H), 6.80 (d, J = 10.8 Hz, 2H), 5.06 (dd, J = 10.5, 8.6 Hz, 1H), 4.27 - 4.04 (m, 3H), 3.77 (s, 3H), 2.09 (s, 3H)。
147		650.2	方法D， RT = 2.091 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.14 (d, J = 8.6 Hz, 1H), 7.95 (d, J = 8.8 Hz, 2H), 7.73 - 6.67 (m, 2H), 7.48 (d, J = 8.8 Hz, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.39 (t, J = 7.1 Hz, 1H), 5.13 (dd, J = 10.5, 8.8 Hz, 1H), 4.42 (dd, J = 13.2, 3.4 Hz, 1H), 4.33 - 4.19 (m, 1H), 4.16 - 3.87 (m, 4H), 3.76 (s, 3H), 3.34 (s, 3H)。

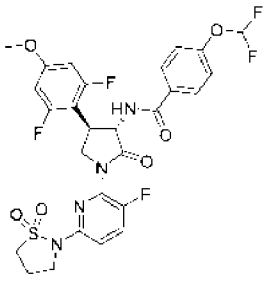
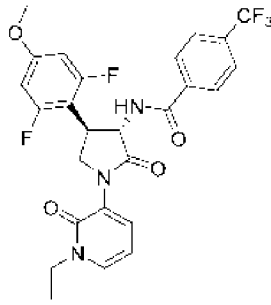
148		588.2	方法D， RT = 1.883 min，96%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.13 (d, J = 8.6 Hz, 1H), 7.95 (d, J = 8.8 Hz, 2H), 7.74 (dd, J = 7.0, 1.6 Hz, 1H), 7.67 (dd, J = 7.2, 1.8 Hz, 1H), 7.49 (d, J = 8.3 Hz, 2H), 6.78 (d, J = 10.8 Hz, 2H), 6.42 (t, J = 7 Hz, 1H), 6.35 (tt, J = 56.2, 3.5 Hz, 1H), 5.12 (dd, J = 8.6, 11.0 Hz, 1H), 4.54 - 4.36 (m, 2H), 4.18 - 4.05 (m, 1H), 4.03 - 3.93 (m, 2H), 3.77 (s, 3H)。
149		631.3	方法D， RT = 1.716 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.08 - 8.96 (m, 1H), 8.03 - 7.89 (m, 2H), 7.54 - 7.44 (m, 2H), 7.40 - 7.20 (m, 2H), 6.90 (m, 2H), 6.28 (d, J = 7.3 Hz, 1H), 6.09 - 6.03 (m, 1H), 5.23 - 4.73 (m, 1H), 4.13 - 4.03 (m, 1H), 3.94 - 3.78 (m, 4H), 3.74 - 3.61 (2s, 3H), 3.60 - 3.52 (m, 1H), 3.27 - 3.24 (2s, 3H), 3.14 - 3.07 (m, 3H), 2.82 - 2.37 (2s, 3H), 2.86 - 2.81 (2s, 3H)。 (可互相轉化之阻轉異構物之混合物)

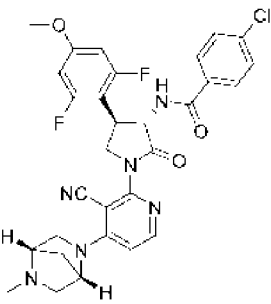
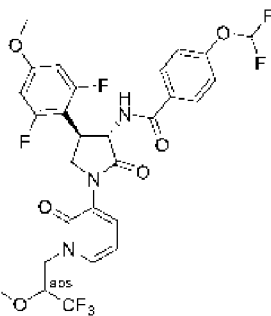
150		502.2	方法D， RT = 1.715 min， 98.1%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.96 (d, J = 8.5 Hz, 1H), 8.00 - 7.84 (m, 2H), 7.75 (dd, J = 6.8, 1.8 Hz, 1H), 7.59 (dd, J = 7.5, 1.8 Hz, 1H), 7.51 - 7.39(m, 4H), 7.34 (t, J = 73.6 Hz, 1H), 7.27 (d, J = 8.2HZ, 2H), 6.35 (t, J = 6.8 Hz, 1H), 5.04 (dd, J = 8.8, 10.8 Hz, 1H), 4.17 (t, J = 7.8 Hz, 1H), 4.07 - 3.93 (m, 2H), 3.90 - 3.64 (m, 2H), 1.25 (t, J = 7.3 Hz, 3H)。
151		592.3	方法D， RT = 2.017 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.25 - 8.95 (m, 1H), 8.05 - 7.86 (m, 2H), 7.76 - 7.62 (m, 1H), 7.53 - 7.38 (m, 2H), 6.77 (dd, J = 10.8, 5.9 Hz, 2H), 6.30 - 6.15 (m, 1H), 5.40 - 4.84 (m, 1H), 4.29 - 4.08 (m, 2H), 3.90 - 3.65 (m, 5H), 3.53 - 3.49(m, 1H), 2.19 - 1.06 (2s, 3H), 1.23 - 1.18 (m, 1H), 0.53 - 0.43 (m, 2H), 0.42 - 0.30 (m, 2H)。(可互相轉化之阻轉異構物之混合物)

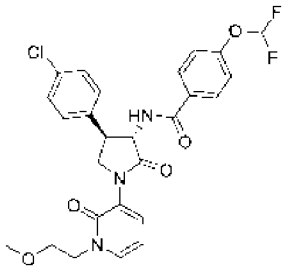
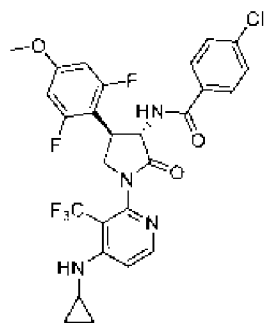
152		684.3	方法D， RT = 1.97 min， 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.06 (d, J = 8.3 Hz, 1H), 8.49 (br d, J = 4.6 Hz, 1H), 7.88 (d, J = 8.8 Hz, 2H), 7.35 (t, J = 73.6 Hz, 1H), 7.28 (d, J = 8.8 Hz, 2H), 7.13 -7.08 (m, 1H), 6.79 (d, J = 10.8 Hz, 2H), 5.08 - 4.94 (m, 1H), 4.22 (q, J = 10.0 Hz, 1H), 4.14 - 4.01 (m, 1H), 3.97 - 3.87 (m, 1H), 3.76 (s, 3H), 3.53 (br d, J = 12.5 Hz, 2H), 2.88 - 2.69 (m, 2H), 2.31 - 2.16 (m, 2H), 2.15 (s, 3H), 1.05 (s, 3H), 1.03 (s, 3H)。
153		612.2	方法D， RT = 1.702 min， 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.12 (d, J = 8.6 Hz, 1H), 8.02 - 7.86 (m, 2H), 7.70 (dd, J = 7.1, 2.0 Hz, 1H), 7.57 (dd, J = 7.3, 2.0 Hz, 1H), 7.52 - 7.41 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.34 (t, J = 7.1 Hz, 1H), 5.22 - 4.97 (m, 3H), 4.19 - 4.03 (m, 1H), 4.03 - 3.88 (m, 2H), 3.83 - 3.57 (m, 4H), 3.76 (s, 3H), 3.23 (s, 3H)。

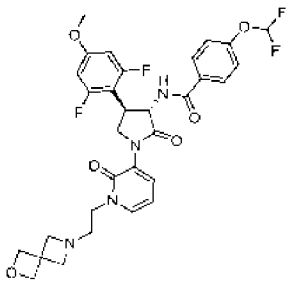
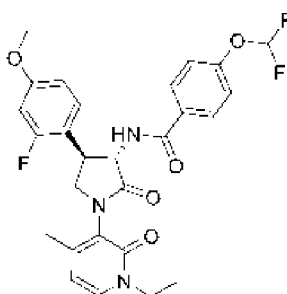
154		580.2	方法D， RT = 1.794 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.07 (d, J = 8.6 Hz, 1H), 7.98 (d, J = 8.8 Hz, 2H), 7.69 (dd, J = 6.8, 2.0 Hz, 1H), 7.57 (dd, J = 7.1, 2.0 Hz, 1H), 7.48 (d, J = 8.3 Hz, 4H), 7.43 - 7.35 (m, 2H), 6.34 (t, J = 7.0 Hz, 1H), 5.11 - 4.95 (m, 3H), 4.17 (t, J = 8.1 Hz, 1H), 3.85 - 3.62 (m, 6H), 3.23 (s, 3H)。
155		636.2	方法D， RT = 1.887 min， 96.2%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.12 (d, J = 8.6 Hz, 1H), 8.00 - 7.88 (m, 2H), 7.70 (dd, J = 6.8, 2.0 Hz, 1H), 7.64 (dd, J = 7.2, 2.0 Hz, 1H), 7.48 (d, J = 8.1 Hz, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.37 (t, J = 7.0 Hz, 1H), 5.10 (dd, J = 10.4, 8.9 Hz, 1H), 4.44 (dd, J = 2.8, 13.1 Hz, 1H), 4.39 - 4.27 (m, 1H), 4.16 - 3.99 (m, 2H), 3.97 - 3.89 (m, 2H), 3.85 (dd, J = 13.1, 9.4 Hz, 1H), 3.76 (s, 3H)。

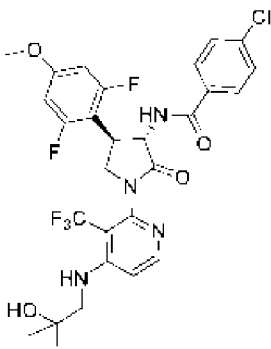
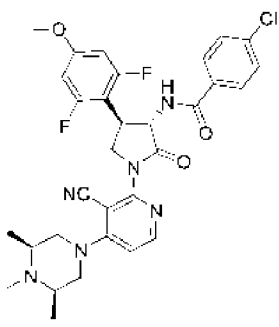
156		650.2	方法D， RT = 2.067 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.14 (d, J = 8.6 Hz, 1H), 8.01 - 7.86 (m, 2H), 7.71 (dd, J = 6.8, 2.0 Hz, 1H), 7.67 (dd, J = 7.3, 2.0 Hz, 1H), 7.48 (d, J = 8.1 Hz, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.39 (t, J = 7.1 Hz, 1H), 5.12 (dd, J = 10.9, 8.7 Hz, 1H), 4.42 (dd, J = 13.4, 3.4 Hz, 1H), 4.38 - 4.26 (m, 1H), 4.15 - 3.93 (m, 4H), 3.76 (s, 3H), 3.34 (s, 3H)。
157		576.2	方法D， RT = 1.815 min，99%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.05 (d, J = 8.5 Hz, 1H), 8.15 (dd, J = 5.0, 2.0 Hz, 1H), 7.97 - 7.87 (m, 2H), 7.79 (dd, J = 7.5, 2.0 Hz, 1H), 7.35 (t, J = 72.0 Hz, 1H), 7.28 - 7.26 (m, 2H), 7.12 (dd, J = 7.8, 4.8 Hz, 1H), 6.80 (d, J = 10.5 Hz, 2H), 5.60 (dt, J = 4.4, 2.3 Hz, 1H), 5.05 (dd, J = 8.5, 11.0 Hz, 1H), 4.19 - 4.12 (m, 1H), 4.05 - 3.94 (m, 2H), 3.94 - 3.81 (m, 3H), 3.80 - 3.72 (m, 4H), 2.31 - 2.20 (m, 1H), 2.11 - 2.01 (m, 1H)。

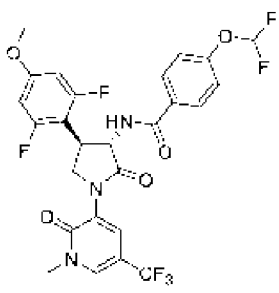
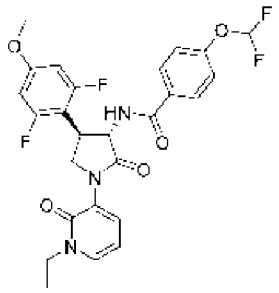
158		626.2	方法D， RT = 1.81 min，98%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.11 (d, <i>J</i> = 8.6 Hz, 1H), 7.97 - 7.78 (m, 3H), 7.35 (t, <i>J</i> = 73.6 Hz, 1H), 7.29 - 7.27 (m, 2H), 7.13 (dd, <i>J</i> = 8.9, 2.6 Hz, 1H), 6.80 (d, <i>J</i> = 10.8 Hz, 2H), 5.19 - 5.04 (m, 1H), 4.29 - 4.14 (m, 2H), 4.09 - 3.97 (m, 1H), 3.92 m 3.85 (m, 2H), 3.77 (s, 3H), 3.59 (t, <i>J</i> = 7.2 Hz, 2H), 2.41 - 2.37 (m, 2H)。
159		536.2	方法D， RT = 1.791 min， 97.8%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.24 (d, <i>J</i> = 8.8 Hz, 1H), 8.02 (d, <i>J</i> = 8.3 Hz, 2H), 7.88 (d, <i>J</i> = 8.3 Hz, 2H), 7.77 (dd, <i>J</i> = 6.7, 2.1 Hz, 1H), 7.59 (dd, <i>J</i> = 7.1, 2.1 Hz, 1H), 6.78 (d, <i>J</i> = 10.5 Hz, 2H), 6.36 (t, <i>J</i> = 7.0 Hz, 1H), 5.15 (dd, <i>J</i> = 11.1, 8.7 Hz, 1H), 4.17 - 4.06 (m, 1H), 4.04 - 3.94 (m, 4H), 3.77 (s, 3H), 1.25 (t, <i>J</i> = 7.2 Hz, 3H)。

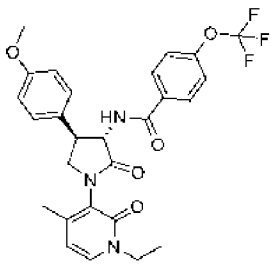
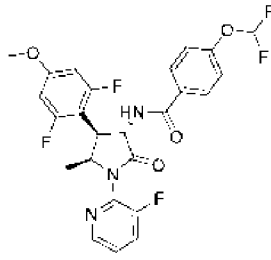
160		593.2	方法D， RT = 1.61 min，98%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.19 (d, J = 8.8 Hz, 1H), 8.12 (d, J = 6.4 Hz, 1H), 7.84 (d, J = 8.6 Hz, 2H), 7.58 (d, J = 8.6 Hz, 2H), 6.84 - 6.69 (m, 3H), 5.16 (dd, J = 8.8, 10.5 Hz, 1H), 4.77(br s, 1H), 4.24 - 4.04 (m, 3H), 3.76 (s, 3H), 3.72 - 3.70(m, 1H), 3.56 - 3.51 (m, 2H), 2.85 (d, J = 9.0 Hz, 1H), 2.58 (d, J = 9.0, Hz, 1H), 2.30 (s, 3H), 1.94 (br d, J = 9.5 Hz, 1H), 1.83 (br d, J = 9.5 Hz, 1H)。
161		632.2	方法D， RT = 1.930 min， 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.02 (d, J = 8.3 Hz, 1H), 7.88 (d, J = 8.8 Hz, 2H), 7.73 - 7.68 (m, 2H), 7.34 (t, J = 73.6 Hz, 1H), 7.29 -7.26 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.39 (t, J = 7.0 Hz, 1H), 5.12 (dd, J = 10.5, 8.8 Hz, 1H), 4.42 (dd, J = 13.4, 3.4 Hz, 1H), 4.35 - 4.22 (m, 1H), 4.15 - 3.92 (m, 4H), 3.76 (s, 3H), 3.36 (s, 3H)。

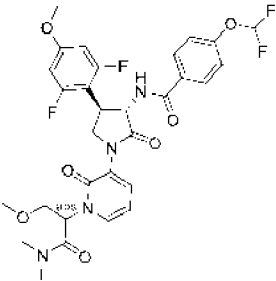
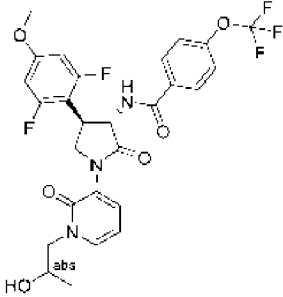
162		532.2	方法D， RT = 1.711 min， 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 8.97 (d, J = 8.6 Hz, 1H), 7.97 - 7.87 (m, 2H), 7.65 (dd, J = 6.8, 2.0 Hz, 1H), 7.59 (dd, J = 7.3, 2.0 Hz, 1H), 7.52 - 7.39 (m, 4H), 7.34 (t, J = 73.6 Hz, 1H), 7.26 (d, J = 8.0 Hz, 2H), 6.33 (t, J = 7.0 Hz, 1H), 5.10 - 4.95 (m, 1H), 4.20 - 4.08 (m, 3H), 3.86 - 3.71 (m, 2H), 3.60 (t, J = 5.3 Hz, 2H), 3.25 (s, 3H)。
163		581.2	方法D， RT = 2.03 min， 98.4%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.09 (br d, J = 8.8 Hz, 1H), 8.32 - 8.21 (m, 1H), 7.91 - 7.78 (m, 2H), 7.65 - 7.51 (m, 2H), 7.14 (t, J = 5.6 Hz, 1H), 6.93 - 6.84 (m, 1H), 6.78 (d, J = 10.8 Hz, 2H), 5.21 - 5.02 (m, 1H), 4.34 - 4.26 (m, 1H), 4.22 - 4.09 (m, 1H), 3.78 (s, 3H), 3.77 - 3.66 (m, 1H), 2.27 - 2.23 (m, 1H), 0.85 - 0.76 (m, 2H), 0.62 - 0.55 (m, 2H)。

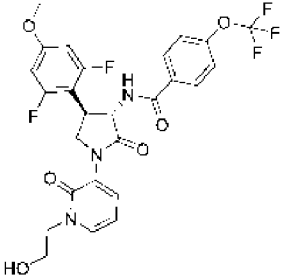
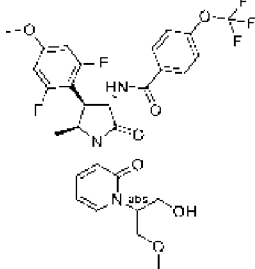
164		631.3	方法D， RT = 1.459 min， 98.3%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.01 (d, J = 8.8 Hz, 1H), 7.89 (d, J = 8.8 Hz, 2H), 7.69 - 7.55 (m, 2H), 7.34 (t, J = 73.6 Hz, 1H), 7.28 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.31 (t, J = 7.1 Hz, 1H), 5.11 (dd, J = 10.9, 8.7 Hz, 1H), 4.57 (s, 4H), 4.15 - 4.05 (m, 1H), 4.00 - 3.92 (m, 2H), 3.90 - 3.82 (m, 2H), 3.76 (s, 3H), 3.29 (s, 4H), 2.65 - 2.57 (m, 2H)。
165		530.2	方法D， RT = 1.67 min， 98.58%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.99 - 8.94 (m, 1H), 8.00 - 7.83 (m, 2H), 7.68 - 7.74 (tm, 1H), 7.37 - 7.52 (m, 1H), 7.27 - 7.22 (m, 1H), 7.57 - 7.10 (m, 2H), 6.90 - 6.71 (m, 2H), 6.22 (d, J = 6.8 Hz, 1H), 5.43 - 4.74 (m, 1H), 4.21 - 3.85 (m, 5H), 3.74 (2s, 3H), 2.21 - 2.05 (2s, 3H), 1.31 - 1.11 (m, 3H)。 (可互相轉化之阻轉異構物之混合物)

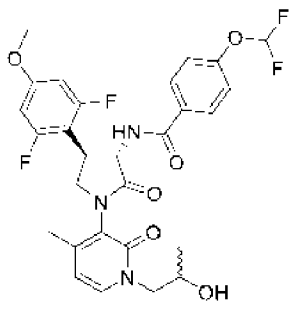
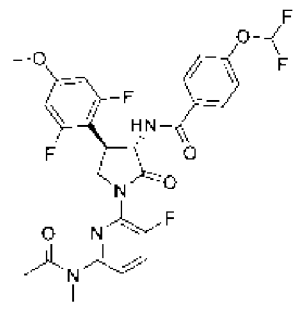
166		613.2	方法D， RT = 1.87 min， 98.43%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.09 (d, J = 8.8 Hz, 1H), 8.25 - 8.13 (m, 1H), 7.90 - 7.75 (m, 2H), 7.56 (d, J = 8.6 Hz, 2H), 6.96 - 6.84 (m, 1H), 6.78 (d, J = 10.8 Hz, 2H), 5.95 (br s, 1H), 5.14 (br dd, J = 11.0, 8.8 Hz, 1H), 4.35 - 4.28 (m, 1H), 4.26 - 4.14 (m, 2H), 3.77 (s, 3H), 3.76 - 3.71 (m, 1H), 3.25 - 3.13 (m, 2H), 1.17 (s, 3H), 1.15 (s, 3H)。
167		609.3	方法D， RT = 1.88 min，98%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 10.08 (br s, 1H), 9.20 (d, J = 8.6 Hz, 1H), 8.43 (d, J = 5.9 Hz, 1H), 7.84 (d, J = 8.6 Hz, 2H), 7.58 (d, J = 8.6 Hz, 2H), 6.80 (d, J = 10.8 Hz, 2H), 5.10 (dd, J = 10.8, 8.8 Hz, 1H), 4.40 - 4.28 (m, 1H), 4.26 - 4.18 (m, 1H), 4.13 - 4.01 (m, 3H), 3.77 (s, 3H), 3.55 - 3.50 (m, 2H), 3.33 - 3.23 (m, 2H), 2.78 (s, 3H), 1.45 - 1.21 (m, 6H)。

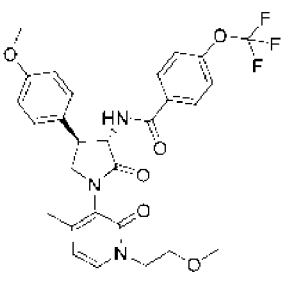
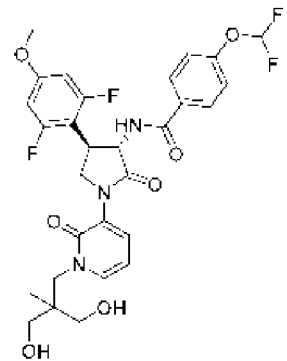
168		588.2	方法D， RT = 1.850 min， 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 8.99 (br d, J = 8.6 Hz, 1H), 8.46 (s, 1H), 7.95 - 7.73 (m, 3H), 7.34 (t, J = 73.6 Hz, 1H), 7.30 - 7.24 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 5.10 (dd, J = 10.8, 8.6 Hz, 1H), 4.22 - 3.95 (m, 3H), 3.77 (s, 3H), 3.58 (s, 3H)。
169			方法D， RT = 1.424 min， 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.00 (d, J = 8.5 Hz, 1H), 7.93 - 7.85 (m, 2H), 7.76 (dd, J = 6.5, 2.0 Hz, 1H), 7.58 (dd, J = 7.5, 2.0 Hz, 1H), 7.35 (t, J = 73.6 Hz, 1H), 7.29 - 7.27 (m, 2H), 6.77 (d, J = 11.0 Hz, 2H), 6.35 (t, J=7.0 Hz, 1H), 5.11 (dd, J = 10.8, 8.8 Hz, 1H), 4.14 - 4.05 (m, 1H), 4.03 - 3.94 (m, 4H), 3.77 (s, 3H), 1.25 (t, J = 7.3 Hz, 3H)。

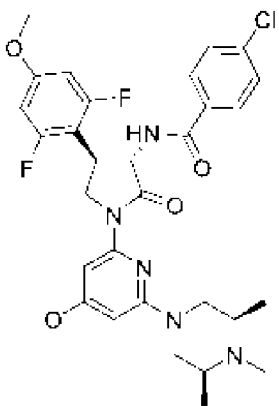
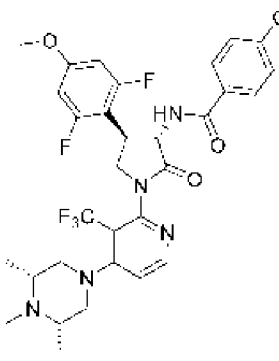
170		530.2	方法D， RT = 1.749 min， 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.12 - 9.89 (m, 1H), 8.12 - 7.89 (m, 2H), 7.75 - 7.52 (m, 1H), 7.52 - 7.42 (m, 2H), 7.42 - 7.16 (m, 2H), 6.99 - 6.65 (m, 2H), 6.31 - 6.09 (m, 1H), 5.32 - 4.68 (m, 1H), 4.16 - 3.77 (m, 4H), 3.76 - 3.51 (m, 4H), 2.23 - 1.94 (2s, 3H), 1.34 - 1.15 (m, 3H)。(可互相轉化之阻轉 異構物之混合物)
171		522.1	方法D， RT = 1.88 min，99%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.05 - 8.92 (m, 1H), 8.41 (br d, J = 4.9 Hz, 1H), 7.98 - 7.78 (m, 3H), 7.52-7.49 (m, 1H), 7.35 (t, J = 73.6 Hz, 1H), 7.27 - 7.25 (m, 2H), 6.86 - 6.72 (m, 2H), 5.61 - 5.48 (m, 1H), 4.86 - 4.77 (m, 1H), 4.40- 4.35 (m, 1H), 3.78 (s, 3H), 0.99 (d, J = 6.8 Hz, 3H)。

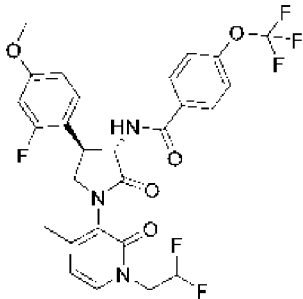
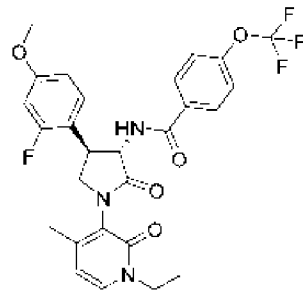
172		635.3	方法D， RT = 1.614 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.01 (d, J = 8.6 Hz, 1H), 7.94 - 7.83 (m, 2H), 7.72 (dd, J = 7.1, 2.0 Hz, 1H), 7.61 (dd, J = 7.2, 2.0 Hz, 1H), 7.34 (t, J = 73.6 Hz, 1H), 7.29 - 7.24 (m, 1H), 6.76 (d, J = 11.0 Hz, 2H), 6.41 (t, J = 7.1 Hz, 1H), 6.07 (dd, J = 8.7, 5.3 Hz, 1H), 5.09 (dd, J = 11.1, 8.7 Hz, 1H), 4.13 - 4.04 (m, 1H), 4.03 - 3.79 (m, 5H), 3.76 (s, 3H), 3.26 (s, 3H), 3.11 (s, 3H), 2.84 (s, 3H)。
173		582.2	方法D， RT = 1.690 min， 98.6%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.11 (d, J = 8.6 Hz, 1H), 7.99 - 7.86 (m, 2H), 7.63 - 7.58 (m, 2H), 7.53 - 7.37 (m, 2H), 6.76 (d, J = 10.8 Hz, 2H), 6.31 (t, J = 7.1 Hz, 1H), 5.12 (dd, J = 11.0, 8.6 Hz, 1H), 4.94 (br d, J = 5.1 Hz, 1H), 4.17 - 4.03 (m, 2H), 4.03 - 3.83 (m, 3H), 3.76 (s, 3H), 3.63 (dd, J = 12.8, 8.2 Hz, 1H), 1.09 (d, J = 6.4 Hz, 3H)。

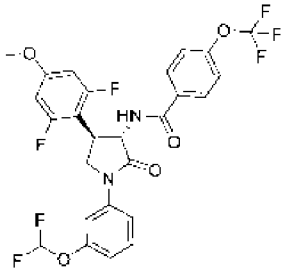
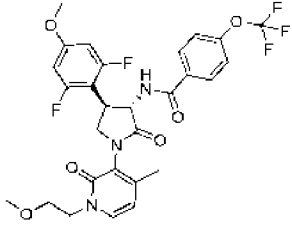
174		568.1	方法D， RT = 2.171 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.12 (d, J = 8.5 Hz, 1H), 7.99 - 7.90 (m, 2H), 7.65 (dd, J = 6.5, 2.0 Hz, 1H), 7.59 (dd, J = 7.3, 2.0 Hz, 1H), 7.49 (d, J = 8.0 Hz, 2H), 6.77 (d, J = 10.5 Hz, 2H), 6.35 - 6.29 (m, 1H), 5.12 (dd, J = 11.3, 8.8 Hz, 1H), 4.97 - 4.92 (m, 1H), 4.14 - 4.05 (m, 1H), 4.03 - 3.95 (m, 4H), 3.77 (s, 3H), 3.67 - 3.62 (m, 2H)。
175		626.2	方法D， RT = 1.72 min，99%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.97 (br d, J = 8.1 Hz, 1H), 7.96 (d, J = 8.6 Hz, 2H), 7.74 - 7.66 (m, 1H), 7.56 (dd, J = 7.0, 1.3 Hz, 1H), 7.45 (d, J = 8.6 Hz, 2H), 6.77 (d, J = 11.5 Hz, 2H), 6.33 (t, J = 7.0 Hz, 1H), 5.71 - 5.61 (m, 1H), 5.14 - 4.97 (m, 2H), 4.67 - 4.56 (m, 1H), 4.29 (dd, J = 8.3, 11.7 Hz, 1H), 3.83 - 3.69, (m, 5H), 3.65 (td, J = 5.4, 10.9 Hz, 2H), 3.23 (s, 3H), 0.91 (br d, J = 6.8 Hz, 3H)。

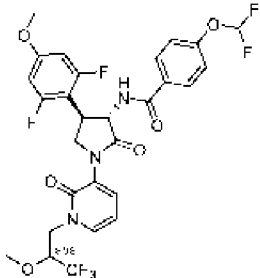
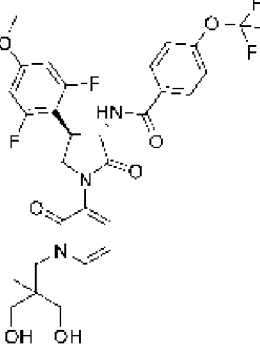
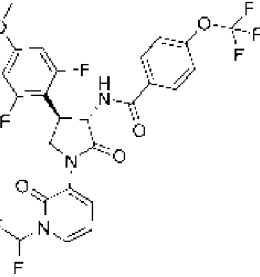
176		578.2	方法D， RT = 1.584 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.11 - 8.92 (m, 1H), 7.88 (d, J = 9.0 Hz, 2H), 7.52 (s, 1H), 7.34 (t, J = 72 Hz, 1H), 7.28 - 7.11 (m, 1H), 6.77 (br d, J = 10.8 Hz, 2H), 6.24 - 6.14 (m, 1H), 5.40 - 5.28 (m, 1H), 4.97 - 4.84 (m, 2H), 4.30 - 3.98 (m, 3H), 3.93 - 3.84 (m, 1H), 3.80 - 3.71 (2s, 3H), 3.62 - 3.43 (m, 2H), 2.23 - 2.01 (2s, 3H), 1.08 (d, J = 6.4 Hz, 3H)。(可互相轉化之阻轉異構物之混合物)
177		579.3	方法D， RT = 1.69 min，94%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.10 (d, J = 8.6 Hz, 1H), 7.96 (t, J = 8.9 Hz, 1H), 7.92 - 7.84 (m, 2H), 7.56 (dd, J = 8.4, 2.6 Hz, 1H), 7.34 (t, J = 73.6 Hz, 1H), 7.27 - 7.25 (m, 2H), 6.79 (d, J = 10.8 Hz, 2H), 5.14 - 5.04 (m, 1H), 4.29 - 4.13 (m, 2H), 4.11 - 4.01 (m, 1H), 3.77 (s, 3H), 3.27 (s, 3H), 2.07 (s, 3H)。

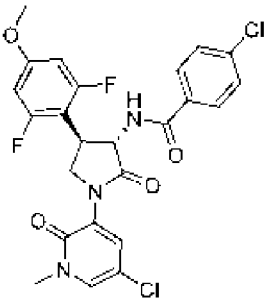
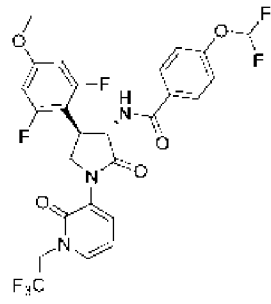
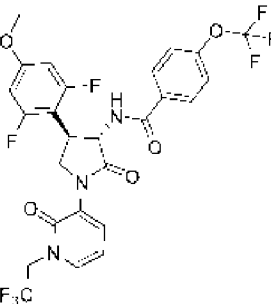
178		560.3	方法D， RT = 1.738 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.09 - 8.98 (m, 1H), 8.06 - 7.91 (m, 2H), 7.59 - 7.52 (m, 1H), 7.51 - 7.48 (m, 2H), 7.41 - 7.35 (m, 1H), 7.32 (d, J = 8.6 Hz, 1H), 6.93 - 6.89 (m, 2H), 6.20 (d, J = 7.1 Hz, 1H), 5.27 - 4.66 (m, 1H), 4.19 - 3.99 (m, 2H), 3.95 - 3.80 (m, 2H), 3.74 - 3.68 (2s, 3H), 3.66 - 3.45 (m, 3H), 3.24 (s, 3H), 2.23 - 2.03 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)
179		608.2	方法D， RT = 1.506 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.06 - 8.98 (m, 1H), 7.93 - 7.85 (m, 2H), 7.69 - 7.61 (m, 2H), 7.34 (t, J = 73.6 Hz, 1H), 7.28 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.40 (t, J = 7.0 Hz, 1H), 5.14 (dd, J = 11.1, 8.4 Hz, 1H), 4.74 (t, J = 5.4 Hz, 2H), 4.15 - 4.04 (m, 1H), 4.03 - 3.89 (m, 4H), 3.76 (s, 3H), 3.24 - 3.11 (m, 4H), 0.78 (s, 3H)。

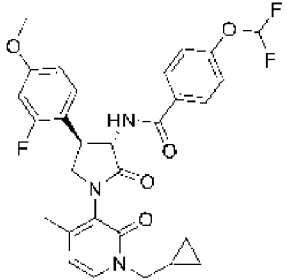
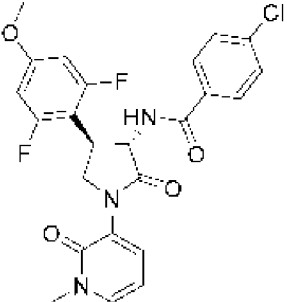
180		614.2	方法C， RT = 1.75 min， 89.7%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.12 (br d, J = 8.3 Hz, 1H), 7.91 - 7.75 (m, 2H), 7.58 (br d, J = 8.6 Hz, 2H), 7.43 (s, 1H), 6.90 - 6.71 (m, 2H), 6.34 (s, 1H), 5.08 - 4.97 (m, 1H), 4.55 - 4.38 (m, 1H), 4.15 - 4.00 (m, 1H), 3.94 - 3.83 (m, 1H), 3.82 (s, 3H), 3.78 (s, 3H), 3.45 - 3.37 (m, 2H), 3.33 - 3.28 (m, 2H), 2.93 - 2.82 (m, 2H), 2.79 (s, 3H) 1.34 (d, J = 6.4 H, 6H)。
181		652.2	方法D， RT = 2.04 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.09 (br d, J = 8.6 Hz, 1H), 8.49 - 8.35 (m, 1H), 7.81 (br d, J = 6.8 Hz, 2H), 7.60 - 7.51 (m, 2H), 7.18 (br d, J = 5.9 Hz, 1H), 6.78 (d, J = 10.8 Hz, 2H), 5.18 - 5.00 (m, 1H), 4.44 - 4.05 (m, 2H), 3.88 - 3.75 (m, 1H) 3.74 (s, 3H), 3.44 - 3.37 (m, 2H), 2.92 - 2.69 (m, 2H), 2.37 - 2.22 (m, 2H), 2.21 (s, 3H), 1.05 (d, J = 6.4 Hz, 6H)。

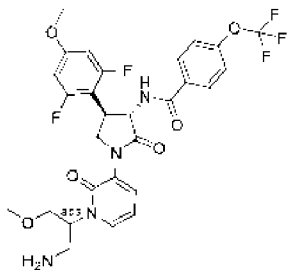
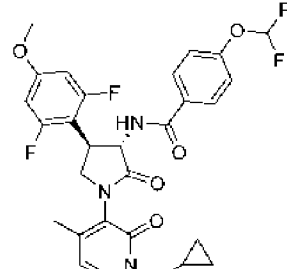
182		584.2	方法D， RT = 1.91 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.12 - 9.89 (m, 1H), 8.06 - 7.89 (m, 2H), 7.69 - 3.61 (m, 1H), 7.58 - 7.40 (m, 3H), 6.91 - 6.71 (m, 2H), 6.38 - 6.35 (m, 1H), 6.32 (t, J= 57.2 Hz, 1H), 5.40 - 4.78 (m, 1H), 4.54 - 4.33 (m, 2H), 4.17 - 3.98 (m, 1H), 3.74 - 3.70 (2s, 3H), 3.65 - 3.56 (m, 1H), 3.47 - 3.38 (m, 1H), 2.24 - 2.08 (2s, 3H)。 (可互相轉化之阻轉異構物之混合物)
183		548.2	方法D， RT = 1.81 min， 94.5%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.12- 9.02 (m, 1H), 8.02 - 7.88 (m, 2H), 7.69 - 7.62 (m, 1H), 7.57 - 7.39 (m, 3H), 6.88 - 6.70 (m, 2H), 6.26 - 6.21 (m, 1H), 5.40 - 4.78 (m, 1H), 4.17 - 3.89 (m, 3H), 3.74 - 3.70 (2s, 3H), 3.61 - 3.58 (m, 1H), 3.42 - 3.37 (m, 1H), 2.22 - 2.02 (2s, 3H), 1.28 - 1.18 (m, 3H)。 (可互相轉化之阻轉異構物之混合物)

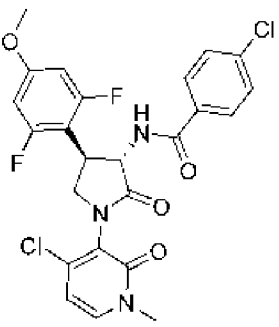
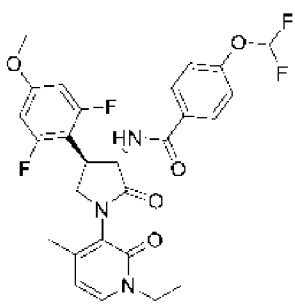
184		573.1	方法D， RT = 2.24 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.17 (d, J = 8.6 Hz, 1H), 7.95 (d, J = 8.6 Hz, 2H), 7.71 (s, 1H), 7.62 - 7.55 (m, 1H), 7.51 - 7.46 (m, 3H), 7.26 (t, J = 76.2 Hz, 1H), 7.02 - 6.96 (m, 1H), 6.80 (d, J = 10.8 Hz, 2H), 5.11 - 4.98 (m, 1H), 4.24 - 4.07 (m, 2H), 4.05 - 3.96 (m, 1H), 3.78 (s, 3H)。
185		596.2	方法D， RT = 1.850 min， 98.6%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.25 - 9.01 (m, 1H), 8.06 - 7.89 (m, 2H), 7.64 - 7.52 (m, 1H), 7.52 - 7.38 (m, 2H), 6.77 (dd, J = 10.8, 5.9 Hz, 2H), 6.26 - 6.12 (m, 1H), 5.39 - 4.84 (m, 1H), 4.30 - 3.99 (m, 4H), 3.79 - 3.71 (m, 3H), 3.62 - 3.54 (m, 2H), 3.54 - 3.44 (m, 1H), 3.26 - 3.21 (2s, 3H), 2.23 - 1.99 (m, 3H)。(可互相轉化之阻轉異構物之混合物)

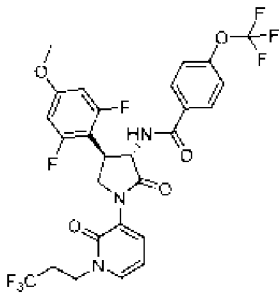
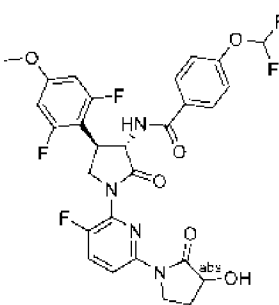
186		632.3	方法C， RT = 1.911 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.02 (d, J = 8.3 Hz, 1H), 7.89 (d, J = 8.8 Hz, 2H), 7.76 - 7.61 (m, 2H), 7.34 (t, J = 73.6 Hz, 1H), 7.28 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.39 (t, J = 7.1 Hz, 1H), 5.17 - 5.03 (m, 1H), 4.42 (dd, J = 13.4, 3.4 Hz, 1H), 4.38 - 4.26 (m, 1H), 4.16 - 3.92 (m, 4H), 3.76 (s, 3H), 3.36 (s, 3H)。
187		626.2	方法D， RT = 1.788 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.17 - 9.09 (m, 1H), 8.00 - 7.92 (m, 2H), 7.71 - 7.62 (m, 2H), 7.53 - 7.46 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.40 (t, J = 7.1 Hz, 1H), 5.15 (dd, J = 11.1, 8.4 Hz, 1H), 4.74 (br t, J = 5.4 Hz, 2H), 4.17 - 4.04 (m, 1H), 4.02 - 3.88 (m, 4H), 3.76 (s, 3H), 3.23 - 3.10 (m, 4H), 0.78 (s, 3H)。
188		574.2	方法D， RT = 1.940 min， 98.8%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.12 (d, J = 8.6 Hz, 1H), 7.95 - 7.70 (m, 4H), 7.92 (t, J = 59.6 Hz, 1H), 7.49 (d, J = 8.3 Hz, 2H), 6.78 (d, J = 10.8 Hz, 2H), 6.56 (t, J = 7.2 Hz, 1H), 5.09 (dd, J = 11.0, 8.6 Hz, 1H), 4.18 - 4.08 (m, 1H), 4.06 - 3.94 (m, 2H), 3.77 (s, 3H)。

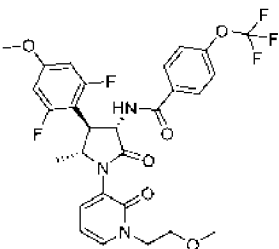
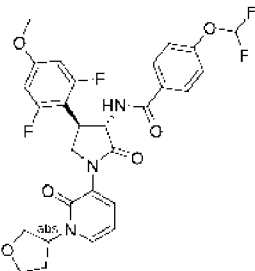
189		522	方法D， RT = 1.730 min， 99.3%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.07 (d, J = 8.3 Hz, 1H), 8.07 (d, J = 2.9 Hz, 1H), 7.88 - 7.78 (m, 2H), 7.70 (d, J = 2.9 Hz, 1H), 7.63 - 7.50 (m, 2H), 6.78 (d, J = 10.8 Hz, 2H), 5.10 (dd, J = 10.5, 8.8 Hz, 1H), 4.15 - 3.92 (m, 3H), 3.76 (s, 3H), 3.49 (s, 3H)。
190		588.2	方法D， RT = 1.803 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.03 (d, J = 8.6 Hz, 1H), 7.94 - 7.83 (m, 2H), 7.78 - 7.72 (m, 1H), 7.68 (dd, J = 7.2, 1.8 Hz, 1H), 7.34 (t, J = 73.6 Hz, 1H), 7.28 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.46 (t, J = 7.1 Hz, 1H), 5.12 (dd, J = 11.2, 8.6 Hz, 1H), 5.03 - 4.86 (m, 2H), 4.17 - 4.06 (m, 1H), 4.03 - 3.90 (m, 2H), 3.76 (s, 3H)。
191		606.2	方法D， RT = 1.972 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.13 (d, J = 8.6 Hz, 1H), 7.99 - 7.84 (m, 2H), 7.80 - 7.71 (m, 1H), 7.68 (dd, J = 7.1, 2.0 Hz, 1H), 7.55 - 7.36 (m, 2H), 6.78 (d, J = 10.8 Hz, 2H), 6.46 (t, J = 7.1 Hz, 1H), 5.13 (dd, J = 11.1, 8.7 Hz, 1H), 5.03 - 4.84 (m, 2H), 4.17 - 4.05 (m, 1H), 4.04 - 3.88 (m, 2H), 3.77 (s, 3H)。

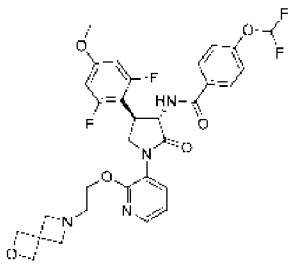
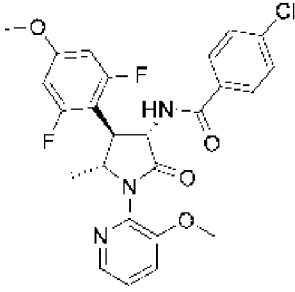
192		556.3	方法D， RT = 1.81 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.03 - 9.86 (m, 1H), 8.01 - 7.84 (m, 2H), 7.72 - 8.65 (m, 1H), 7.60 - 7.39 (m, 1H), 7.35 (t, J = 73 Hz, 1H), 7.26 - 7.19 (m, 2H), 6.90 - 6.72 (m, 2H), 6.22 (d, J = 6.8 Hz, 1H), 5.43 - 4.76 (m, 1H), 4.20 - 3.93 (m, 2H), 3.90 - 3.74 (m, 2H), 3.72 - 3.66 (2s, 3H), 3.42 - 3.37 (m, 1H), 2.23 - 1.99 (2s, 3H), 1.31 - 1.15 (m, 1H), 0.55 - 0.45 (m, 2H), 0.41 - 0.30 (m, 2H)。 (可互相轉化之阻轉異構物之混合物)
193		488.2	方法D， RT = 2.126 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.09 (br d, J = 8.0 Hz, 1H), 7.92 - 7.71 (m, 3H), 7.61 - 3.52 (m, 3H), 6.78 (br d, J = 11.0 Hz, 2H), 6.33 (br t, J = 6.8 Hz, 1H), 5.12 (br t, J = 9.3 Hz, 1H), 4.09 (br d, J = 8.5 Hz, 1H), 3.97 (br d, J = 8.5 Hz, 2H), 3.77 (s, 3H), 3.51 (br s, 3H)。

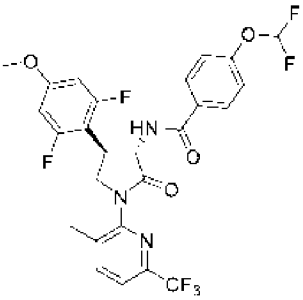
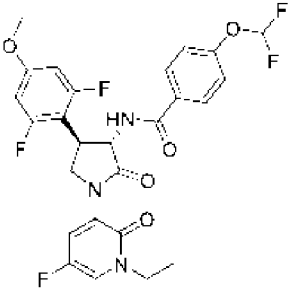
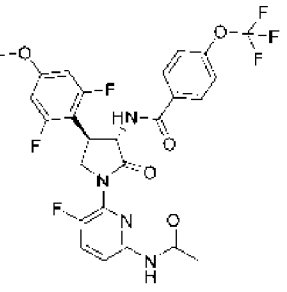
194		611.3	方法C， RT = 1.510 min， 96.6%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.11 (br d, <i>J</i> = 7.6 Hz, 1H), 7.98 - 7.91 (m, 2H), 7.68 (br d, <i>J</i> = 7.1 Hz, 1H), 7.56 (dt, <i>J</i> = 1.1, 6.9 Hz, 1H), 7.51 - 7.41 (m, 2H), 6.81 - 6.70 (m, 2H), 6.40 - 6.31 (m, 1H), 5.12 - 4.97 (m, 2H), 4.12 - 4.07 (m, 2H), 4.02 - 3.92 (m, 2H), 3.76 (s, 3H), 3.65 - 3.61 (m, 1H), 3.34 - 3.31 (m, 1H), 3.25 - 3.16 (m, 4H), 3.06 - 3.01 (m, 2H)。
195		574.3	方法D， RT = 1.86 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.18 - 8.77 (m, 1H), 8.02 - 7.63 (m, 3H), 7.33 (t, <i>J</i> = 76 Hz, 1H), 7.28 - 7.24 (m, 2H), 6.81 - 6.72 (m, 2H), 6.32 - 6.10 (m, 1H), 5.42 - 4.80 (m, 1H), 4.32 - 4.04 (m, 2H), 3.93 - 3.66 (m, 5H), 3.55 - 3.43 (m, 1H), 2.24 - 1.99 (2s, 3H), 1.29 - 1.11 (m, 1H), 0.55 - 0.42 (m, 2H), 0.42 - 0.30 (m, 2H)。(阻轉異構物之混合物)

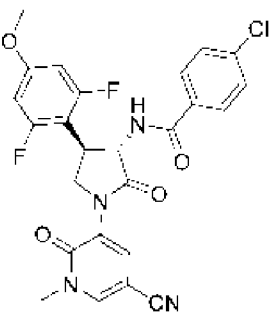
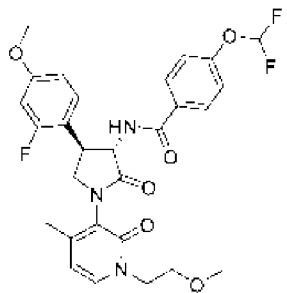
196		522.2	方法D， RT = 1.680 min， 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.19 - 9.00 (m, 1H), 7.92 - 7.75 (m, 3H), 7.64 - 7.47 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.53 (dd, J = 7.3, 8.6 Hz, 1H), 5.37 - 5.09 (m, 1H), 4.25 - 4.11 (m, 1H), 4.04 - 3.89 (m, 1H), 3.76 (s, 3H), 3.64 - 3.56 (m, 1H), 3.52 - 3.47 (2s, 3H)。 (可互相轉化之阻轉異構物之 混合物)
197		548.2	方法D， RT = 1.695 min，98%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.13 - 8.88 (m, 1H), 7.96 - 7.76 (m, 2H), 7.71 - 7.64 (m, 1H), 7.34 (t, J = 76 Hz, 1H), 7.28 - 7.24 (m, 2H), 6.84 - 6.66 (m, 2H), 6.31 - 6.16 (m, 1H), 5.36 - 4.82 (m, 1H), 4.29 - 4.07 (m, 2H), 4.02 - 3.83 (m, 2H), 3.80 - 3.72 (2s, 3H), 3.53 - 3.45 (m, 1H), 2.23 - 1.99 (2s, 3H), 1.26 - 1.17 (m, 3H)。(可 互相轉化之阻轉異構物之混 合物)

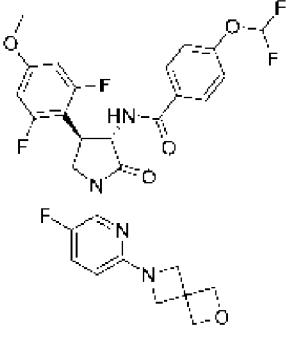
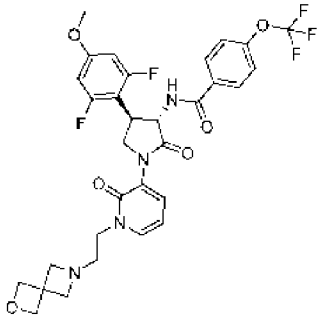
198		529.3	方法D， RT = 2.851 min，99%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.16 - 9.03 (m, 1H), 8.02 - 7.87 (m, 2H), 7.83 - 7.73 (m, 1H), 7.68 - 7.57 (m, 1H), 7.52 - 7.42 (m, 2H), 6.83 - 6.71 (m, 2H), 6.46 - 6.30 (m, 1H), 5.15 - 5.06 (m, 1H), 4.26 - 4.17 (m, 2H), 4.14 - 4.05 (m, 1H), 4.02 - 3.94 (m, 2H), 3.76 (s, 3H), 2.84 - 2.69 (m, 2H)。
199		607.2	方法D， RT = 1.66 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.11 (d, J = 8.3 Hz, 1H), 8.29 (dd, J = 8.9, 3.1 Hz, 1H), 7.94 (t, J = 9.2 Hz, 1H), 7.91 - 7.83 (m, 2H), 7.35 (t, J = 73.6 Hz, 1H), 7.28 - 7.26 (m, 2H), 6.80 (d, J = 10.8 Hz, 2H), 5.94 - 5.77 (m, 1H), 5.10 (dd, J = 10.5, 8.6 Hz, 1H), 4.39 (br t, J = 8.4 Hz, 1H), 4.30 - 4.17 (m, 2H), 4.12 - 3.96 (m, 2H), 3.77 (s, 3H), 3.68-3.66 (m, 1H), 2.44 - 2.34 (m, 1H), 1.89 - 1.74 (m, 1H)。

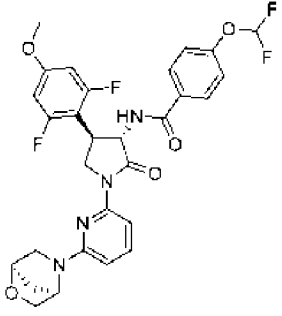
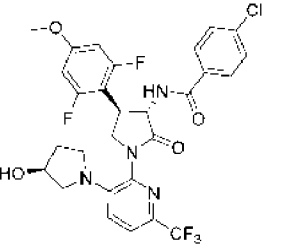
200		596.3	方法D， RT = 1.86 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.08 (d, J = 8.6 Hz, 1H), 8.01 - 7.85 (m, 2H), 7.69 (dd, J = 6.8, 2.0 Hz, 1H), 7.53 - 7.39 (m, 3H), 6.87 - 6.71 (m, 2H), 6.34 (t, J = 7.0 Hz, 1H), 5.12 (dd, J = 11.2, 8.6 Hz, 1H), 4.53-4.49 (m, 1H), 4.19 - 4.04 (m, 2H), 3.77 (s, 3H), 3.67 - 3.54 (m, 3H), 3.24 (s, 3H), 0.99 (d, J = 6.1 Hz, 3H)。
201		576.2	方法D， RT = 1.591 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 7.94 - 7.85 (m, 2H), 7.64 (dd, J = 6.8, 2.0 Hz, 1H), 7.59 (dd, J = 7.2, 2.0 Hz, 1H), 7.36 (t, J = 72.2 Hz, 1H), 7.27 - 7.25 (m, 3H), 6.77 (d, J = 10.8 Hz, 2H), 6.41 (t, J = 7.1 Hz, 1H), 5.47 - 5.38 (m, 1H), 5.10 (d, J = 11.2 Hz, 1H), 4.18 - 3.92 (m, 4H), 3.90 - 3.82 (m, 2H), 3.81 - 3.73 (m, 4H), 2.47 - 2.42 (m, 1H), 2.04 - 1.92 (m, 1H)。

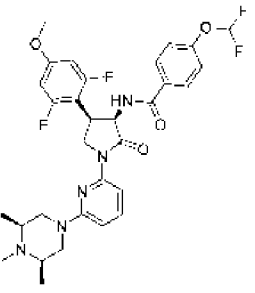
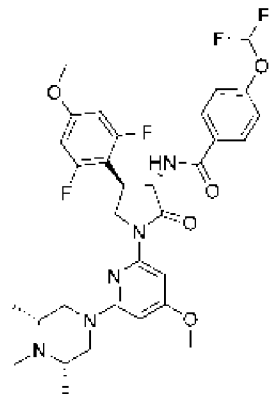
202		631.3	方法D， RT = 1.580 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.05 (d, J = 8.6 Hz, 1H), 8.13 (dd, J = 5.0, 2.0 Hz, 1H), 7.95 - 7.86 (m, 2H), 7.79 (dd, J = 7.6, 2.0 Hz, 1H), 7.34 (t, J = 73.6 Hz, 1H), 7.28 (m, 2H), 7.10 (dd, J = 7.6, 5.1 Hz, 1H), 6.80 (d, J = 10.8 Hz, 2H), 5.12 (dd, J = 11.2, 8.6 Hz, 1H), 4.58 (s, 4H), 4.33 - 4.12 (m, 4H), 3.99 (br d, J = 10.0 Hz, 2H), 3.77 (s, 3H), 3.36 (m, 3H), 2.71 (t, J = 5.5 Hz, 2H)。
203		502.2	方法D， RT = 1.79 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.16 (d, J = 9.0 Hz, 1H), 8.12 (dd, J = 4.6, 1.2 Hz, 1H), 7.92 - 7.79 (m, 2H), 7.65 (dd, J = 8.3, 4.6 Hz, 1H), 7.60 - 7.52 (m, 2H), 7.44 (dd, J = 8.3, 4.6 Hz, 1H), 6.88 - 6.68 (m, 2H), 5.29 (dd, J = 11.5, 8.8 Hz, 1H), 4.37 - 4.24 (m, 1H), 3.87 (s, 3H), 3.77 (s, 3H), 3.70 (t, J = 10.6 Hz, 1H), 1.01 (d, J = 6.1 Hz, 3H)。

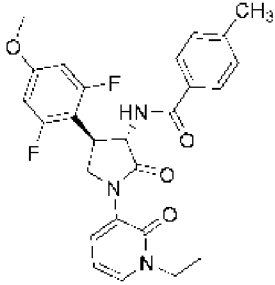
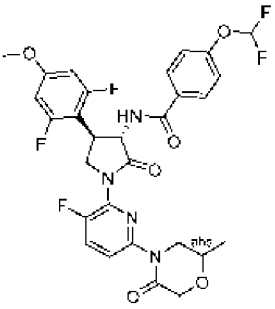
204		572.1	方法D， RT = 2.12 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.02 - 8.87 (m, 1H), 8.10 - 7.99 (m, 1H), 7.80 (br d, J = 8.1 Hz, 1H), 7.66 (br d, J = 8.6 Hz, 2H), 7.35 (t, J = 72.0 Hz, 1H), 7.17 (d, J = 8.4 Hz, 2H), 6.71 - 6.57 (m, 2H), 5.28 - 5.18 (m, 1H), 4.44 - 4.26 (m, 3H), 3.70 (s, 3H), 2.39 (s, 3H)。
205		552.2	方法D， RT = 1.708 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.01 (d, J = 8.6 Hz, 1H), 8.05 (dd, J = 4.4, 3.3 Hz, 1H), 7.93 - 7.83 (m, 2H), 7.78 (dd, J = 8.4, 3.3 Hz, 1H), 7.34 (t, J = 76 Hz, 1H), 7.28 - 7.25 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 5.12 (dd, J = 10.6, 8.7 Hz, 1H), 4.18 - 4.04 (m, 2H), 4.03 - 3.88 (m, 3H), 3.77 (s, 3H), 1.25 (t, J = 7.1 Hz, 3H)。
206		583.2	方法C， RT = 1.87 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 10.61 (s, 1H), 9.21 (d, J = 8.3 Hz, 1H), 8.11 - 7.98 (m, 1H), 7.97 - 7.90 (m, 2H), 7.86 (t, J = 8.9 Hz, 1H), 7.50 (d, J = 8.6 Hz, 2H), 6.80 (d, J = 11.0 Hz, 2H), 5.07 (dd, J = 10.3, 8.6 Hz, 1H), 4.29 - 4.03 (m, 3H), 3.77 (s, 3H), 2.09 (s, 3H)。

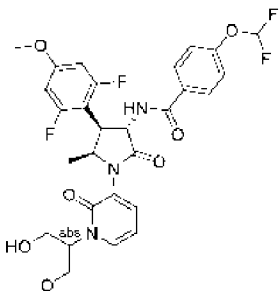
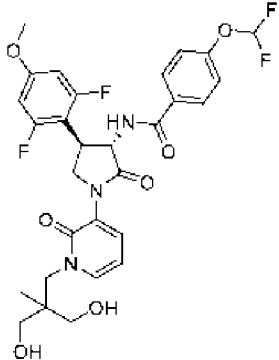
207		513.1	方法D， RT = 1.650 min， 99.4%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.08 (d, J = 8.3 Hz, 1H), 8.66 (d, J = 2.4 Hz, 1H), 7.88 (d, J = 2.4 Hz, 1H), 7.86 - 7.75 (m, 2H), 7.62 - 7.53 (m, 2H), 6.82 - 6.68 (m, 2H), 5.10 (dd, J = 11.1, 8.7 Hz, 1H), 4.16 - 4.06 (m, 1H), 4.03 - 3.97 (m, 1H), 3.96 - 3.89 (m, 1H), 3.77 (s, 3H), 3.53 (s, 3H)
208		560.2	方法D， RT = 1.65 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.04 - 8.93 (t, J = 8.4 Hz, 1H), 8.00 - 7.81 (m, 2H), 7.61 - 7.50 (m, 2H), 7.35 (t, J = 72 Hz, 1H), 7.28 - 7.23 (m, 2H), 6.90 - 6.73 (m, 2H), 6.20 (d, J = 6.8 Hz, 1H), 5.42 - 4.74 (m, 1H), 4.21 - 3.92 (m, 4H), 3.74 - 3.70 (2s, 3H), 3.61 - 3.55 (m, 3H), 3.24 (s, 3H), 2.22 - 2.03 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)

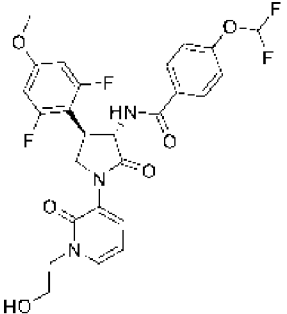
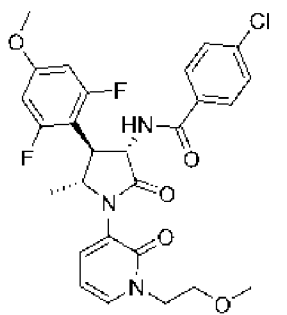
209		605.2	方法D， RT = 1.845 min，97%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.09 (d, J = 8.3 Hz, 1H), 7.89 (d, J = 8.8 Hz, 2H), 7.64 (t, J = 9.2 Hz, 1H), 7.35 (t, J = 7.6 Hz, 1H), 7.29 - 7.27 (m, 2H), 6.80 (br d, J = 10.8 Hz, 2H), 6.40 (dd, J = 9.0, 2.2 Hz, 1H), 5.17 - 5.05 (m, 1H), 4.71 (s, 4H), 4.24 - 4.02 (m, 6H), 4.00 - 3.94 (m, 1H), 3.78 (s, 3H)。
210		649.3	方法D， RT = 1.626 min， 95.6%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.10 (d, J = 8.6 Hz, 1H), 8.00 - 7.88 (m, 2H), 7.64 (dd, J = 6.8, 2.0 Hz, 1H), 7.58 (dd, J = 7.1, 2.0 Hz, 1H), 7.49 (d, J = 8.1 Hz, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.31 (t, J = 7.0 Hz, 1H), 5.12 (dd, J = 11.1, 8.7 Hz, 1H), 4.57 (s, 4H), 4.15 - 4.04 (m, 1H), 4.01 - 3.92 (m, 2H), 3.88 - 3.84 (m, 2H), 3.77 (s, 3H), 3.29 (s, 4H), 2.61 (t, J = 6.0 Hz, 2H)。

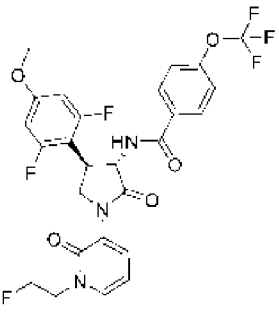
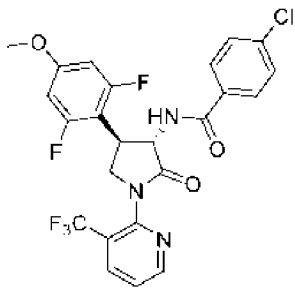
211		587.2	方法D， RT = 1.964 min，94%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.75 (d, J = 7.8 Hz, 1H), 7.71 (d, J = 8.3 Hz, 2H), 7.68 - 7.61 (m, 1H), 7.61 - 7.54 (m, 1H), 7.33 (t, J = 72.6 Hz, 1H), 7.19 - 7.15 (m, 2H), 6.62 (d, J = 11.0 Hz, 2H), 6.31 (d, J = 7.8 Hz, 1H), 5.28 (t, J = 8.4 Hz, 1H), 4.85 - 4.81 (m, 1H), 4.67 - 4.62 (m, 1H), 4.40 - 4.19 (m, 3H), 3.82 - 3.68 (m, 4H), 3.65 (d, J = 7.6 Hz, 1H), 3.44 (br d, J = 9.8 Hz, 1H), 3.24 (m, 1H), 1.94 - 1.76 (m, 2H)。
212		611.2	方法D， RT = 2.05 min， 95.7%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.09 (d, J = 8.1 Hz, 1H), 7.83 - 7.77 (m, 3H), 7.59 - 7.55 (m, 2H), 7.13 (d, J = 8 Hz, 1H), 6.79 (d, J = 10.8 Hz, 2H), 5.39 - 5.25 (m, 1H), 5.11 - 5.06 (m, 1H), 4.97 (d, J = 3.2 Hz, 1H), 4.39 (br d, J = 2.7 Hz, 1H), 4.30 - 4.20 (m, 1H), 3.90 - 3.79 (m, 1H), 3.76 (s, 3H), 3.65 - 3.50 (m, 4H), 2.02 - 1.83 (m, 2H)。

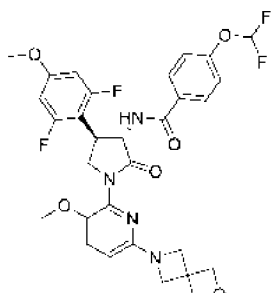
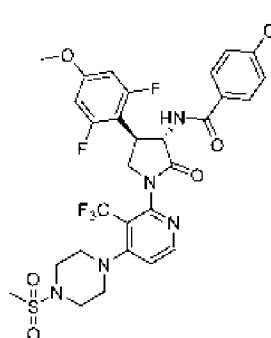
213		616.2	方法D， RT = 1.903 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.74 (d, J = 7.8 Hz, 1H), 7.78 - 7.63 (m, 3H), 7.63 - 7.55 (m, 1H), 7.33 (t, J = 76 Hz, 1H), 7.18 - 7.14 (m, 2H), 6.70 - 6.54 (m, 3H), 5.29 (t, J = 8.4 Hz, 1H), 4.42 - 4.24 (m, 4H), 4.12 - 3.98 (m, 2H), 3.70 (s, 3H), 2.17 (s, 3H), 2.16 - 2.08 (m, 3H), 1.07 (d, J = 6.1 Hz, 6H)。
214		646.3	方法D， RT = 1.97 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.05 (d, J = 8.3 Hz, 1H), 7.88 (d, J = 9.2 Hz, 2H), 7.35 (t, J = 73.6 Hz, 1H), 7.33 - 7.27 (m, 4H), 6.79 (d, J = 10.8 Hz, 2H), 5.08 - 5.03 (m, 1H), 4.49 - 4.38 (m, 1H), 4.17 - 3.98 (m, 3H), 3.93 - 3.84 (m, 1H), 3.80 (s, 3H), 3.78 (s, 3H), 2.48 (s, 3H), 2.30 - 2.01 (m, 4H), 1.15 - 1.02 (m, 6H)。

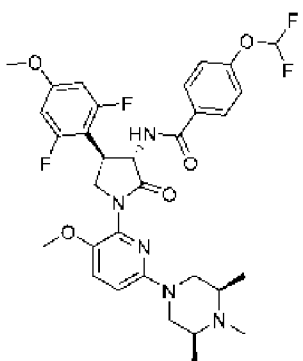
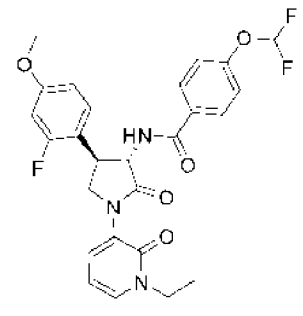
215		482.2	方法D， RT = 1.557 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.89 (d, J = 8.8 Hz, 1H), 7.76 (dd, J = 6.7, 2.1 Hz, 1H), 7.73 (d, J = 8.3 Hz, 2H), 7.57 (dd, J = 7.2, 2.1 Hz, 1H), 7.28 (d, J = 8.1 Hz, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.35 (t, J = 7.0 Hz, 1H), 5.12 (dd, J = 11.1, 8.7 Hz, 1H), 4.18 - 4.04 (m, 1H), 4.04 - 3.89 (m, 4H), 3.76 (s, 3H), 2.35 (s, 3H), 1.25 (t, J = 7.1 Hz, 3H)。
216		621.2	方法D， RT = 2.24 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.10 (d, J = 8.6 Hz, 1H), 8.02 - 7.81 (m, 4H), 7.34 (t, J = 73.6 Hz, 1H), 7.29 - 7.27 (m, 2H), 6.80 (d, J = 10.8 Hz, 2H), 5.16 - 5.03 (m, 1H), 4.33 - 4.19 (m, 4H), 4.10 - 3.96 (m, 3H), 3.77 (s, 3H), 3.60 - 3.48 (m, 1H), 1.26 (d, J = 6.1 Hz, 3H)。

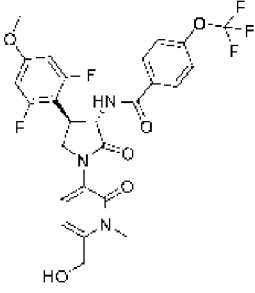
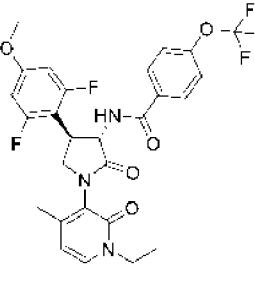
217		608.3	方法D， RT = 1.54 min，97%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 8.87 (br d, J = 8.3 Hz, 1H), 7.96 - 7.84 (m, 2H), 7.71 (dd, J = 7.1, 2.0 Hz, 1H), 7.56 (dd, J = 7.1, 2.0 Hz, 1H), 7.33 (t, J = 73.6 Hz, 1H), 7.25- 7.23 (m, 2H), 6.77 (d, J = 11.5 Hz, 2H), 6.33 (t, J = 7.1 Hz, 1H), 5.65 (dd, J = 11.7, 8.6 Hz, 1H), 5.14 - 4.93 (m, 2H), 4.70 - 4.52 (m, 1H), 4.32-4.27 (m, 1H), 3.76 (s, 3H), 3.75 - 3.69 (m, 4H), 3.23 (s, 3H), 0.91 (br d, J = 6.6 Hz, 3H)。
218		608.3	方法D， RT = 1.522 min， 97.4%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.06 - 8.98 (m, 1H), 7.93 - 7.85 (m, 2H), 7.69 - 7.61 (m, 2H), 7.34 (t, J = 73.6 Hz, 1H), 7.28 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.40 (t, J = 7.0 Hz, 1H), 5.14 (dd, J = 11.1, 8.4 Hz, 1H), 4.74 (t, J = 5.4 Hz, 2H), 4.15 - 4.04 (m, 1H), 4.03 - 3.89 (m, 4H), 3.76 (s, 3H), 3.24 - 3.11 (m, 4H), 0.78 (s, 3H)。

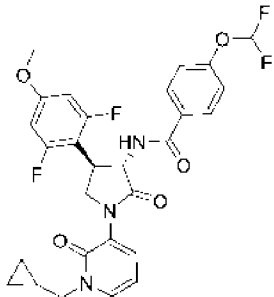
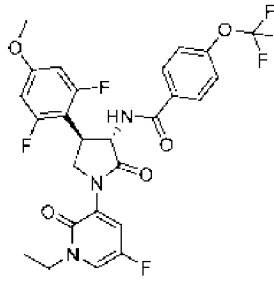
219		550.2	方法D， RT = 1.700 min， 98.8%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 8.99 (br d, J = 8.6 Hz, 1H), 8.02 - 7.83 (m, 2H), 7.65 (dd, J = 6.6, 2.0 Hz, 1H), 7.59 (dd, J = 7.1, 2.0 Hz, 1H), 7.34 (t, J = 73.6 Hz, 1H), 7.28 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.32 (t, J = 7.0 Hz, 1H), 5.12 (dd, J = 10.9, 8.7 Hz, 1H), 4.93 (t, J = 5.3 Hz, 1H), 4.17 - 4.05 (m, 1H), 4.05 - 3.90 (m, 4H), 3.77 (s, 3H), 3.70 - 3.59 (m, 2H)。
220		546.2	方法D， RT = 1.71 min，95%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.03 (d, J = 8.6 Hz, 1H), 7.88 - 7.77 (m, 2H), 7.68 (dd, J = 6.7, 1.8 Hz, 1H), 7.58 - 7.49 (m, 2H), 7.46 (dd, J = 6.7, 1.8 Hz, 1H), 6.87 - 6.72 (m, 2H), 6.34 (t, J = 7.1 Hz, 1H), 5.18 - 5.00 (m, 1H), 4.57 - 4.42 (m, 1H), 4.23 - 4.05 (m, 2H), 3.78 (s, 3H), 3.67 - 3.56 (m, 3H), 3.25 (m, 3H), 0.99 (d, J = 6.4 Hz, 3H)。

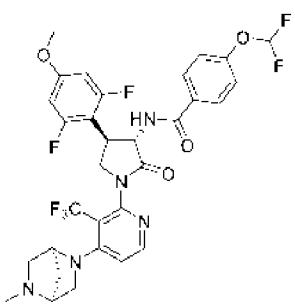
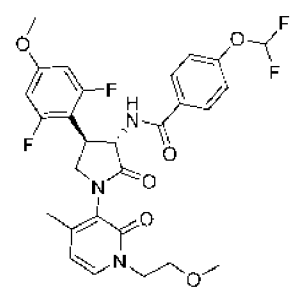
221		570.2	方法D， RT = 1.801 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.12 (d, J = 8.6 Hz, 1H), 8.03 - 7.87 (m, 2H), 7.72 (dd, J = 6.7, 1.8 Hz, 1H), 7.64 (dd, J = 7.3, 1.8 Hz, 1H), 7.49 (d, J = 8.3 Hz, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.37 (t, J = 7.0 Hz, 1H), 5.13 (dd, J = 10.9, 8.7 Hz, 1H), 4.71 (dt, J = 48.6, 4.6 Hz, 2H), 4.38 - 4.29 (m, 1H), 4.29 - 4.20 (m, 1H), 4.16 - 4.05 (m, 1H), 4.04 - 3.94 (m, 2H), 3.77 (s, 3H)。
222		526.1	方法D， RT = 1.94 min， 95.6%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.14 (br d, J = 8.1 Hz, 1H), 8.90 (dd, J = 4.6, 1.2 Hz, 1H), 8.39 (dd, J = 7.8, 1.2 Hz, 1H), 7.91 - 7.79 (m, 2H), 7.73 (dd, J = 7.7, 4.8 Hz, 1H), 7.62 - 7.51 (m, 2H), 6.80 (d, J = 10.8 Hz, 2H), 5.14 (dd, J = 11.1, 8.7 Hz, 1H), 4.29 - 4.23 (m, 1H), 4.18 - 4.06 (m, 1H), 4.02 - 3.94 (m, 1H), 3.78 (s, 3H)。

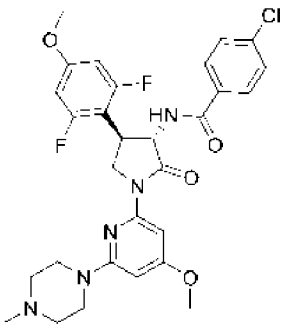
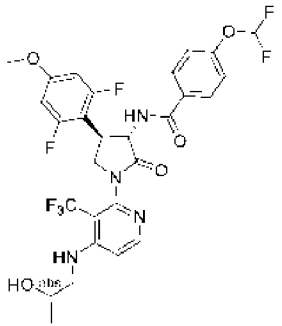
223		617.2	方法D， RT = 1.75 min，93%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.04 (d, J = 8.6 Hz, 1H), 7.95 - 7.84 (m, 2H), 7.57 - 7.52 (m, 1H), 7.34 (t, J = 76 Hz, 1H), 7.28 - 7.25 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.44 (d, J = 8.8 Hz, 1H), 5.22 (dd, J = 11.1, 8.9 Hz, 1H), 4.71 (s, 4H), 4.18 - 3.91 (m, 6H), 3.88 - 3.81 (m, 1H), 3.76 (s, 3H), 3.75 (s, 3H)。
224		688.2	方法D， RT = 1.94 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.10 (br d, J = 8.1 Hz, 1H), 8.53 (br d, J = 6.6 Hz, 1H), 7.94 - 7.75 (m, 2H), 7.62 - 7.50 (m, 2H), 7.29 (br d, J = 5.4 Hz, 1H), 6.79 (d, J = 10.8 Hz, 2H), 5.20 - 5.03 (m, 1H), 4.46 - 4.12 (m, 2H), 3.90 - 3.74 (m, 1H), 3.72 (s, 3H), 3.32 - 3.18 (m, 6H), 2.95 (s, 3H), 2.64 - 2.53 (m, 2H)。

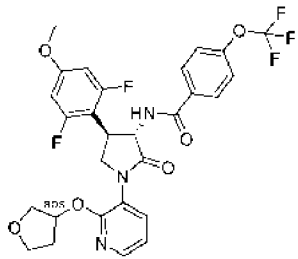
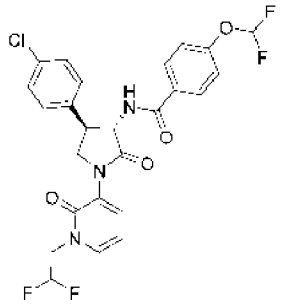
225		646.3	方法D， RT = 1.81 min，97%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.03 (br d, J = 9.0 Hz, 1H), 7.96 - 7.82 (m, 2H), 7.54 - 7.52 (m, 1H), 7.34 (t, J = 76.0 Hz, 1H), 7.28 - 7.26 (m, 2H), 6.88 (d, J = 8.8 Hz, 1H), 6.77 (d, J = 10.8 Hz, 2H), 5.21 (dd, J = 11.1, 8.9 Hz, 1H), 4.23 - 4.10 (m, 1H), 4.10 - 3.93 (m, 3H), 3.89 - 3.82 (m, 1H), 3.77 (s, 3H), 3.76 (s, 3H), 2.49 - 2.43 (m, 1H), 2.39 - 2.06 (m, 6H), 1.11 (br d, J = 6.4 Hz, 6H)。
226		516.2	方法D， RT = 1.53 min， 95.1%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.51 (d, J = 8.5 Hz, 1H), 7.93 (d, J = 9.0 Hz, 1H), 7.78 (dd, J = 6.5, 2.0 Hz, 1H), 7.76 - 7.66 (m, 2H), 7.64 (dd, J = 7.0, 2.0 Hz, 1H), 7.35 (t, J = 72.0 Hz, 1H), 7.23 - 7.16 (m, 2H), 6.82 - 6.63 (m, 2H), 6.38 (t, J = 7.0 Hz, 1H), 5.15 - 5.05 (m, 1H), 4.17 - 4.06 (m, 1H), 4.04 - 3.94 (m, 3H), 3.82 - 3.74 (m, 1H), 3.72 (s, 3H), 1.25 (t, J = 7.1 Hz, 3H)。

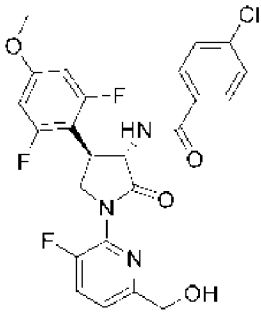
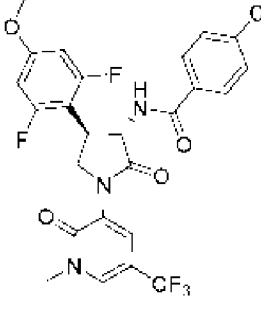
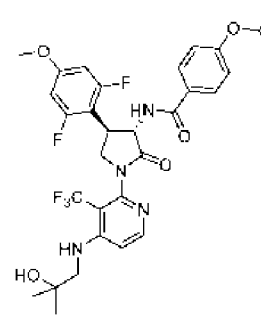
227		568.2	方法D， RT = 1.64 min，96%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.11 (d, J = 8.6 Hz, 1H), 8.02 - 7.86 (m, 2H), 7.56 (d, J = 7.6 Hz, 1H), 7.52 - 7.36 (m, 2H), 6.85 - 6.68 (m, 2H), 6.40 (d, J = 7.6 Hz, 1H), 5.67 (t, J = 5.6 Hz, 1H), 5.12 (dd, J = 11.1, 8.7, Hz, 1H), 4.49 (d, J = 5.4 Hz, 2H), 4.18 - 4.04 (m, 1H), 4.02 - 3.89 (m, 2H), 3.76 (s, 3H), 3.49 (s, 3H)。
228		566.2	方法D， RT = 1.886 min， 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.26 - 8.95 (m, 1H), 8.02 - 7.83 (m, 2H), 7.76 - 7.60 (m, 1H), 7.56 - 7.33 (m, 2H), 6.79 - 6.72 (m, 2H), 6.30 - 6.14 (m, 1H), 5.38 - 4.79 (m, 1H), 4.30 - 4.06 (m, 2H), 4.04 - 3.84 (m, 2H), 3.80 - 3.69 (2s, 3H), 3.53 - 3.44 (m, 1H), 2.22 - 1.97 (2s, 3H), 1.29 - 1.15 (m, 3H)。 (可互相轉化之阻轉異構物之 混合物)。

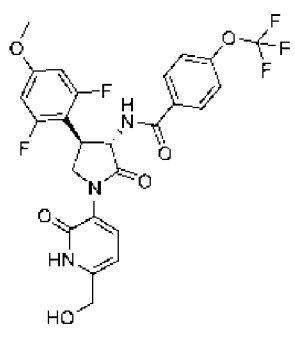
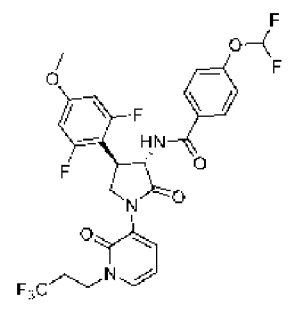
229		560.2	方法D， RT = 1.78 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.00 (d, J = 8.6 Hz, 1H), 7.96 - 7.85 (m, 2H), 7.79 (dd, J = 6.6, 2.0 Hz, 1H), 7.59 (dd, J = 7.3, 2.0 Hz, 1H), 7.34 (t, J = 7.2 Hz, 1H), 7.27 - 7.25 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.35 (t, J = 7.0 Hz, 1H), 5.12 (dd, J = 10.9, 8.7 Hz, 1H), 4.17 - 4.04 (m, 1H), 4.04 - 3.91 (m, 2H), 3.87 - 3.78 (m, 2H), 3.77 (s, 3H), 1.31 - 1.16 (m, 1H), 0.55 - 0.43 (m, 2H), 0.43 - 0.33 (m, 2H)。
230		570.2	方法D， RT = 1.89 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.12 (d, J = 8.6 Hz, 1H), 8.05 (dd, J = 4.5, 3.3 Hz, 1H), 7.98 - 7.90 (m, 2H), 7.78 (dd, J = 8.4, 3.3 Hz, 1H), 7.49 (d, J = 8.9 Hz, 2H), 6.78 (d, J = 10.8 Hz, 2H), 5.14 (m, 1H), 4.19 - 4.04 (m, 2H), 4.03 - 3.88 (m, 3H), 3.77 (s, 3H), 1.25 (t, J = 7.1 Hz, 3H)

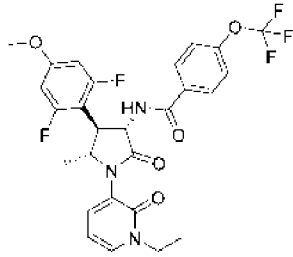
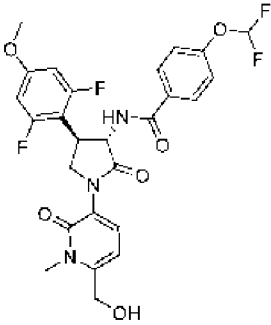
231		668.2	方法D， RT = 1.69 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.11 - 9.00 (m, 1H), 8.24 - 8.06 (m, 1H), 7.95 - 7.78 (m, 2H), 7.35 (t, J = 72 Hz, 1H), 7.31 - 7.25 (m, 2H), 7.01 - 6.83 (m, 1H), 6.82 - 6.68 (m, 2H), 5.16 - 5.01 (m, 1H), 4.58 - 4.43 (m, 1H), 4.38 - 4.27 (m, 1H), 4.25 - 4.08 (m, 1H), 3.86 - 3.77 (m, 1H), 3.76 (s, 3H), 3.64 - 3.55 (m, 1H), 3.50 - 3.40 (m, 1H), 3.28 - 3.21 (m, 1H), 2.83 - 2.63 (m, 2H), 2.27 (s, 3H), 2.00 - 1.87 (m, 1H), 1.81 (m, 1H)。
232		578.2	方法D， RT = 1.686 min， 99.4%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.18 - 8.82 (m, 1H), 8.02 - 7.83 (m, 2H), 7.66 - 7.48 (m, 1H), 7.34 (t, J = 73.6 Hz, 1H), 7.28 (m, 2H), 6.88 - 6.61 (m, 2H), 6.28 - 6.12 (m, 1H), 5.38 - 4.81 (m, 1H), 4.32 - 3.94 (m, 4H), 3.82 - 3.72 (2s, 3H), 3.62 - 3.44 (m, 3H), 3.27 - 3.19 (2s, 3H), 2.25 - 2.02 (m, 3H)。 (可互相轉化之阻轉異構物之混合物)

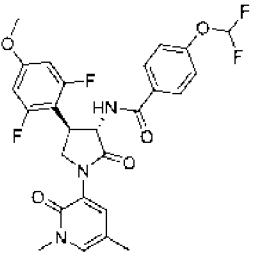
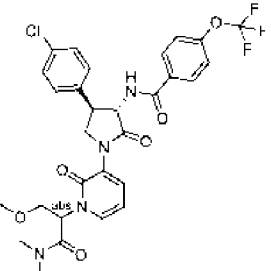
233		586.2	方法D， RT = 1.92 min， 97.4%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.13 (br d, J = 8.1 Hz, 1H), 7.83 (br d, J = 8.6 Hz, 2H), 7.58 (br d, J = 8.3 Hz, 2H), 7.41 (s, 1H), 6.80 (br d, J = 10.8 Hz, 2H), 6.28 (s, 1H), 5.10 - 4.98 (m, 1H), 4.50 - 4.23 (m, 3H), 4.13 - 4.04 (m, 1H), 3.93 - 3.85 (m, 2H), 3.82 (s, 3H), 3.75 (s, 3H), 3.15 - 2.95 (m, 5H), 2.83 (s, 3H)。
234		631.3	方法D， RT = 1.74 min， 98.5%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.06 - 8.99 (m, 1H), 8.24 - 8.14 (m, 1H), 7.94 - 7.81 (m, 2H), 7.33 (t, J = 73.6 Hz, 1H), 7.28 - 7.24 (m, 2H), 6.93 - 6.81 (m, 1H), 6.77 (d, J = 10.5 Hz, 2H), 6.28 (br d, J = 4.9 Hz, 1H), 5.16 - 4.93 (m, 2H), 4.32 - 4.10 (m, 2H), 3.92 - 3.82 (m, 1H), 3.76 (s, 3H), 3.75 - 3.68 (m, 1H), 3.47 - 3.39 (m, 2H), 1.18 - 1.04 (m, 3H)。(可互相 轉化之阻轉異構物之混合物)

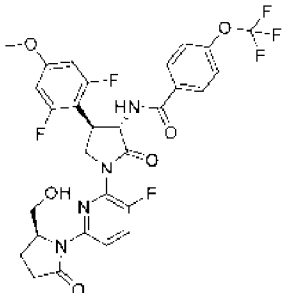
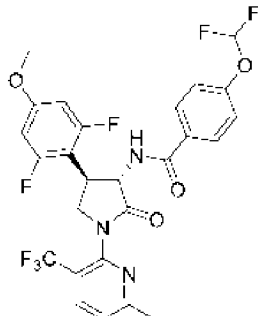
235		594.2	方法D， RT = 1.972 min，95%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.15 (d, J = 8.6 Hz, 1H), 8.15 (dd, J = 5.0, 1.8 Hz, 1H), 8.02 - 7.88 (m, 2H), 7.79 (dd, J = 7.7, 1.8 Hz, 1H), 7.56 - 7.42 (m, 2H), 7.12 (dd, J = 7.6, 4.9 Hz, 1H), 6.80 (d, J = 10.8 Hz, 2H), 5.60 (br dd, J = 6.2, 4.5 Hz, 1H), 5.07 (dd, J = 11.0, 8.3 Hz, 1H), 4.16 (br d, J = 10.0 Hz, 1H), 4.05 - 3.88 (m, 3H), 3.87 - 3.80 (m, 2H), 3.77 (s, 3H), 3.76 - 3.73 (m, 1H), 2.30 - 2.21 (m, 1H), 2.12 - 2.03 (m, 1H)。
236		538.2	方法D， RT = 1.793 min， 96.3%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.96 (d, J = 8.5 Hz, 1H), 7.98 - 7.85 (m, 2H), 7.72 (dd, J = 2.0, 7.0 Hz, 1H), 7.67 (dd, J = 2.0, 7.5 Hz, 1H), 7.59 - 7.07 (m, 5H), 7.38 (t, J = 58.4 Hz, 1H), 7.34 (t, J = 73.6 Hz, 1H), 6.42 (t, J = 8.0 Hz, 1H), 6.35 (tt, J = 56.2 Hz, 1H), 5.05 (dd, J = 8.8, 10.8 Hz, 1H), 4.54 - 4.36 (m, 2H), 4.18 (t, J = 7.8 Hz, 1H), 3.91 - 3.65 (m, 2H)。

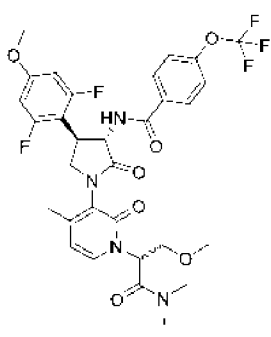
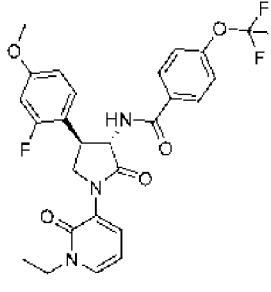
237		506.2	方法D， RT = 1.655 min，96%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.17 (d, J = 8.3 Hz, 1H), 7.95 - 7.75 (m, 3H), 7.65 - 7.55 (m, 2H), 7.50 (dd, J = 8.3, 3.4 Hz, 1H), 6.80 (d, J = 10.8 Hz, 2H), 5.55 (t, J = 5.9 Hz, 1H), 5.19 - 4.98 (m, 1H), 4.54 (d, J = 5.9 Hz, 2H), 4.27 - 4.13 (m, 2H), 4.11 - 4.00 (m, 1H), 3.77 (s, 3H)。
238		556.2	方法D， RT = 2.691 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.06 (d, J = 8.3 Hz, 1H), 8.47 (d, J = 1.2 Hz, 1H), 7.92 - 7.80 (m, 3H), 7.65 - 7.53 (m, 2H), 6.78 (d, J = 10.8 Hz, 2H), 5.11 (dd, J = 8.6, 10.8 Hz, 1H), 4.19 - 3.96 (m, 3H), 3.77 (s, 3H), 3.57 (s, 3H)。
239		645.2	方法D， RT = 1.84 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.02 (d, J = 8.8 Hz, 1H), 8.26 - 8.14 (m, 1H), 7.94 - 7.81 (m, 2H), 7.35 (t, J = 72.2 Hz, 1H), 7.34 - 7.25 (m, 2H), 6.94 - 6.83 (m, 1H), 6.78 (d, J = 10.5 Hz, 2H), 5.98 - 5.91 (m, 1H), 5.16 - 5.05 (m, 1H), 4.87 (s, 1H), 4.36 - 4.14 (m, 2H), 3.76 (s, 3H), 3.75 - 3.67 (m, 1H), 3.22 - 3.13 (m, 2H), 1.17 (s, 3H), 1.15 (s, 3H)。

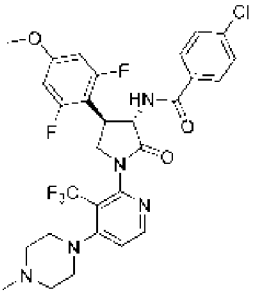
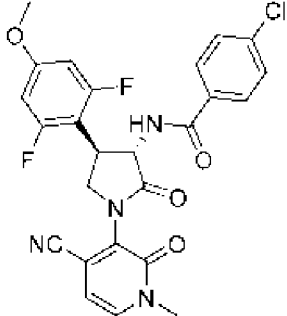
240		554.2	方法D， RT = 1.572 min， 98.7%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 11.91 - 11.48 (m, 1H), 9.11 (d, J = 8.8 Hz, 1H), 8.03 - 7.84 (m, 2H), 7.57 (d, J = 7.3 Hz, 1H), 7.48 (dd, J = 9.0, 1.0 Hz, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.26 (d, J = 7.3 Hz, 1H), 5.56 - 5.50 (brs, 1H), 5.13 (dd, J = 11.0, 8.6 Hz, 1H), 4.31 (s, 2H), 4.15 - 3.87 (m, 3H), 3.76 (s, 3H)。
241		602.2	方法D， RT = 1.838 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.08 - 8.95 (m, 1H), 7.89 (d, J = 8.8 Hz, 2H), 7.82 - 7.59 (m, 2H), 7.34 (t, J = 76.0 Hz, 1H), 7.28 - 7.26 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.38 (t, J = 8.2 Hz, 1H), 5.19 - 5.05 (m, 1H), 4.27 - 4.17 (m, 2H), 4.14 - 4.03 (m, 1H), 4.03 - 3.92 (m, 2H), 3.77 (s, 3H), 2.85 - 2.69 (m, 2H)。

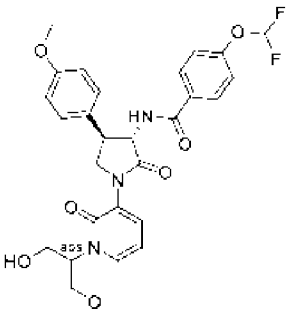
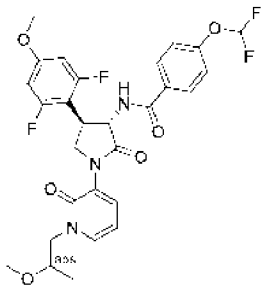
242		566.2	方法D， RT = 1.87 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.08 (d, J = 8.6 Hz, 1H), 7.99 - 7.87 (m, 2H), 7.79 (dd, J = 6.8, 2.0 Hz, 1H), 7.53 - 7.37 (m, 3H), 6.84 - 6.71 (m, 2H), 6.36 (t, J = 7.0 Hz, 1H), 5.13 (dd, J = 11.2, 8.6 Hz, 1H), 4.54 - 4.44 (m, 1H), 4.04 - 3.90 (m, 2H), 3.77 (s, 3H), 3.62 (t, J = 10.5 Hz, 1H), 1.24 (t, J = 7.1 Hz, 3H), 0.99 (d, J = 6.1 Hz, 3H)。
243		550.2	方法D， RT = 1.455 min，94%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.00 (d, J = 8.6 Hz, 1H), 7.96 - 7.81 (m, 2H), 7.55 (d, J = 7.6 Hz, 1H), 7.34 (t, J = 7.6 Hz, 1H), 7.27 - 7.16 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.40 (d, J = 7.6 Hz, 1H), 5.67 (br s, 1H), 5.11 (dd, J = 11.0, 8.6 Hz, 1H), 4.49 (s, 2H), 4.15 - 3.90 (m, 3H), 3.76 (s, 3H), 3.49 (s, 3H)。

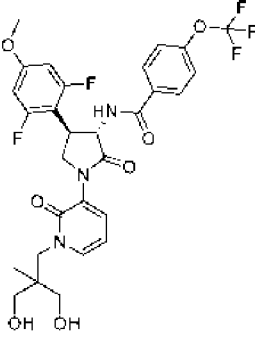
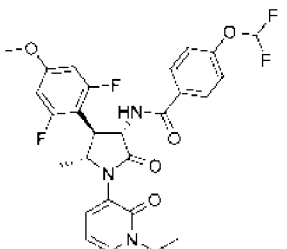
244		534.2	方法D， RT = 1.669 min， 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 8.99 (br d, J = 8.3 Hz, 1H), 7.97 - 7.78 (m, 2H), 7.56 (s, 1H), 7.54 - 7.03 (m, 3H), 7.34 (t, J = 73.6 Hz, 1H), 6.77 (d, J = 10.5 Hz, 2H), 5.09 (dd, J = 11.0, 8.6 Hz, 1H), 4.11 (q, J = 10.3 Hz, 1H), 3.97 (br d, J = 9.5 Hz, 2H), 3.77 (s, 3H), 3.46 (s, 3H), 2.08 (s, 3H)。
245		621.2	方法D， RT = 1.876 min， 97.5%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.08 (br d, J = 8.3 Hz, 1H), 8.06 - 7.89 (m, 2H), 7.75 - 7.66 (m, 1H), 7.61 (dd, J = 7.2, 1.8 Hz, 1H), 7.52 - 7.44 (m, 3H), 7.43 - 7.34 (m, 2H), 6.41 (t, J = 7.2 Hz, 1H), 6.07 (dd, J = 8.8, 5.1 Hz, 1H), 5.08 - 4.94 (m, 1H), 4.14 - 4.05 (m, 2H), 3.91 - 3.75 (m, 4H), 3.26 (s, 3H), 3.10 (s, 3H), 2.84 (s, 3H)。

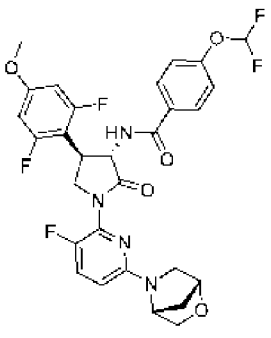
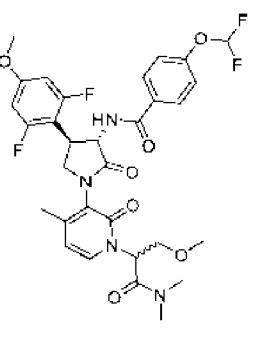
246		639.2	方法D， RT = 1.86 min，96%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.21 (d, J = 8.6 Hz, 1H), 8.25 (dd, J = 9.0, 3.2 Hz, 1H), 8.00 - 7.82 (m, 3H), 7.50 (d, J = 8.1 Hz, 2H), 6.80 (d, J = 10.8 Hz, 2H), 5.09 (dd, J = 10.3, 8.6 Hz, 1H), 4.86 (t, J = 5.6 Hz, 1H), 4.63-4.61 (m, 1H), 4.27-4.20 (m, 2H), 4.08 - 3.97 (m, 1H), 3.77 (s, 3H), 3.73-3.71 (m, 1H), 3.61-3.59 (m, 1H), 2.80 - 2.67 (m, 1H), 2.46 - 2.35 (m, 1H), 2.24 - 2.09 (m, 1H), 2.09 - 1.96 (m, 1H)。
247		572.2	方法D， RT = 1.99 min， 94.3%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.09 (d, J = 8.6 Hz, 1H), 8.25 (d, J = 8.3 Hz, 1H), 7.94 - 7.84 (m, 2H), 7.69 (d, J = 8.8 Hz, 1H), 7.35 (t, J = 76.2 Hz, 1H), 7.28 (d, J = 8.2 Hz, 2H), 6.80 (d, J = 10.8 Hz, 2H), 5.16 (dd, J = 11.0, 8.8 Hz, 1H), 4.26 (q, J = 9.9 Hz, 1H), 4.10 (br t, J = 8.6 Hz, 1H), 3.99 - 3.88 (m, 1H), 3.77 (s, 3H), 2.61 (s, 3H)。

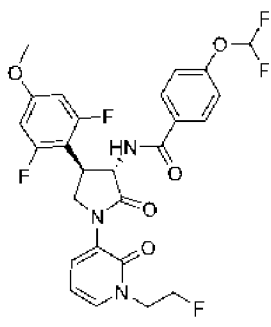
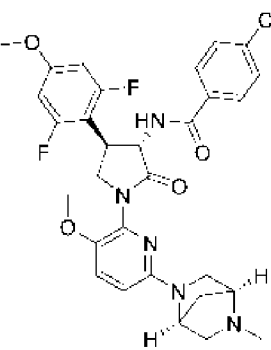
248		667.3	方法D， RT = 1.839 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.25 - 8.87 (m, 1H), 8.05 - 7.84 (m, 2H), 7.75 - 7.57 (m, 1H), 7.54 - 7.34 (m, 2H), 6.77 (dd, J = 5.6, 10.8 Hz, 1H), 6.35 - 6.19 (m, 1H), 6.11 - 5.92 (m, 1H), 5.39 - 4.82 (m, 1H), 4.30 - 3.96 (m, 3H), 3.92 - 3.68 (m, 5H), 3.59 - 3.45 (m, 1H), 3.29 - 3.23 (2s, 3H), 3.16 - 3.06 (m, 3H), 2.86 - 2.80 (2s, 3H), 2.22 - 1.95 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)
249		534.2	方法D， RT = 1.77 min， 98.9%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.05 (d, J = 8.8 Hz, 1H), 8.00 - 7.92 (m, 2H), 7.75 (dd, J = 6.8, 2.0 Hz, 1H), 7.58 (dd, J = 7.3, 2.0 Hz, 1H), 7.54 - 7.43 (m, 3H), 6.86 - 6.78 (m, 2H), 6.39 - 6.29 (m, 1H), 5.13 (dd, J = 11.4, 8.9 Hz, 1H), 4.19 - 4.11 (m, 1H), 4.04 - 3.93 (m, 3H), 3.75 (s, 3H), 3.73 - 3.64 (m, 1H), 1.24 (t, J = 7.1 Hz, 3H)。

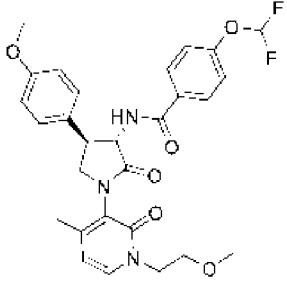
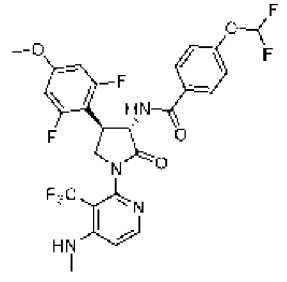
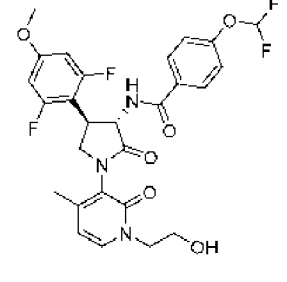
250		624.2	方法D， RT = 1.89 min， 96.4%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.11 (br d, J = 7.8 Hz, 1H), 8.45 - 8.41 (m, 1H), 7.89 - 7.79 (m, 2H), 7.59 - 7.54 (m, 2H), 7.20 (br d, J = 5.9 Hz, 1H), 6.79 (br d, J = 10.8 Hz, 2H), 5.18 - 5.02 (m, 1H), 4.41 - 4.15 (m, 2H), 3.78 (s, 3H), 3.77 - 3.71 (m, 1H), 3.27 - 3.01 (m, 4H), 2.49 - 2.37 (m, 4H), 2.22 (s, 3H)。
251		513.2	方法D， RT = 1.653 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.17 (d, J = 8.8 Hz, 1H), 8.02 (d, J = 7.1 Hz, 1H), 7.92 - 7.81 (m, 2H), 7.65 - 7.48 (m, 2H), 6.79 (d, J = 11.0 Hz, 2H), 6.70 (d, J = 7.1 Hz, 1H), 5.23 (dd, J = 11.5, 8.6 Hz, 1H), 4.26 - 4.11 (m, 2H), 3.77 (s, 3H), 3.75 - 3.70 (m, 1H), 3.56 (s, 3H)。

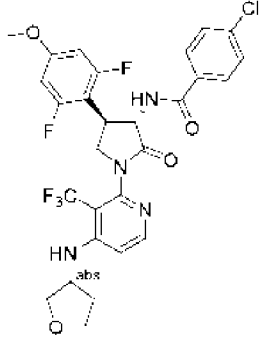
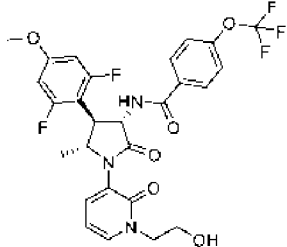
252		558.3	方法D， RT = 1.421 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.96 - 8.87 (m, 1H), 7.93 (d, J = 8.6 Hz, 2H), 7.68 (dd, J = 6.7, 1.8 Hz, 1H), 7.56 (dd, J = 7.5, 1.8 Hz, 1H), 7.34 (t, J = 76 Hz, 1H), 7.33 - 7.27 (m, 2H), 7.29 - 7.22 (m, 2H), 6.90 (d, J = 8.6 Hz, 2H), 6.34 (t, J = 7.1 Hz, 1H), 5.10 - 4.99 (m, 3H), 4.13 - 4.06 (m, 2H), 3.79 - 3.64 (m, 7H), 3.23 (s, 3H), 3.17 (d, J = 4.9 Hz, 1H)。
253		578.3	方法D， RT = 1.692 min， 93.2%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.01 (d, J = 8.6 Hz, 1H), 7.93 - 7.81 (m, 2H), 7.61 (dt, J = 7.2, 1.7 Hz, 2H), 7.34 (t, J = 73.6 Hz, 1H), 7.28 (m, 2H), 6.76 (d, J = 10.8 Hz, 2H), 6.32 (t, J = 7.0 Hz, 1H), 5.12 (dd, J = 11.0, 8.6 Hz, 1H), 4.14 - 3.79 (m, 5H), 3.76 (s, 3H), 3.68 - 3.61 (m, 1H), 3.18 (s, 3H), 1.09 (d, J = 6.1 Hz, 3H)。

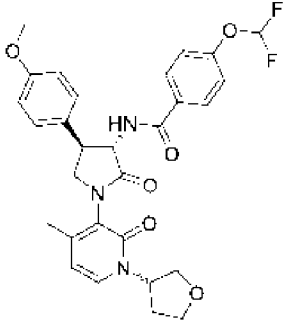
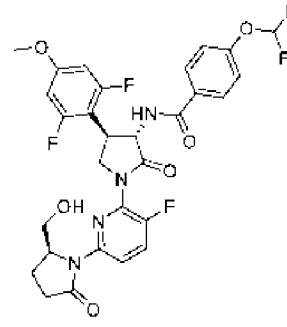
254		626.2	方法D， RT = 1.700 min， 98.8%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.06 - 8.98 (m, 1H), 7.93 - 7.85 (m, 2H), 7.69 - 7.61 (m, 2H), 7.56 - 7.13 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.40 (t, J = 7.0 Hz, 1H), 5.14 (dd, J = 11.1, 8.4 Hz, 1H), 4.74 (t, J = 5.4 Hz, 2H), 4.15 - 4.04 (m, 1H), 4.03 - 3.89 (m, 4H), 3.76 (s, 3H), 3.24 - 3.11 (m, 4H), 0.78 (s, 3H)。
255		548.2	方法D， RT = 1.70 min，96%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.01 (d, J = 8.6 Hz, 1H), 7.88 (d, J = 8.8 Hz, 2H), 7.78 (dd, J = 6.6, 2.0 Hz, 1H), 7.46-7.44 (m, 1H) 7.34 (t, J = 73.6 Hz, 1H), 7.27- 7.25 (m, 2H), 6.78 (d, J = 11.0 Hz, 2H), 6.36 (t, J = 7.0 Hz, 1H), 5.14-5.09 (m, 1H), 4.54 - 4.47 (m, 1H), 4.04 - 3.91 (m, 2H), 3.77 (s, 3H), 3.67-3.60 (m, 1H), 1.24 (t, J = 7.1 Hz, 3H), 0.98 (d, J = 6.1 Hz, 3H)。

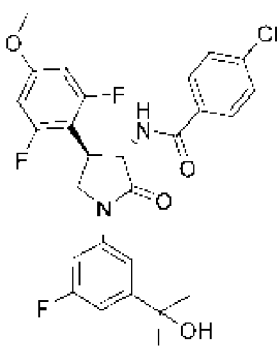
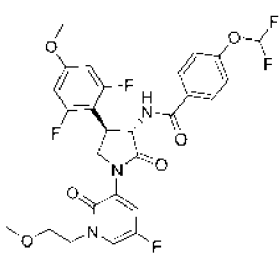
256		605.2	方法D， RT = 1.904 min，95%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.06 (d, J = 8.6 Hz, 1H), 7.96 - 7.81 (m, 2H), 7.61 (t, J = 9.2 Hz, 1H), 7.34 (t, J = 72 Hz, 1 H), 7.29 - 7.26 (m, 2H), 6.79 (d, J = 10.8 Hz, 2H), 6.53 (dd, J = 2.2, 9.0 Hz, 1H), 5.20 - 5.08 (m, 1H), 4.83 - 4.78 (m, 1H), 4.68 - 4.62 (m, 1H), 4.25 - 4.13 (m, 2H), 4.04 - 3.92 (m, 1H), 3.78 (s, 4H), 3.64 (d, J = 7.3 Hz, 1H), 3.44 (d, J = 9.5 Hz, 1H), 3.23 (d, J = 10.3 Hz, 1H), 1.95 - 1.78 (m, 2H)。
257		649.3	方法D， RT = 1.672 min， 97.1%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.18 - 8.91 (m, 1H), 7.98 - 7.80 (m, 2H), 7.69 - 7.56 (m, 1H), 7.55 - 6.92 (m, 2H), 7.34 (t, J = 73.6 Hz, 1H), 6.78 - 6.70 (m, 1H), 6.38 - 6.25 (m, 1H), 6.10 - 5.92 (m, 1H), 5.39 - 4.81 (m, 1H), 4.31 - 4.04 (m, 2H), 3.90 - 3.73 (m, 5H), 3.56 - 3.49 (m, 1H), 3.28 - 3.24 (2s, 3H), 3.19 - 3.03 (m, 3H), 2.99 - 2.89 (m, 1H), 2.86 - 2.81 (2s, 3H), 2.23 - 2.04 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)

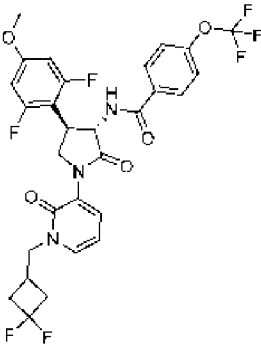
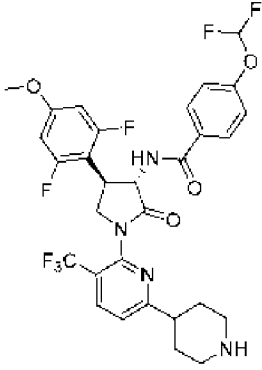
258		552.2	方法D， RT = 1.625 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.02 (d, J = 8.6 Hz, 1H), 7.83-7.95 (m, 2H), 7.72 (dd, J = 6.8, 2.0 Hz, 1H), 7.63 (dd, J = 7.1, 2.0 Hz, 1H), 7.35 (t, J = 72 Hz, 1 H), 7.28-7.26 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.37 (t, J = 7.0 Hz, 1H), 5.12 (dd, J = 11.0, 8.6 Hz, 1H), 4.71 (dt, J = 48.6, 4.6 Hz, 2H), 4.29 - 4.37 (m, 1H), 4.26 (dt, J = 4.6, 2.2 Hz, 1H), 4.04 - 4.14 (m, 1H), 3.94 - 4.02 (m, 2H), 3.76 (s, 3H)。
259		598.3	方法D， RT = 1.48 min，97%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.12 (d, J = 8.8 Hz, 1H), 7.84 (d, J = 8.8 Hz, 2H), 7.62 (d, J = 8.8 Hz, 2H), 7.49 (d, J = 9.0 Hz, 1H), 6.84 - 6.70 (m, 2H), 6.51 (d, J = 9.0 Hz, 1H), 5.22 (dd, J = 11.4, 8.9 Hz, 1H), 4.48 - 7.43 (m, 1H), 4.17 - 4.05 (m, 1H), 4.01 (br t, J = 8.8 Hz, 1H), 3.90 - 3.83 (m, 1H), 3.76 (s, 3H), 3.74 (s, 3H), 3.44 - 3.33 (m, 2H), 3.25-3.24 (m, 1H), 2.83 - 2.78 (m, 1H), 2.46-2.43 (m, 1H), 2.25 (s, 3H), 1.87-1.82 (m, 1H), 1.71-1.69 (m, 1H)。

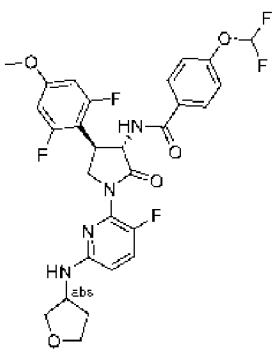
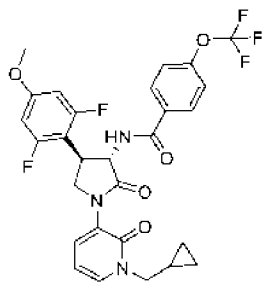
260		542.3	方法D， RT = 1.56 min，94%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.98 - 8.90 (m, 1H), 8.00 - 7.85 (m, 2H), 7.58 - 7.51 (m, 1H), 7.41 - 7.16 (m, 5H), 6.97 - 6.85 (m, 2H), 6.24 - 6.18 (m, 1H), 5.27 - 4.60 (m, 1H), 4.20 - 3.97 (m, 3H), 3.93 - 3.79 (m, 2H), 3.75 - 3.71 (2s, 3H), 3.61 - 3.53 (m, 2H), 3.24 (s, 3H), 2.20 - 2.07 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)
261		587.2	方法D， RT = 1.83 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.03 (br d, J = 8.8 Hz, 1H), 8.29 - 8.13 (m, 1H), 7.99 - 7.78 (m, 2H), 7.35 (t, J = 72 Hz, 1H), 7.31 - 7.25 (m, 2H), 6.85 - 6.65 (m, 4H), 5.22 - 5.02 (m, 1H), 4.34 - 4.05 (m, 2H), 3.82 (s, 3H), 3.80 - 3.68 (s, 1H), 2.85 (d, J = 4.4 Hz, 3H)。
262		564.3	方法D， RT = 1.508 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.18 - 8.88 (m, 1H), 7.96 - 7.91 (m, 2H), 7.64 - 7.07 (m, 4H), 6.77 (dd, J = 10.8, 4.9 Hz, 2H), 6.29 - 6.13 (m, 1H), 5.38 - 4.79 (m, 2H), 4.31 - 3.87 (m, 3H), 3.81 - 3.58 (m, 5H), 3.55 - 3.44 (m, 2H), 2.27 - 1.93 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)

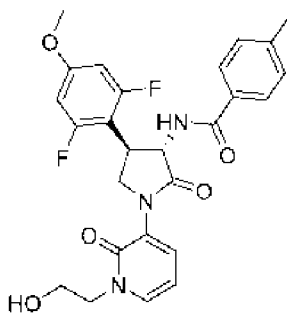
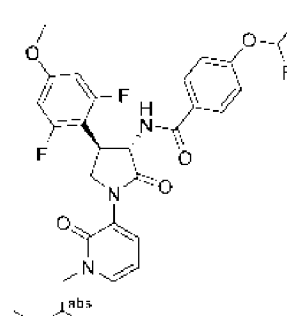
263		611.2	方法D， RT = 1.88 min， 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.09 (br d, J = 8.8 Hz, 1H), 8.32 - 8.21 (m, 1H), 7.91 - 7.78 (m, 2H), 7.65 - 7.51 (m, 2H), 6.97 - 6.85 (m, 1H), 6.78 (d, J = 10.8 Hz, 2H), 6.13 - 5.95 (m, 1H), 5.21 - 5.02 (m, 1H), 4.37 - 4.11 (m, 3H), 3.95 - 3.83 (m, 2H), 3.82 (s, 3H), 3.79 - 3.64 (m, 3H), 2.31 - 2.19 (m, 1H), 2.04 - 1.89 (m, 1H)。 (可 互相轉化之阻轉異構物之混 合物)。
264		582.3	方法D， RT = 1.80 min，94%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.09 (d, J = 8.8 Hz, 1H), 7.94 (d, J = 8.8 Hz, 2H), 7.68 (dd, J = 6.6, 2.0 Hz, 1H), 7.53 - 7.39 (m, 3H), 6.79 (d, J = 11.0 Hz, 2H), 6.33 (t, J = 7.0 Hz, 1H), 5.13 (dd, J = 11.4, 8.4 Hz, 1H), 4.99 - 4.90 (m, 1H), 4.55 - 4.44 (m, 1H), 4.06 - 3.98 (m, 2H), 3.77 (s, 3H), 3.68 - 3.56 (m, 3H), 0.99 (d, J = 5.9 Hz, 3H)。

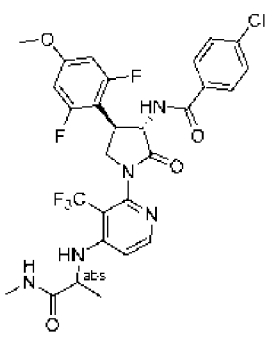
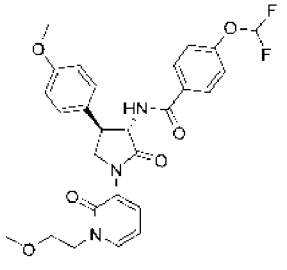
265		554.3	方法D， RT = 1.541 min，96%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.02 - 8.81 (m, 1H), 7.98 - 7.83 (m, 2H), 7.58 - 7.48 (m, 1H), 7.42 - 7.07 (m, 5H), 6.99 - 6.80 (m, 2H), 6.32 - 6.24 (m, 1H), 5.43 - 5.30 (m, 1H), 5.26 - 4.63 (m, 1H), 4.14 - 3.99 (m, 2H), 3.94 - 3.63 (m, 7H), 3.46 (t, J = 9.7 Hz, 1H), 2.47 - 2.38 (m, 1H), 2.22 - 2.07 (2s, 3H), 2.02 - 1.88 (m, 1H)。(可 互相轉化之阻轉異構物之混 合物)。
266		621.1	方法D， RT = 1.80 min，98%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.10 (d, J = 8.0 Hz, 1H), 8.25 (dd, J = 9.0, 3.0 Hz, 1H), 7.92 - 7.87 (m, 3H), 7.35 (t, J = 73.6 Hz, 1H), 7.29 - 7.27 (m, 2H), 6.79 (d, J = 11.0 Hz, 2H), 5.08 (dd, J = 10.0, 8.5 Hz, 1H), 4.85 (t, J = 5.8 Hz, 1H), 4.61- 4.58 (m, 1H), 4.32 - 4.14 (m, 2H), 4.05 - 3.96 (m, 1H), 3.77 (s, 3H), 3.75 - 3.66 (m, 1H), 3.64 - 3.60 (m, 1H), 2.74 - 2.67 (m, 1H), 2.42 - 2.40 (m, 1H), 2.33 - 2.30 (m,1H), 2.10 - 2.04 (m, 1H)。

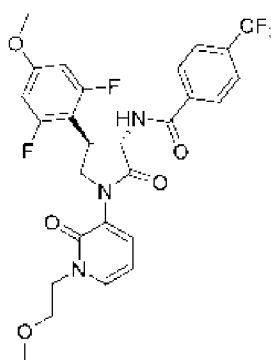
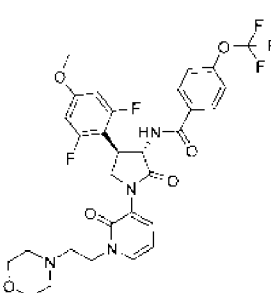
267		533.2	方法D， RT = 1.989 min， 93.4%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.17 - 9.08 (m, 1H), 7.85 (d, J = 8.8 Hz, 2H), 7.63 - 7.48 (m, 4H), 7.11 (dd, J = 10.4, 1.3 Hz, 1H), 6.81 (d, J = 10.8 Hz, 2H), 5.18 (d, J = 1.5 Hz, 1H), 5.06 (dd, J = 8.1, 10.0 Hz, 1H), 4.24 - 4.05 (m, 2H), 4.04 - 3.99 (m, 1H), 3.79 (s, 3H), 1.44 (s, 6H) °
268		582.2	方法D， RT = 1.640 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.01 (d, J = 8.6 Hz, 1H), 7.93 (dd, J = 4.5, 3.3 Hz, 1H), 7.91 - 7.85 (m, 2H), 7.80 (dd, J = 8.4, 3.3 Hz, 1H), 7.34 (t, J = 73.6 Hz, 1H), 7.28 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 5.12 (dd, J = 10.8, 8.6 Hz, 1H), 4.18 - 4.03 (m, 4H), 3.97 (s, 1H), 3.77 (s, 3H), 3.61 (t, J = 5.4 Hz, 2H), 3.26 (s, 3H) °

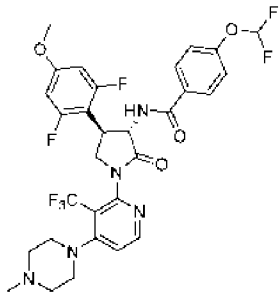
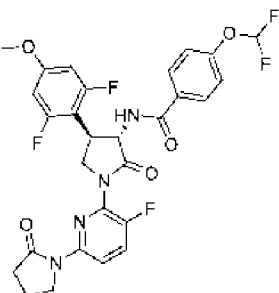
269		628.2	方法D， RT = 2.016 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.11 (d, J = 8.6 Hz, 1H), 8.01 - 7.89 (m, 2H), 7.79 (dd, J = 6.6, 2.0 Hz, 1H), 7.61 (dd, J = 7.1, 2.0 Hz, 1H), 7.49 (d, J = 8.1 Hz, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.36 (t, J = 7.0 Hz, 1H), 5.13 (dd, J = 10.8, 8.6 Hz, 1H), 4.20 - 4.05 (m, 3H), 4.05 - 3.91 (m, 2H), 3.77 (s, 3H), 2.69 - 2.55 (m, 4H), 2.48 - 2.41 (m, 1H)。
270		641.2	方法D， RT = 1.698 min， 94.4%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.08 (d, J = 8.8 Hz, 1H), 8.27 (d, J = 8.3 Hz, 1H), 7.89 (d, J = 8.8 Hz, 2H), 7.57 (d, J = 8.1 Hz, 1H), 7.54 - 7.11 (m, 3H), 7.34 (t, J = 73.6 Hz, 1H), 6.79 (d, J = 10.8 Hz, 2H), 5.23 - 5.12 (m, 1H), 4.31 - 4.19 (m, 1H), 4.13 (br t, J = 9.8 Hz, 1H), 3.96 (br t, J = 9.8 Hz, 1H), 3.77 (s, 3H), 3.08 (br d, J = 12.0 Hz, 2H), 2.95 - 3.90 (m, 1H), 2.68 - 2.61 (m, 2H), 1.85 - 2.80 (m, 2H), 1.72 - 1.60 (m, 2H)。

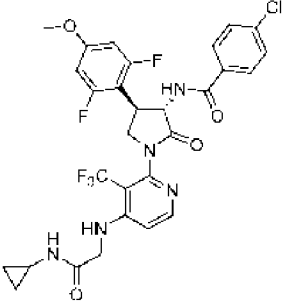
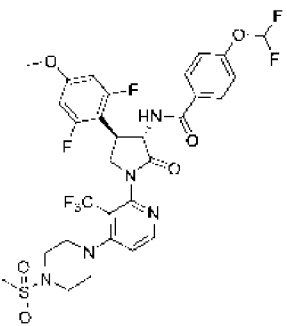
271		593.3	方法D， RT = 1.83 min，98%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.07 (d, J = 8.8 Hz, 1H), 7.93 - 7.83 (m, 2H), 77.53 - 7.48 (m, 1H), 7.35 (t, J = 73.6 Hz, 1H), 7.28 - 7.26 (m, 2H), 6.96 (d, J = 5.9 Hz, 1H), 6.87 - 6.64 (m, 2H), 6.46 (dd, J = 8.9, 2.6 Hz, 1H), 5.17 - 5.05 (m, 1H), 4.29 - 4.19 (m, 1H), 4.19 - 4.08 (m, 2H), 4.02 - 3.93 (m, 1H), 3.90 - 3.88 (m, 1H), 3.85 - 3.77 (m, 1H), 3.76 (s, 3H), 3.73-3.71 (m, 1H), 3.51-3.49 (m, 1H), 2.18-2.13 (m, 1H), 1.86 - 1.70 (m, 1H)。
272		578.2	方法D， RT = 1.946 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.11 (d, J = 8.8 Hz, 1H), 8.03 - 7.87 (m, 2H), 7.79 (dd, J = 6.6, 2.0 Hz, 1H), 7.59 (dd, J = 7.1, 2.0 Hz, 1H), 7.49 (d, J = 8.1 Hz, 2H), 6.77 (d, J = 10.5 Hz, 2H), 6.35 (t, J = 7.0 Hz, 1H), 5.14 (dd, J = 11.0, 8.6 Hz, 1H), 4.17 - 4.05 (m, 1H), 4.05 - 3.92 (m, 2H), 3.89 - 3.73 (m, 2H), 3.72 (s, 3H), 1.31 - 1.18 (m, 1H), 0.55 - 0.45 (m, 2H), 0.43 - 0.34 (m, 2H)。

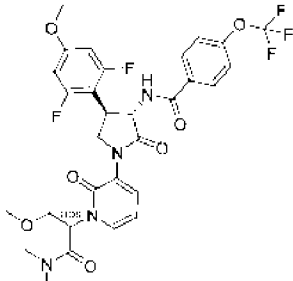
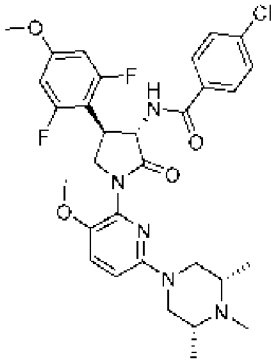
273		498.3	方法D， RT = 1.692 min， 93.2%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.87 (d, J = 8.5 Hz, 1H), 7.79 - 7.69 (m, 2H), 7.65 (dd, J = 6.8, 1.8 Hz, 1H), 7.58 (dd, J = 7.5, 2.0 Hz, 1H), 7.28 (d, J = 8.5 Hz, 2H), 6.76 (d, J = 10.5 Hz, 2H), 6.35 - 6.27 (m, 1H), 5.11 (dd, J = 11.0, 8.5 Hz, 1H), 4.98 - 4.89 (m, 1H), 4.14 - 4.06 (m, 1H), 4.03 - 3.94 (m, 4H), 3.76 (s, 3H), 3.65 (d, J = 5.5 Hz, 2H), 2.35 (s, 3H)。
274		626.2	方法D， RT = 1.700 min， 98.8%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.01 (d, J = 8.6 Hz, 1H), 7.88 (d, J = 8.8 Hz, 2H), 7.63 - 7.58 (m, 2H), 7.34 (t, J = 73.6 Hz, 1H), 7.28 (m, 2H), 6.76 (d, J = 10.8 Hz, 2H), 6.32 (t, J = 7.0 Hz, 1H), 5.10 (dd, J = 10.9, 8.9 Hz, 1H), 4.15 - 3.82 (m, 5H), 3.76 (s, 3H), 3.67 - 3.63 (m, 1H), 3.19 (s, 3H), 1.09 (d, J = 6.1 Hz, 3H)。

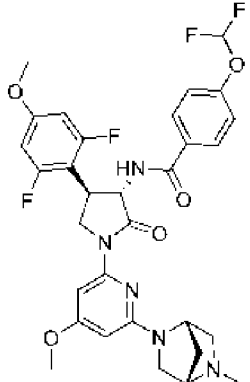
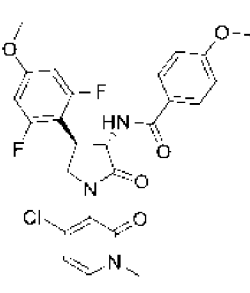
275		626.2	方法D , RT = 1.77 min , 97.5%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.10 (d, J = 8.5 Hz, 1H), 8.39 - 8.25 (m, 1H), 8.23 - 8.13 (m, 1H), 7.90 - 7.75 (m, 2H), 7.62 - 7.49 (m, 2H), 6.79 (d, J = 10.5 Hz, 2H), 6.73 -6.61 (m, 1H), 6.43 - 6.27 (m, 1H), 5.21 - 5.02 (m, 1H), 4.38 - 4.05 (m, 3H), 3.85 - 3.79 (m, 1H), 3.77 (s, 3H), 2.66 (d, J = 8 Hz, 3H), 1.32 (d, J = 4.2 Hz, 3H) °
276		528.3	方法D , RT = 1.509 min , 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 8.92 (d, J = 8.6 Hz, 1H), 7.99 - 7.90 (m, 2H), 7.64 (dd, J = 6.8, 2.0 Hz, 1H), 7.59 (dd, J = 7.2, 2.0 Hz, 1H), 7.33 (t, J = 80.0 Hz, 1H), 7.36 - 7.27 (m, 4H), 6.96 - 6.80 (m, 2H), 6.32 (t, J = 7.0 Hz, 1H), 5.01 (dd, J = 10.9, 8.9 Hz, 1H), 4.18 - 4.06 (m, 3H), 3.81 - 3.68 (m, 5H), 3.60 (t, J = 5.4 Hz, 2H), 3.25 (s, 3H) °

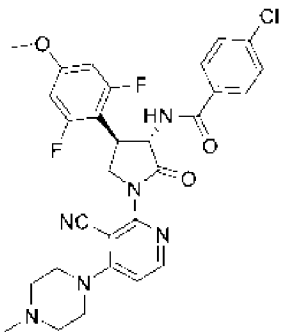
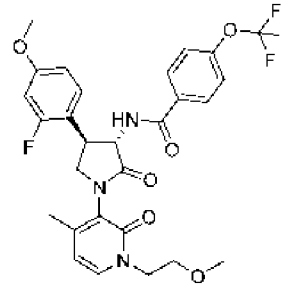
277		566.2	方法D， RT = 1.782 min， 99.6%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.23 (d, J = 8.3 Hz, 1H), 8.02 (d, J = 8.1 Hz, 2H), 7.88 (d, J = 8.1 Hz, 2H), 7.67 (dd, J = 6.8, 2.0 Hz, 1H), 7.61 (dd, J = 7.3, 2.0 Hz, 1H), 6.77 (d, J = 10.8 Hz, 2H), 6.33 (t, J = 7.0 Hz, 1H), 5.15 (dd, J = 11.0, 8.6 Hz, 1H), 4.22 - 4.06 (m, 3H), 4.04 - 3.94 (m, 2H), 3.77 (s, 3H), 3.61 (t, J = 5.3 Hz, 2H), 3.26 (s, 3H)。
278		637.3	方法D， RT = 1.504 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.12 (d, J = 8.6 Hz, 1H), 7.86 - 8.00 (m, 2H), 7.72 (dd, J = 6.8, 2.0 Hz, 1H), 7.59 (dd, J = 7.3, 2.0 Hz, 1H), 7.49 (dd, J = 8.9, 0.9 Hz, 2H), 6.69 - 6.84 (m, 2H), 6.33 (t, J = 7.0 Hz, 1H), 5.13 (dd, J = 11.1, 8.7 Hz, 1H), 3.91 - 4.15 (m, 5H), 3.76 (s, 3H), 3.54 (t, J = 4.5 Hz, 4H), 2.57 (s, 2H), 2.36 - 2.48 (m, 4H)。

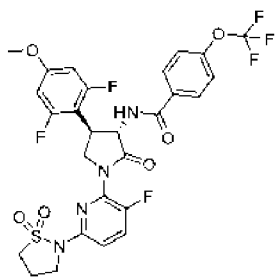
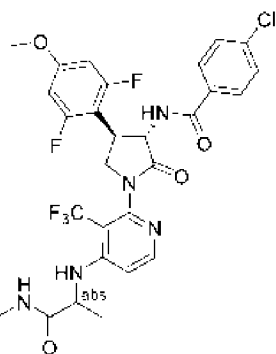
279		656.3	方法D， RT = 1.71 min， 97.5%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.06 (br d, J = 8.8 Hz, 1H), 8.62 - 8.51 (m, 1H), 7.92 - 7.80 (m, 2H), 7.35 (t, J = 72 Hz, 1H), 7.34 - 7.23 (m, 3H), 6.80 (d, J = 10.8 Hz, 2H), 5.15 - 4.99 (m, 1H), 4.46 - 4.38 (m, 1H), 4.32 - 4.16 (m, 1H), 3.90 - 3.78 (m, 1H), 3.77 (s, 3H), 3.49 - 3.37 (m, 4H), 3.30 - 3.05 (m, 4H), 2.89 (s, 3H)。
280		591.2	方法D， RT = 1.82 min，98%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.12 (d, J = 8.6 Hz, 1H), 8.27 (dd, J = 9.2, 3.1 Hz, 1H), 7.95 - 7.85 (m, 3H), 7.35 (t, J = 73.6 Hz, 1H), 7.29 - 7.27 (m, 2H), 6.80 (d, J = 10.8 Hz, 2H), 5.11 (br dd, J = 10.4, 8.2 Hz, 1H), 4.31 - 4.17 (m, 2H), 4.10 - 3.91 (m, 3H), 3.78 (s, 3H), 2.59 (t, J = 8.1 Hz, 2H), 2.09 - 1.98 (m, 2H)。

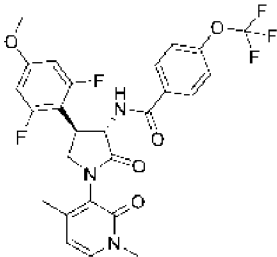
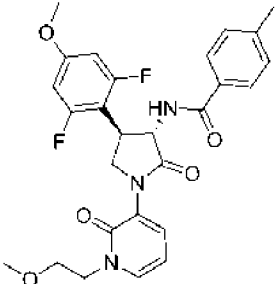
281		638.3	方法C， RT = 1.71 min， 98.5%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.13 - 8.95 (m, 1H), 8.29 - 8.20 (m, 2H), 7.91 - 7.75 (m, 2H), 7.61 - 7.56 (m, 2H), 6.81 - 6.76 (m, 2H), 6.75 - 6.68 (m, 1H), 6.58 - 6.51 (m, 1H), 5.19 - 4.98 (m, 1H), 4.35 - 4.26 (m, 1H), 4.25 - 4.10 (m, 1H), 3.89 - 3.75 (m, 2H), 3.80 (s, 3H), 3.78 - 3.74 (m, 1H), 2.64 - 2.68 (m, 1H), 0.68 - 0.62 (m, 2H), 0.46 - 0.42 (m, 2H)。
282		720.2	方法D， RT = 1.88 min， 97.8%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.09 - 8.98 (m, 1H), 8.57 - 8.49 (m, 1H), 7.87 (td, J = 7.4, 0.9 Hz, 2H), 7.35 (t, J = 72 Hz, 1H), 7.32 - 7.25 (m, 3H), 6.79 (d, J = 10.8 Hz, 2H), 5.17 - 5.06 (m, 1H), 4.45 - 4.35 (m, 1H), 4.29 - 4.18 (m, 1H), 3.90 - 3.80 (m, 1H), 3.77 (s, 3H), 3.41 - 3.25 (m, 8H), 2.96 (s, 3H)。

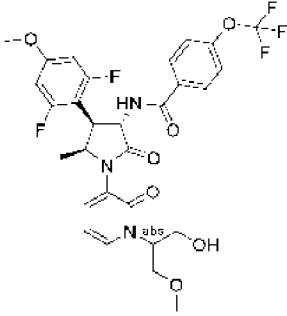
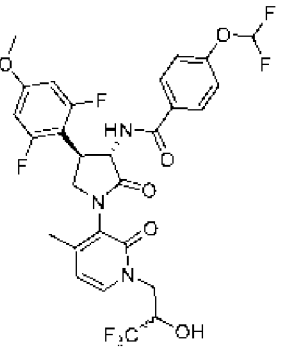
283		653.3	方法D， RT = 1.790 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.11 (d, J = 8.8 Hz, 1H), 8.00 - 7.87 (m, 2H), 7.72 (dd, J = 7.1, 2.0 Hz, 1H), 7.62 (dd, J = 7.2, 2.0 Hz, 1H), 7.54 - 7.40 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.4 (t, J = 7.1 Hz, 1H), 6.06 (dd, J = 8.6, 5.1 Hz, 1H), 5.13 (dd, J = 11.1, 8.7 Hz, 1H), 4.15 - 3.96 (m, 2H), 3.96 - 3.79 (m, 3H), 3.76 (s, 3H), 3.27 (s, 3H), 3.12 (s, 3H), 2.85 (s, 3H)。
284		614.3	方法D， RT = 1.53 min，99%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.11 (d, J = 9.0 Hz, 1H), 7.84 (d, J = 8.6 Hz, 2H), 7.61 - 7.54 (m, 2H), 7.52 (d, J = 8.8 Hz, 1H), 6.86 (d, J = 8.8 Hz, 1H), 6.82 - 6.71 (m, 2H), 5.21 (dd, J = 9.2, 10.9 Hz, 1H), 4.18 - 4.01 (m, 2H), 3.99 - 3.90 (m, 2H), 3.88 - 3.82 (m, 1H), 3.76 (s, 6H), 2.47 - 2.39 (m, 2H), 2.23 - 2.11 (m, 5H), 1.12 - 1.01 (m, 6H)。

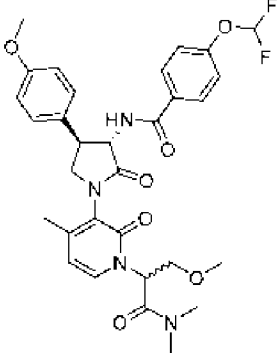
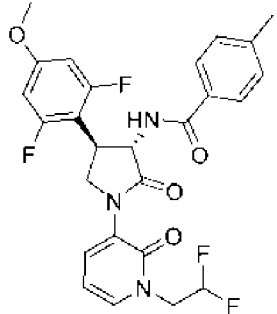
285		630.2	方法D， RT = 1.73 min， 96.8%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.06 (d, J = 8.8 Hz, 1H), 7.88 (d, J = 8.8 Hz, 2H), 7.36 (t, J = 73.6 Hz, 1H), 7.30 - 7.26 (m, 3H), 6.80 (d, J = 10.8 Hz, 2H), 5.84 (s, 1H), 5.08 (dd, J = 11.1, 8.4 Hz, 1H), 4.70 - 4.60 (m, 1H), 4.52 - 4.40 (m, 1H), 4.12 - 4.01 (m, 1H), 3.91 - 3.83 (m, 2H), 3.81 (s, 3H) 3.78 (s, 3H), 3.67 - 3.56 (m, 1H), 3.46 (m, 1H), 2.92 - 2.85 (m, 1H), 2.46 - (s, 3H), 1.97 - 1.85 (m, 2H), 1.79 - 1.75 (m, 1H)。
286		554.1	方法D， RT = 1.659 min， 97.8%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.13 - 8.93 (m, 1H), 7.97 - 7.78 (m, 3H), 7.34 (t, J = 73.6 Hz, 1H), 7.28 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.53 (dd, J = 7.3, 8.6 Hz, 1H), 5.35 - 5.07 (m, 1H), 4.24 - 4.09 (m, 1H), 4.05 - 3.89 (m, 1H), 3.76 (s, 3H), 3.64 - 3.53 (m, 1H), 3.50 (d, J = 5.6 Hz, 3H)。(可互相轉化之阻轉異構物之混合物)

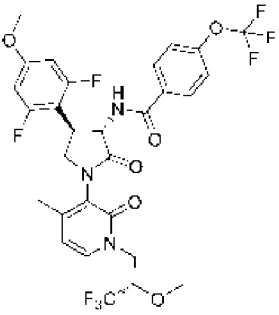
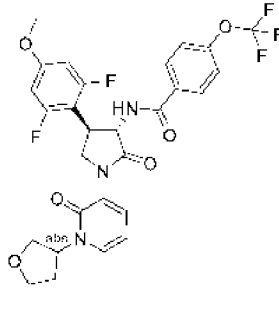
287		581.3	方法D， RT = 1.76 min，94%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.19 (d, J = 8.6 Hz, 1H), 8.33 (d, J = 5.9 Hz, 1H), 7.87 - 7.78 (m, 2H), 7.61 - 7.53 (m, 2H), 7.00 (d, J = 6.4 Hz, 1H), 6.80 (d, J = 10.8 Hz, 2H), 5.10 (dd, J = 10.8, 8.6 Hz, 1H), 4.38 - 4.30 (m, 1H), 4.20 (q, J = 9.9 Hz, 1H), 4.06 - 3.96 (m, 1H), 3.77 (s, 3H), 3.57 - 3.45 (m, 4H), 2.51 - 2.44 (m, 4H), 2.26 (s, 3H)。
288		578.2	方法D， RT = 1.83 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.17 - 9.00 (m, 1H), 8.09 - 7.87 (m, 2H), 7.66 - 7.35 (m, 4H), 6.94 - 6.66 (m, 2H), 6.20 (d, J = 6.8 Hz, 1H), 5.41 - 4.78 (m, 1H), 4.22 - 3.89 (m, 4H), 3.78 - 3.72 (2s, 3H), 3.63 - 3.37 (2s, 3H), 3.24 (s, 3H), 2.21 - 2.06 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)

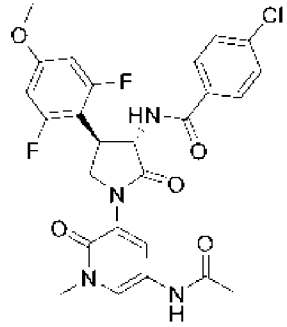
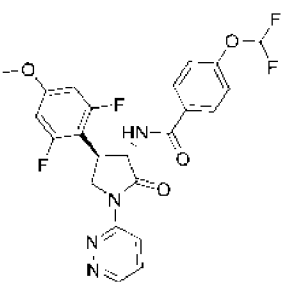
289		644.1	方法D， RT = 1.99 min，94%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.21 (d, J = 8.3 Hz, 1H), 7.99 - 7.82 (m, 3H), 7.50 (d, J = 8.8 Hz, 2H), 7.13 (dd, J = 9.3, 2.4 Hz, 1H), 6.80 (d, J = 10.8 Hz, 2H), 5.17 - 5.07 (m, 1H), 4.28 - 4.16 (m, 2H), 4.09 - 3.99 (m, 1H), 3.94 - 3.82 (m, 2H), 3.77 (s, 3H), 3.59 (t, J = 7.2 Hz, 2H), 2.43 - 2.38 (m, 2H)。
290		626.2	方法D， RT = 1.77 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.10 (d, J = 8.5 Hz, 1H), 8.39 - 8.25 (m, 1H), 8.23 - 8.13 (m, 1H), 7.90 - 7.75 (m, 2H), 7.62 - 7.49 (m, 2H), 6.79 (d, J = 10.5 Hz, 2H), 6.73 - 6.61 (m, 1H), 6.43 - 6.27 (m, 1H), 5.21 - 5.02 (m, 1H), 4.38 - 4.05 (m, 3H), 3.85 - 3.79 (m, 1H), 3.77 (s, 3H), 2.69 - 2.64 (2s, 3H), 1.43 - 1.32 (m, 3H)。(可互相轉化之阻轉異構物之混合物)

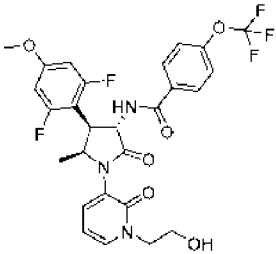
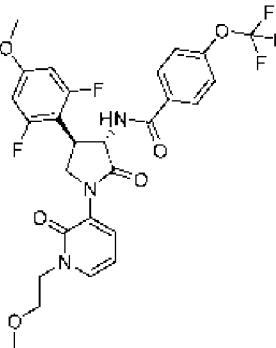
291		552.2	方法D， RT = 1.761 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.25 - 8.95 (m, 1H), 8.01 - 7.86 (m, 2H), 7.73 - 7.57 (m, 1H), 7.54 - 7.36 (m, 2H), 6.88 - 6.66 (m, 2H), 6.28 - 6.15 (m, 1H), 5.38 - 4.84 (m, 1H), 4.30 - 4.05 (m, 2H), 3.80 - 3.72 (2s, 3H), 3.55 - 3.40 (m, 4H), 2.23 - 2.01 (2s, 3H)。 (可互相轉化之阻轉異構物之混合物)
292		512.3	方法D， RT = 1.560 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.89 (d, J = 8.8 Hz, 1H), 7.77 - 7.69 (m, 2H), 7.66 (dd, J = 6.8, 2.0 Hz, 1H), 7.59 (dd, J = 7.3, 2.0 Hz, 1H), 7.28 (d, J = 8.1 Hz, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.32 (t, J = 7.0 Hz, 1H), 5.12 (dd, J = 8.7, 11.1 Hz, 1H), 4.20 - 4.04 (m, 3H), 3.97 (br d, J = 9.5 Hz, 2H), 3.76 (s, 3H), 3.60 (t, J = 5.3 Hz, 2H), 3.25 (s, 3H), 2.35 (s, 3H)。

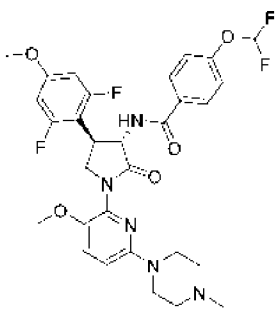
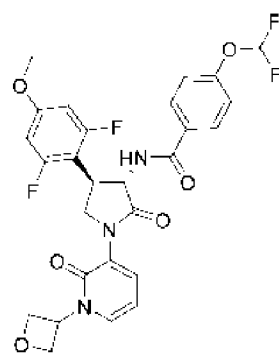
293		626.2	方法D， RT = 1.72 min，94%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 8.97 (br d, J = 8.1 Hz, 1H), 7.96 (d, J = 8.6 Hz, 2H), 7.74 - 7.66 (m, 1H), 7.56 (dd, J = 7.0, 1.3 Hz, 1H), 7.45 (d, J = 8.6 Hz, 2H), 6.77 (d, J = 11.5 Hz, 2H), 6.33 (t, J = 7.0 Hz, 1H), 5.71 - 5.61 (m, 1H), 5.14 - 4.97 (m, 2H), 4.67 - 4.56 (m, 1H), 4.29 (dd, J = 11.7, 8.3 Hz, 1H), 3.83 - 3.69, (m, 4H), 3.65 (td, J = 5.4, 10.9 Hz, 2H), 3.34 - 3.32 (m, 1H), 3.23 (s, 3H), 0.91 (br d, J = 6.8 Hz, 3H)。
294		632.2	方法D， RT = 1.808 min， 98.1%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.18 - 8.84 (m, 1H), 8.00 - 7.82 (m, 2H), 7.73 - 7.06 (m, 3H), 7.34 (t, J = 73.6 Hz, 1H), 6.79 - 6.73 (m, 2H), 6.35 - 6.11 (m, 1H), 5.37 - 4.75 (m, 1H), 4.49 - 4.03 (m, 5H), 3.88 - 3.74 (m, 4H), 3.55 - 3.48 (m, 1H), 2.25 - 2.01 (2s, 3H)。(可 互相轉化之阻轉異構物之混 合物)

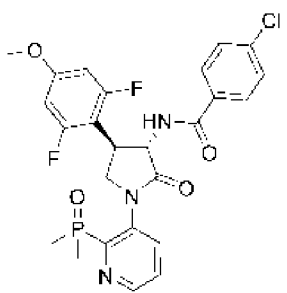
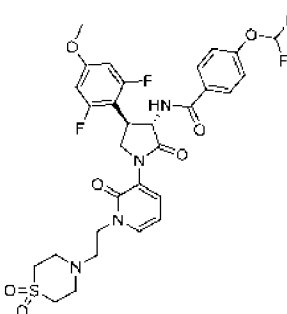
295		613.3	方法D， RT = 1.563 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.94 (d, J = 9.0 Hz, 1H), 7.97 - 7.87 (m, 2H), 7.65 - 7.56 (m, 1H), 7.52 - 7.15 (m, 4H), 6.95 - 6.80 (m, 2H), 6.28 (d, J = 7.6 Hz, 1H), 6.02 (s, 1H), 5.21 - 4.73 (m, 1H), 4.11 - 4.03 (m, 1H), 3.93 - 3.75 (m, 5H), 3.74 - 3.67 (2s, 3H), 3.28 - 3.22 (2s, 3H), 3.16 - 3.05 (m, 3H), 2.90 - 2.80 (2s, 3H), 2.24 - 2.06 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)
296		518.2	方法D， RT = 1.656 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.90 (d, J = 8.6 Hz, 1H), 7.78 - 7.70 (m, 3H), 7.66 (dd, J = 7.3, 2.0 Hz, 1H), 7.28 (d, J = 8.1 Hz, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.42 (t, J = 8.0 Hz, 1H), 6.35 (tt, J = 56.2 Hz, 1H), 5.11 (dd, J = 8.6, 11.0 Hz, 1H), 4.55 - 4.35 (m, 2H), 4.16 - 4.05 (m, 1H), 3.98 (br d, J = 9.3 Hz, 2H), 3.76 (s, 3H), 2.35 (s, 3H)。

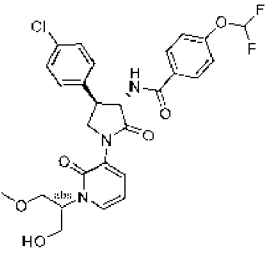
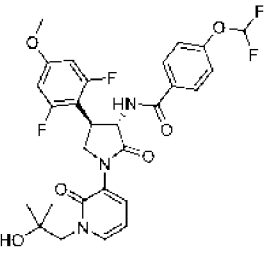
297		664.2	方法D， RT = 2.100 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.27 - 8.88 (m, 1H), 8.04 - 7.82 (m, 2H), 7.71 - 7.54 (m, 1H), 7.54 - 7.26 (m, 2H), 6.77 (dd, J = 10.6, 5.5 Hz, 2H), 6.44 - 6.10 (m, 1H), 5.40 - 4.80 (m, 1H), 4.43 - 3.89 (m, 5H), 3.83 - 3.69 (m, 3H), 3.61 - 3.46 (m, 1H), 3.38 - 3.33 (m, 3H), 2.26 - 2.03 (m, 3H)。(可互相轉化之阻轉異構物之混合物)
298		594.2	方法D， RT = 1.773 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.12 (d, J = 8.6 Hz, 1H), 7.98 - 7.89 (m, 2H), 7.64 (dd, J = 7.1, 2.0 Hz, 1H), 7.59 (dd, J = 7.2, 2.0 Hz, 1H), 7.49 (dd, J = 1.0, 8.8 Hz, 2H), 6.78 (d, J = 10.8 Hz, 2H), 6.41 (t, J = 7.1 Hz, 1H), 5.45 - 5.39 (m, 1H), 5.12 (dd, J = 11.1, 8.7 Hz, 1H), 4.17 - 4.02 (m, 2H), 3.98 (br d, J = 8.8 Hz, 2H), 3.87 (d, J = 4.4 Hz, 2H), 3.82 - 3.69 (m, 4H), 2.48 - 2.40 (m, 1H), 1.98 (m, 1H)。

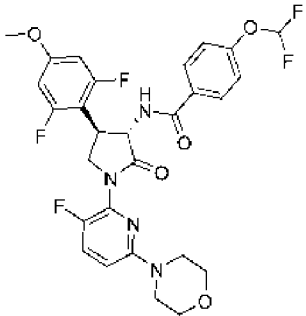
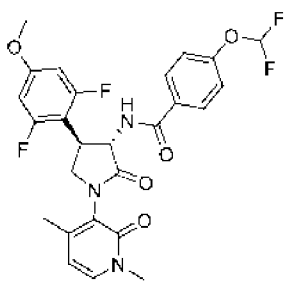
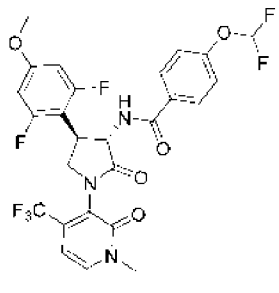
299		545.2	方法D， RT = 1.397 min， 94.9%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.83 (s, 1H), 9.07 (d, <i>J</i> = 8.6 Hz, 1H), 8.14 (d, <i>J</i> = 2.7 Hz, 1H), 7.84 (d, <i>J</i> = 8.6 Hz, 2H), 7.66 (d, <i>J</i> = 2.7 Hz, 1H), 7.58 - 7.52 (m, 3H), 6.78 (d, <i>J</i> = 10.8 Hz, 2H), 5.01 (br dd, <i>J</i> = 8.2, 9.9 Hz, 1H), 4.16 - 3.94 (m, 3H), 3.74 (s, 3H), 3.49 (s, 3H), 2.00 (s, 3H)。
300		491.1	方法D， RT = 1.65 min，99%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.19 - 9.01 (m, 2H), 8.66 - 8.51 (m, 1H), 7.89 (d, <i>J</i> = 8.6 Hz, 2H), 7.78 (dd, <i>J</i> = 9.3, 4.6 Hz, 1H), 7.35 (t, <i>J</i> = 76 Hz, 1H), 7.30-7.29 (m, 2H), 6.80 (br d, <i>J</i> = 10.5 Hz, 2H), 5.06 (br t, <i>J</i> = 9.4 Hz, 1H), 4.58 (br t, <i>J</i> = 8.8 Hz, 1H), 4.30 - 4.05 (m, 2H), 3.78 (s, 3H)。

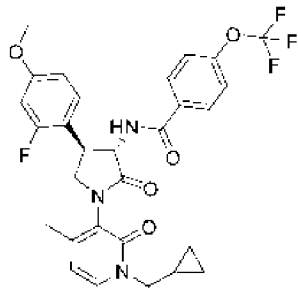
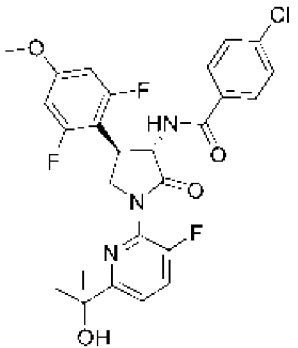
301		582.1	方法D， RT = 1.73 min， 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 8.97 (d, <i>J</i> = 8.8 Hz, 1H), 8.02 - 7.91 (m, 2H), 7.67 (dd, <i>J</i> = 6.6, 2.0 Hz, 1H), 7.59 (dd, <i>J</i> = 6.6, 2.0 Hz, 1H), 7.45 (d, <i>J</i> = 8.1 Hz, 2H), 6.82 - 6.70 (m, 2H), 6.31 (t, <i>J</i> = 7.0 Hz, 1H), 5.67 (dd, <i>J</i> = 12.0, 8.6 Hz, 1H), 4.65 - 4.59 (m, 1H), 4.32 - 4.27 (m, 1H), 4.12 - 4.06 (m, 2H), 3.97 - 3.92 (m, 2H), 3.76 (s, 3H), 3.34 - 3.30 (m, 1H), 0.92 (d, <i>J</i> = 6.8 Hz, 3H)。
302		582.2	方法D， RT = 1.808 min， 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.12 (d, <i>J</i> = 8.5 Hz, 1H), 7.99 - 7.90 (m, 2H), 7.67 (dd, <i>J</i> = 6.8, 1.8 Hz, 1H), 7.60 (dd, <i>J</i> = 7.0, 2.0 Hz, 1H), 7.49 (d, <i>J</i> = 8.0 Hz, 2H), 6.77 (d, <i>J</i> = 10.5 Hz, 2H), 6.33 (t, <i>J</i> = 7.0 Hz, 1H), 5.13 (dd, <i>J</i> = 10.8, 8.8 Hz, 1H), 4.17 - 4.04 (m, 3H), 4.03 - 3.93 (m, 2H), 3.77 (s, 3H), 3.60 (t, <i>J</i> = 5.3 Hz, 2H), 3.25 (s, 3H)。

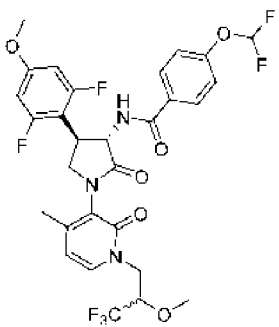
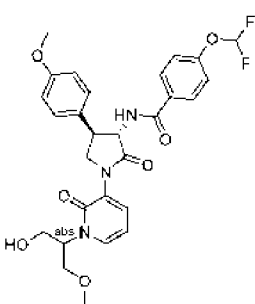
303		618.2	方法D， RT = 1.76 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.03 (br d, J = 9.0 Hz, 1H), 7.95 - 7.83 (m, 2H), 7.62 (d, J = 9.0 Hz, 1H), 7.34 (t, J = 76 Hz, 1H), 7.28 - 7.26 (m, 2H), 6.97 (d, J = 9.0 Hz, 1H), 6.78 (d, J = 10.8 Hz, 2H), 5.21 - 5.16 (m, 1H), 4.34 - 4.12 (m, 3H), 4.11 - 4.05 (m, 1H), 3.93 - 3.83 (m, 1H), 3.79 (s, 3H), 3.77 (s, 3H), 3.58 - 3.47 (m, 2H), 3.18 - 2.96 (m, 4H), 2.86 (s, 3H)。
304		562.2	方法D， RT = 1.527 min，96%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.01 (d, J = 8.6 Hz, 1H), 7.89 (d, J = 8.8 Hz, 2H), 7.82 (dd, J = 7.0, 1.6 Hz, 1H), 7.64 (dd, J = 7.2, 1.6 Hz, 1H), 7.34 (t, J = 76.0 Hz, 1H), 7.27 - 7.25 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.45 (t, J = 7.1 Hz, 1H), 5.54 (m, 1H), 5.09 (dd, J = 10.6, 8.7 Hz, 1H), 4.89 (t, J = 7.2 Hz, 2H), 4.77 (q, J = 7.2 Hz, 2H), 4.15 - 4.03 (m, 1H), 3.99 - 3.95 (m, 2H), 3.76 (s, 3H)。

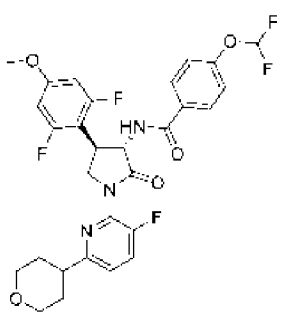
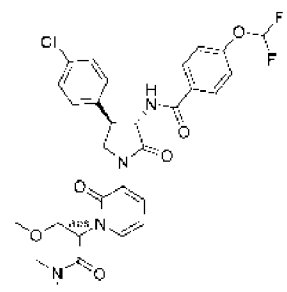
305		534.1	方法D， RT = 1.55 min， 95.6%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.10 - 9.07 (m, 1H), 8.76 - 8.75 (d, J = 4.4 Hz, 1H), 7.98 -7.97 (m, 1H), 7.84 (d, J = 8.6 Hz, 2H), 7.78 - 7.74 (m, 1H), 7.57 - 7.51 (m, 2H), 6.76 - 6.74 (d, J = 10.8 Hz, 1 H), 6.63 - 6.60 (d, J = 11.2 Hz, 1H), 5.17 - 5.13 (m, 1H), 4.22 - 4.19 (m, 1H), 4.1 - 4.03 (m, 2H), 3.77 (s, 3H), 1.85 - 1.65 (m, 6H)。
306		667.2	方法D， RT = 1.524 min， 98.4%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.01 (d, J = 8.8 Hz, 1H), 7.94 - 7.84 (m, 2H), 7.75 (dd, J = 6.7, 2.0 Hz, 1H), 7.60 (dd, J = 7.1, 2.0 Hz, 1H), 7.34 (t, J = 73.6 Hz, 1H), 7.28 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.35 (t, J = 7.0 Hz, 1H), 5.11 (dd, J = 10.9, 8.4 Hz, 1H), 4.14 - 4.01 (m, 3H), 3.98 (br d, J = 8.6 Hz, 2H), 3.76 (s, 3H), 3.14 - 3.05 (m, 4H), 3.04 - 2.90 (m, 4H), 2.85 - 2.77 (m, 2H)。

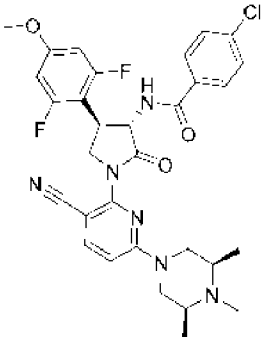
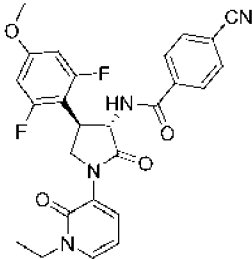
307		562.2	方法D， RT = 1.618 min， 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 8.97 (d, J = 8.8 Hz, 1H), 7.92 (d, J = 9.0 Hz, 2H), 7.68 (dd, J = 7.2, 1.8 Hz, 1H), 7.58 - 7.54 (m, 1H), 7.53 - 7.32 (m, 5H), 7.34 (t, J = 73.6 Hz, 1H), 7.28 - 7.22 (m, 1H), 6.34 (t, J = 7.1 Hz, 1H), 5.12 - 4.99 (m, 3H), 4.20 - 4.13 (m, 1H), 3.88 - 3.59 (m, 6H), 3.22 (s, 3H)。
308		578.2	方法D， RT = 1.575 min， 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.02 (d, J = 8.8 Hz, 1H), 7.95 - 7.81 (m, 2H), 7.65 (dd, J = 6.8, 2.0 Hz, 1H), 7.60 (dd, J = 7.3, 2.0 Hz, 1H), 7.34 (t, J = 76 Hz, 1H), 7.27 - 7.25 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.32 (t, J = 7.1 Hz, 1H), 5.15 (dd, J = 10.9, 8.7 Hz, 1H), 4.79 (br s, 1H), 4.12 - 4.03 (m, 1H), 4.02 - 3.88 (m, 4H), 3.76 (s, 3H), 1.09 (d, J = 5.1 Hz, 6H)。

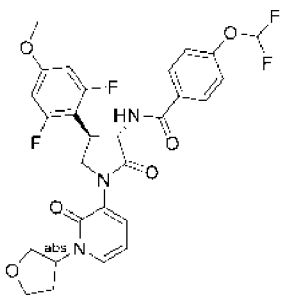
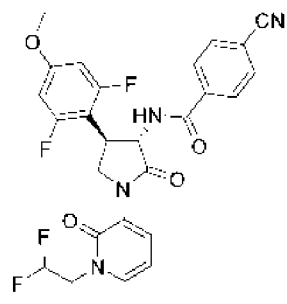
309		592.2	方法D， RT = 1.86 min，94%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.08 (d, J = 8.5 Hz, 1H), 7.95 - 7.84 (m, 2H), 7.73 - 7.60 (m, 1H), 7.35 (t, J = 73.6 Hz, 1H), 7.32 - 7.29 (m, 2H), 6.89 - 6.73 (m, 3H), 5.12 (dd, J = 8.5, 10.5 Hz, 1H), 4.25 - 4.14 (m, 2H), 4.03-3.95 (m, 1H), 3.77 (s, 3H), 3.74 - 3.66 (m, 4H), 3.43-3.41 (m, 4H)。
310		534.2	方法D， RT = 1.575 min， 99.1%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.14 - 8.90 (m, 1H), 7.98 - 7.79 (m, 2H), 7.74 - 7.58 (m, 1H), 7.53 - 7.16 (m, 3H), 6.85 - 6.70 (m, 2H), 6.26 - 6.16 (m, 1H), 5.38 - 4.83 (m, 1H), 4.31 - 4.06 (m, 2H), 3.81 - 3.71 (2s, 3H), 3.53 - 3.41 (m, 4H), 2.23 - 1.97 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)
311		588.2	方法D， RT = 1.792 min， 98.8%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.19 - 8.89 (m, 1H), 8.15 - 8.01 (m, 1H), 7.89 (dd, J = 8.7, 5.0 Hz, 2H), 7.34 - 7.16 (m, 3H), 6.80 - 6.68 (m, 2H), 6.57 (dd, J = 7.0, 5.3 Hz, 1H), 5.36 - 5.10 (m, 1H), 4.26 - 4.12 (m, 1H), 4.03 - 3.86 (m, 1H), 3.75 (s, 3H), 3.61 - 3.40 (m, 4H)。(可互相轉化之阻轉異構物之混合物)。

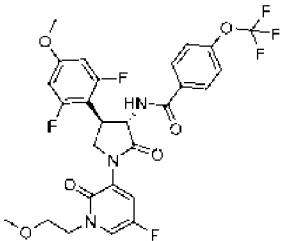
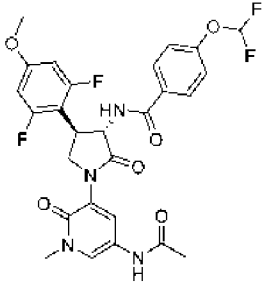
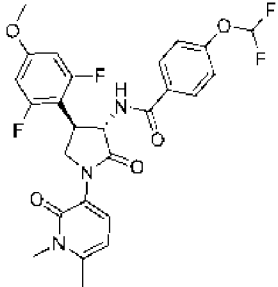
312		574.3	方法C， RT = 1.94 min， 98.3%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.11 - 9.89 (m, 1H), 8.02 - 7.89 (m, 2H), 7.72 - 7.66 (m, 1H), 7.57 - 7.41 (m, 3H), 6.87 - 6.74 (m, 2H), 6.22 (d, J=6.8 Hz, 1H), 5.42 - 4.75 (m, 1H), 4.18 - 3.95 (m, 1H), 3.86 - 3.81 (m, 1H), 3.78 - 3.74 (2s, 3H) 3.76 - 3.65 (m, 1H), 3.42 - 3.35 (m, 2H), 2.20 - 2.10 (2s, 3H), 1.27 - 1.18 (m, 1H), 0.53 - 0.44 (m, 2H), 0.42 - 0.34 (m, 2H) (可互相轉化之阻轉異構物之混合物)
313		534.2	方法D， RT = 1.85 min，99%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.17 (d, J = 8.6 Hz, 1H), 7.91 - 7.75 (m, 3H), 7.65 (dd, J = 8.4, 3.5 Hz, 1H), 7.61 - 7.49 (m, 2H), 6.80 (d, J = 10.8 Hz, 2H), 5.34 (br s, 1H), 5.16 (dd, J = 10.6, 8.7 Hz, 1H), 4.32 - 4.15 (m, 2H), 4.11 - 4.02 (m, 1H), 3.77 (s, 3H), 1.43 (s, 3H), 1.42 (s, 3H)。

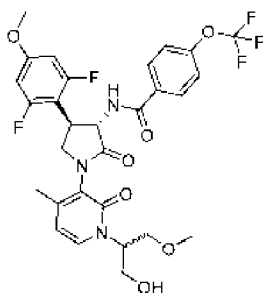
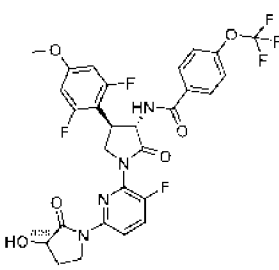
314		646.3	方法D， RT = 1.943 min， 98.6%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.19 - 8.87 (m, 1H), 8.04 - 7.81 (m, 2H), 7.73 - 7.57 (m, 1H), 7.36 - 7.16 (m, 3H), 6.82 - 6.63 (m, 2H), 6.36 - 6.16 (m, 1H), 5.42 - 4.81 (m, 1H), 4.46 - 3.90 (m, 5H), 3.84 - 3.72 (2s, 3H), 3.61 - 3.50 (m, 1H), 3.37 - 3.34 (2s, 3H), 2.24 - 2.08 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)
315		558.3	方法D， RT = 1.424 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.94 - 8.88 (m, 1H), 7.92 (d, J = 8.8 Hz, 2H), 7.71 - 7.64 (m, 1H), 7.56 (d, J = 7.3 Hz, 1H), 7.33 (t, J = 80 Hz, 1H), 7.54 - 7.13 (m, 4H), 6.90 (d, J = 8.3 Hz, 2H), 6.34 (t, J = 6.8 Hz, 1H), 5.11 - 4.97 (m, 3H), 4.16 - 4.08 (m, 2H), 3.80 - 3.62 (m, 8H), 3.23 (s, 3H)。

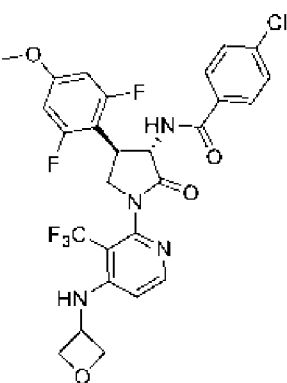
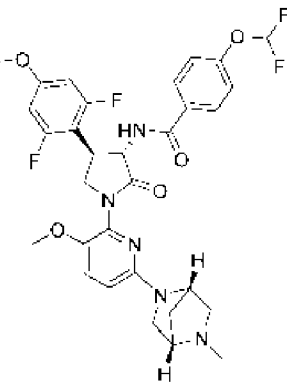
316		592.2	方法D， RT = 1.95 min，98%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.10 (br d, <i>J</i> = 8.6 Hz, 1H), 7.90 (d, <i>J</i> = 8.6 Hz, 2H), 7.86 - 7.72 (m, 1H), 7.35 (t, <i>J</i> = 70 Hz, 1H), 7.37 - 7.29 (m, 3H), 6.79 (d, <i>J</i> = 10.8 Hz, 2H), 5.14-5.11 (m, 1H), 4.32 - 4.17 (m, 2H), 4.16 - 4.03 (m, 1H), 3.99 - 3.88 (m, 2H), 3.78 (s, 3H), 3.45 - 3.42 (m, 2H), 3.02 - 2.91 (m, 1H), 1.86 - 1.61 (m, 4H)。
317		603.2	方法D， RT = 1.696 min， 96.6%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.02 - 8.90 (m, 1H), 7.97 - 7.86 (m, 2H), 7.70 (dd, <i>J</i> = 7.0, 1.8 Hz, 1H), 7.61 (dd, <i>J</i> = 7.2, 1.8 Hz, 1H), 7.50 - 7.37 (m, 4H), 7.34 (t, <i>J</i> = 73.6 Hz, 1H), 7.27 (d, <i>J</i> = 8.2 Hz, 2H), 6.41 (t, <i>J</i> = 7.1 Hz, 1H), 6.07 (dd, <i>J</i> = 8.4, 5.0 Hz, 1H), 5.07 - 4.95 (m, 1H), 4.13 - 4.08 (m, 1H), 3.91 - 3.77 (m, 4H), 3.26 (s, 3H), 3.10 (s, 3H), 2.84 (s, 3H)。

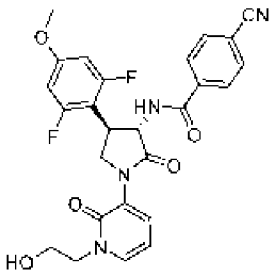
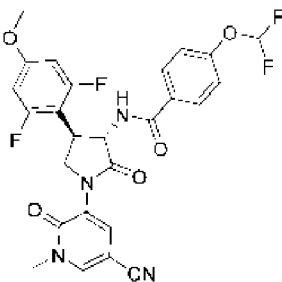
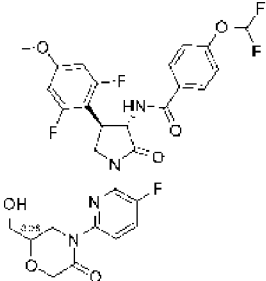
318		609.3	方法D， RT = 1.95 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.21 (d, J = 8.3 Hz, 1H), 8.08 (d, J = 8.2 Hz, 1H), 7.84 (d, J = 8.8 Hz, 2H), 7.52 (d, J = 8.4 Hz, 2H), 7.06 (d, J = 9.0 Hz, 1H), 6.82 (d, J = 10.8 Hz, 2H), 5.05 (dd, J = 10.9, 8.4 Hz, 1H), 4.67 - 4.52 (m, 2H), 4.49 - 4.40 (m, 1H), 4.27 - 4.16 (m, 1H), 4.05 - 3.96 (m, 1H), 3.78 (s, 3H), 3.40 - 3.28 (m, 2H), 3.16 - 3.02 (m, 2H), 2.85 (s, 3H), 1.37 (d, J = 6.8 Hz, 6H)。
319		493.2	方法D， RT = 1.458 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.27 (d, J = 8.8 Hz, 1H), 7.98 (d, J = 1.2 Hz, 4H), 7.77 (dd, J = 6.6, 2.0 Hz, 1H), 7.58 (dd, J = 7.1, 2.0 Hz, 1H), 6.78 (d, J = 10.8 Hz, 2H), 6.35 (t, J = 7.0 Hz, 1H), 5.14 (dd, J = 11.0, 8.6 Hz, 1H), 4.17 - 4.04 (m, 1H), 4.04 - 3.86 (m, 4H), 3.76 (s, 3H), 1.25 (t, J = 7.2 Hz, 3H)。

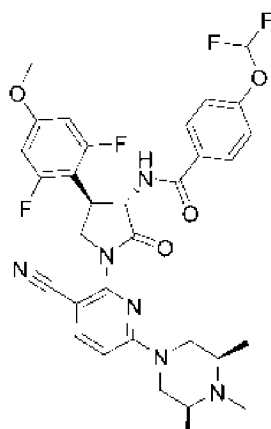
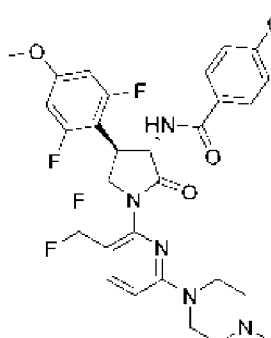
320		576.2	方法D， RT = 1.591 min，98%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 7.93 - 7.84 (m, 2H), 7.64 (dd, <i>J</i> = 1.8, 7.0 Hz, 1H), 7.59 (dd, <i>J</i> = 2.0, 7.1 Hz, 1H), 7.34 (t, <i>J</i> = 76 Hz, 1H), 7.27 - 7.28 (m, 3H), 6.77 (d, <i>J</i> = 11.0 Hz, 2H), 6.41 (t, <i>J</i> = 7.1 Hz, 1H), 5.44 - 5.40 (m, 1H), 5.13 - 5.09 (m, 1H), 4.16 - 3.91 (m, 4H), 3.87 (d, <i>J</i> = 4.4 Hz, 2H), 3.80 - 3.72 (m, 4H), 2.47 - 2.40 (m, 1H), 2.06 - 1.93 (m, 1H)。
321		529.2	方法D， RT = 1.542 min， 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.27 (d, <i>J</i> = 8.6 Hz, 1H), 8.05 - 7.90 (m, 4H), 7.74 (dd, <i>J</i> = 6.8, 2.0 Hz, 1H), 7.67 (dd, <i>J</i> = 7.3, 2.0 Hz, 1H), 6.78 (d, <i>J</i> = 10.8 Hz, 2H), 6.35 (t, <i>J</i> = 56.2 Hz, 1H), 6.43 - 6.4 (m, 1H), 5.13 (dd, <i>J</i> = 11.0, 8.6 Hz, 1H), 4.56 - 4.34 (m, 2H), 4.16 - 4.05 (m, 1H), 4.05 - 3.90 (m, 2H), 3.77 (s, 3H)。

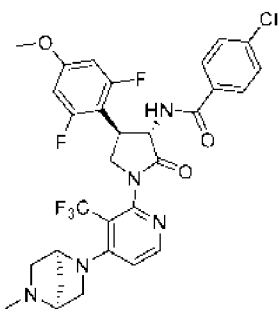
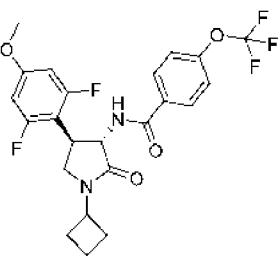
322		600.2	方法D， RT = 1.824 min， 97.6%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.12 (d, J = 8.8 Hz, 1H), 7.99 - 7.88 (m, 3H), 7.81 (dd, J = 8.4, 3.3 Hz, 1H), 7.54 - 7.40 (m, 2H), 6.78 (d, J = 10.8 Hz, 2H), 5.14 (dd, J = 8.6, 10.8 Hz, 1H), 4.20 - 4.03 (m, 4H), 4.02 - 3.91 (m, 1H), 3.77 (s, 3H), 3.61 (t, J = 5.4 Hz, 2H), 3.26 (s, 3H)。
323		577.2	方法D， RT = 1.382 min， 99.03%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.83 (s, 1H), 9.01 (d, J = 8.1 Hz, 1H), 8.14 (d, J = 2.7 Hz, 1H), 7.89 (d, J = 8.8 Hz, 2H), 7.66 (d, J = 2.7 Hz, 1H), 7.34 (t, J = 73.6 Hz, 1H), 7.28 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 5.07 - 4.94 (m, 1H), 4.19 - 3.91 (m, 3H), 3.77 (s, 3H), 3.49 (s, 3H), 2.01 (s, 3H)。
324		534.2	方法D， RT = 1.589 min， 99.7%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.00 (d, J = 9.0 Hz, 1H), 7.92 - 7.83 (m, 2H), 7.55 - 7.14 (m, 3H), 7.34 (t, J = 73.6 Hz, 1H), 6.77 (d, J = 11.0 Hz, 2H), 6.28 - 6.20 (m, 1H), 5.11 (dd, J = 10.8, 8.6 Hz, 1H), 4.12 - 4.03 (m, 1H), 3.97 - 3.92 (m, 2H), 3.76 (s, 3H), 3.49 (s, 3H), 2.40 (s, 3H)。

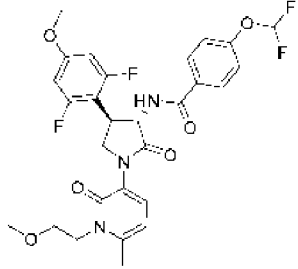
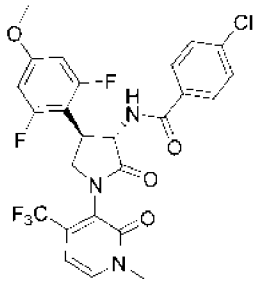
325		626.3	方法D， RT = 1.762 min， 98.6%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.27 - 8.91 (m, 1H), 8.02 - 7.84 (m, 2H), 7.70 - 7.54 (m, 1H), 7.54 - 7.34 (m, 2H), 6.79 - 3.72 (m, 2H), 6.31 - 6.13 (m, 1H), 5.38 - 4.83 (m, 3H), 4.27 - 4.05 (m, 2H), 3.81 - 3.55 (m, 7H), 3.55 - 3.45 (m, 1H), 3.24 - 3.16 (2s, 3H), 2.23 - 1.94 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)
326		625.2	方法D， RT = 1.85 min，98%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.22 (d, J = 8.3 Hz, 1H), 8.29 (dd, J = 9.0, 2.9 Hz, 1H), 8.03 - 7.88 (m, 3H), 7.55 - 7.41 (m, 2H), 6.80 (d, J = 10.8 Hz, 2H), 5.86 (d, J = 6.1 Hz, 1H), 5.12 (dd, J = 10.5, 8.3 Hz, 1H), 4.44 - 4.38 (m, 1H), 4.29 - 4.16 (m, 2H), 4.13 - 3.93 (m, 2H), 3.77 (s, 3H), 3.73-3.69 (m, 1H), 2.44 - 2.33 (m, 1H), 1.88 - 1.75 (m, 1H)。

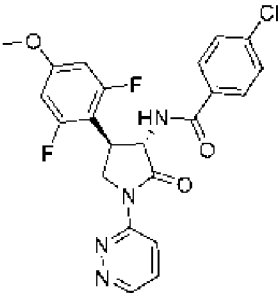
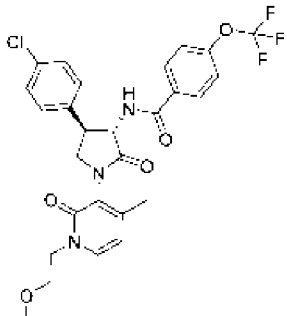
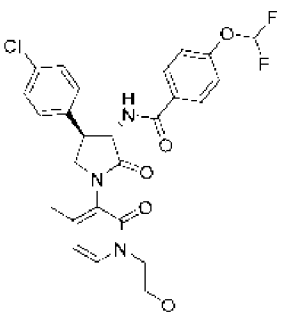
327		597.2	方法C， RT = 1.73 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.10 (d, J = 8.8 Hz, 1H), 8.26 - 8.21 (m, 1H), 7.89 -7.80 (m, 2H), 7.63 - 7.55 (m, 2H), 6.98 - 6.89 (m, 1H), 6.79 (d, J = 10.8 Hz, 2H), 6.51 - 6.45 (m, 1H), 5.19 - 5.11 (m, 1H), 4.86 - 4.81(m, 2H), 4.77 - 4.69 (m, 1H), 4.65 - 4.60 (m, 2H), 4.35 - 4.26 (m, 1H), 4.22 - 4.15 (m, 1H), 3.76 (s, 3H), 3.75 - 3.63 (m, 1H)。
328		630.3	方法C， RT = 1.47 min，97%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.05 (d, J = 8.8 Hz, 1H), 7.96 - 7.82 (m, 2H), 7.50 - 7.48 (m, 1H), 7.35 (t, J = 73.6 Hz, 1H), 7.29 - 7.27 (m, 2H), 6.84 - 6.69 (m, 2H), 6.52 (d, J = 9.0 Hz, 1H), 5.22-5.198 (m, 1H), 4.48 - 4.42 (m, 1H), 4.18 - 4.08 (m, 1H), 4.04 - 3.96 (m, 1H), 3.91 - 3.82 (m, 1H), 3.76 (s, 3H), 3.74 (s, 3H), 3.47 - 3.40 (br s, 2H), 3.25 - 3.230 (m, 1H), 2.89 - 2.74 (m, 1H), 2.47 - 2.43 (m, 1H), 2.30 (s, 3H), 1.88 - 1.81 (m, 1H), 1.71-1.68 (m, 1H)。

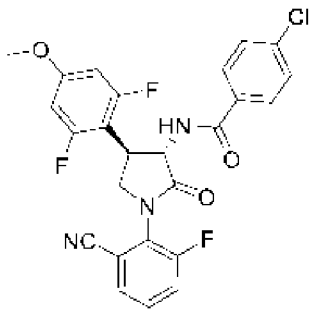
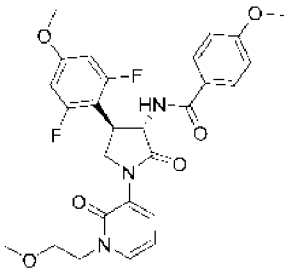
329		509.2	方法D， RT = 1.268 min， 97.5%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.28 (br d, J = 8.8 Hz, 1H), 8.07 - 7.87 (m, 4H), 7.65 (dd, J = 6.8, 2.0 Hz, 1H), 7.59 (dd, J = 7.3, 2.0 Hz, 1H), 6.77 (d, J = 10.8 Hz, 2H), 6.31 (t, J = 7.0 Hz, 1H), 5.16 - 5.11 (m, 2H), 4.14 - 3.93 (m, 5H), 3.76 (s, 3H), 3.64 (t, J = 5.5 Hz, 2H)。
330		545.2	方法D， RT = 1.621 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.02 (d, J = 8.3 Hz, 1H), 8.65 (d, J = 2.2 Hz, 1H), 7.98 - 7.79 (m, 3H), 7.34 (t, J = 73.6 Hz, 1H), 7.28 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 5.10 (dd, J = 8.6, 11.0 Hz, 1H), 4.17 - 4.07 (m, 1H), 4.01 (br t, J = 8.8 Hz, 2H), 3.76 (s, 3H), 3.53 (s, 3H)。
331		636.1	方法D， RT = 1.555 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.12 (d, J = 8.1 Hz, 1H), 8.01 - 7.93 (m, 2H), 7.89 (d, J = 8.8 Hz, 2H), 7.34 (t, J = 72.6 Hz, 1H), 7.28 (d, J = 8.6 Hz, 2H), 6.83 - 6.75 (m, 2H), 5.14 - 5.06 (m, 2H), 4.35 - 4.19 (m, 4H), 4.13 - 3.91 (m, 3H), 3.77 (s, 3H), 3.68 - 3.47 (m, 3H)。

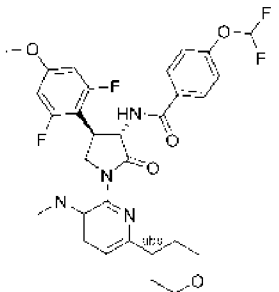
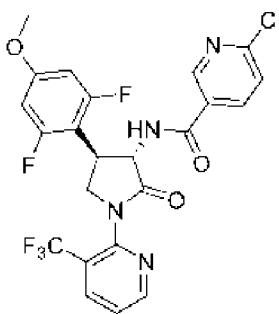
332		641.3	方法D， RT = 1.94 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.13 (d, J = 9.0 Hz, 1H), 8.07 (d, J = 8.6 Hz, 1H), 7.90 - 7.87 (d, J = 8.8 Hz, 2H), 7.35 (t, J = 73.6 Hz, 1H), 7.30 - 7.28 (m, 2H), 7.06 - 7.04 (m, 1H), 6.81 (d, J = 10.8 Hz, 2H), 5.04 (dd, J = 10.8, 8.3 Hz, 1H), 4.66 - 4.54 (m, 2H), 4.49 - 4.43 (m, 1H), 4.24 - 4.21 (m, 1H), 4.03 - 4.01 (m, 1H), 3.78 (s, 3H), 3.13 - 3.02 (m, 2H), 2.91 - 2.79 (m, 2H), 2.48 (s, 3H) 1.39 - 1.30 (m, 6H)。
333		606.2	方法C， RT = 1.88 min， 90.3%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.09 (br d, J = 8.1 Hz, 1H), 8.50 - 8.37 (m, 1H), 7.91 - 7.72 (m, 2H), 7.56 (d, J = 8.6 Hz, 2H), 7.47 (t, J = 64.2 Hz, 1H), 7.19 (br d, J = 5.6 Hz, 1H), 6.78 (br d, J = 10.8 Hz, 2H), 5.17 - 5.04 (m, 1H), 4.42 - 4.10 (m, 2H), 3.88 - 3.78 (m, 1H), 3.77 (s, 3H), 3.47 - 3.36 (m, 2H), 3.21 - 3.09 (m, 2H), 2.47 - 2.34 (m, 4H), 2.22 (s, 3H)。

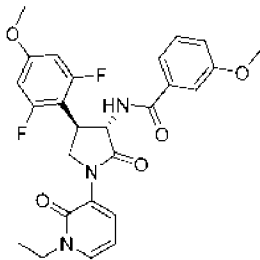
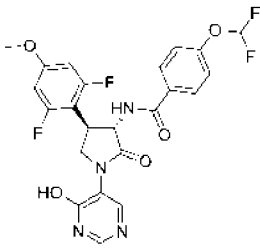
334		636.2	方法D， RT = 1.72 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.12 (d, J = 8.8 Hz, 1H), 8.18 - 8.07 (m, 1H), 7.85 (br d, J = 7.6 Hz, 2H), 7.57 (d, J = 8.6 Hz, 2H), 7.02 - 6.84 (m, 1H), 6.79 (d, J = 10.8 Hz, 2H), 5.15 - 5.04 (m, 1H), 4.46 (br s, 1H), 4.39 - 4.26 (m, 1H), 4.21 - 4.06 (m, 1H), 3.88 - 3.75 (m, 1H), 3.71 (s, 3H), 3.62 - 3.53 (m, 1H), 3.26 - 3.21 (m, 2H), 3.49 - 3.41 (m, 1H), 2.81 - 2.73 (m, 1H), 2.25 (s, 3H), 1.98 - 1.87 (m, 1H), 1.83 - 1.66 (m, 1H)。
335		485.2	方法D， RT = 2.003 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.01 (d, J = 8.8 Hz, 1H), 8.00 - 7.89 (m, 2H), 7.48 (d, J = 8.3 Hz, 2H), 6.76 (d, J = 10.8 Hz, 2H), 4.92 (dd, J = 10.4, 8.7 Hz, 1H), 3.93 - 3.89(m, 1H), 3.76 (s,3H), 3.75 - 3.68 (m, 1H), 3.66 - 3.54 (m, 1H), 3.29 - 3.24 (m, 1H), 3.06 (dd, J = 13.9, 7.1 Hz, 1H), 1.01 - 0.89 (m, 1H), 0.50 (d, J = 8.1 Hz, 2H), 0.29 - 0.11 (m, 2H)。

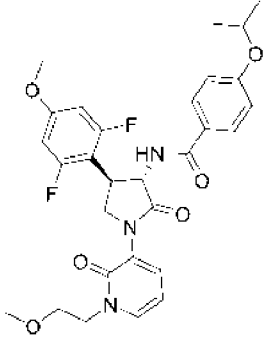
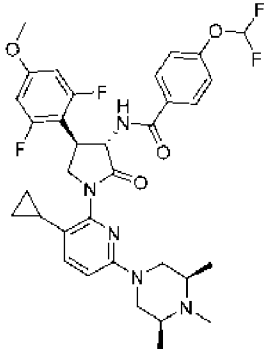
336		578.2	方法D， RT = 1.709 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.01 (d, J = 8.6 Hz, 1H), 7.94 - 7.81 (m, 2H), 7.34 (t, J = 76 Hz, 1H), 7.48 - 7.25 (m, 3H), 6.77 (d, J = 10.5 Hz, 2H), 6.26 - 6.17 (m, 1H), 5.12 (dd, J = 11.1, 8.7 Hz, 1H), 4.17 (t, J = 5.5 Hz, 2H), 4.13 - 4.01 (m, 1H), 3.94 (br d, J = 9.8 Hz, 2H), 3.76 (s, 3H), 3.59 (t, J = 5.6 Hz, 2H), 3.24 (s, 3H), 2.44 (s, 3H)。
337		556.2	方法D， RT = 1.832 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.22 - 8.90 (m, 1H), 8.13 - 7.98 (m, 1H), 7.91 - 7.72 (m, 2H), 7.61 - 7.45 (m, 2H), 6.77 (dd, J = 2.1, 10.6 Hz, 2H), 6.62 - 6.48 (m, 1H), 5.33 - 5.12 (m, 1H), 4.27 - 4.07 (m, 1H), 4.03 - 3.89 (m, 2H), 3.75 (s, 3H), 3.59 - 3.54 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)

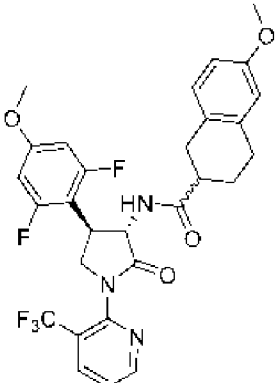
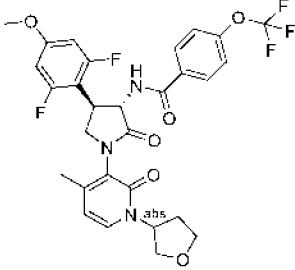
338		459.1	方法D， RT = 1.65 min，96%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.19 (d, J = 8.1 Hz, 1H), 9.08 (dd, J = 4.6, 1.5 Hz, 1H), 8.59 (dd, J = 9.0, 1.5 Hz, 1H), 7.91 - 7.74 (m, 3H), 7.64 - 7.51 (m, 2H), 6.81 (d, J = 10.8 Hz, 2H), 5.07 (dd, J = 10.8, 8.2 Hz, 1H), 4.59 (t, J = 9.0 Hz, 1H), 4.27 - 4.05 (m, 2H), 3.78 (s, 3H)。
339		564.2	方法D， RT = 1.961 min， 98.7%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.21 - 8.98 (m, 1H), 8.05 - 7.89 (m, 2H), 7.56 (dd, J = 7.0, 4.3 Hz, 1H), 7.54 - 7.42 (m, 5H), 7.42 - 7.32 (m, 1H), 6.23 - 6.19 (m, 1H), 5.31 - 5.28 (m, 1H), 4.17 - 3.85 (m, 5H), 3.73 - 3.52 (m, 2H), 3.24 (s, 3H), 2.22 - 2.09 (2s, 3H)。
340		546.2	方法D， RT = 1.776 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.03 - 8.88 (m, 1H), 7.95 - 7.90 (m, 2H), 7.60 - 7.48 (m, 2H), 7.45 - 7.16 (m, 5H), 6.24 - 6.14 (m, 1H), 5.27 - 4.67 (m, 1H), 4.06 (br s, 3H), 3.96 - 3.89 (m, 2H), 3.72 - 3.70 (m, 2H), 3.24 (s, 3H), 2.22 - 2.09 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)

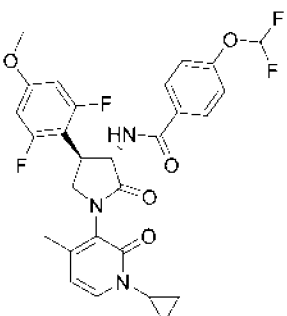
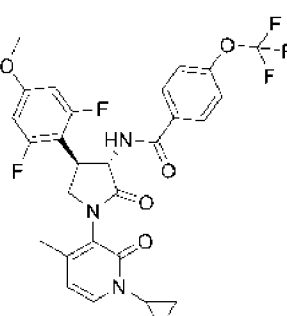
341		500.1	方法D， RT = 1.91 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.27 - 9.17 (m, 1H), 7.93 - 7.78 (m, 4H), 7.73 - 7.63 (m, 1H), 7.62 - 7.53 (m, 2H), 6.81 (d, J = 10.8 Hz, 2H), 5.26 - 5.06 (m, 1H), 4.34 - 4.24 (m, 1H), 4.13 - 4.04 (m, 1H), 4.00 - 3.90 (m, 1H), 3.78 (s, 3H)。
342		528.2	方法D， RT = 1.468 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.82 (d, J = 8.8 Hz, 1H), 7.88 - 7.75 (m, 2H), 7.66 (dd, J = 6.8, 2.0 Hz, 1H), 7.59 (dd, J = 7.3, 2.0 Hz, 1H), 7.08 - 6.93 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.32 (t, J = 7.0 Hz, 1H), 5.11 (dd, J = 11.0, 8.8 Hz, 1H), 4.22 - 4.01 (m, 3H), 4.01 - 3.88 (m, 2H), 3.81 (s, 3H), 3.76 (s, 3H), 3.60 (t, J = 5.3 Hz, 2H), 3.25 (s, 3H)。

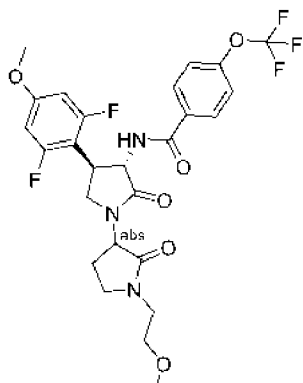
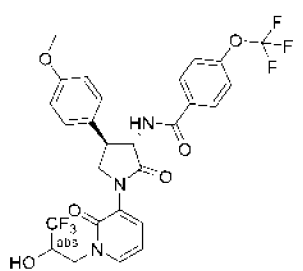
343		617.2	方法D， RT = 1.65 min，96%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.05 (d, J = 8.6 Hz, 1H), 7.89 (d, J = 8.8 Hz, 2H), 7.45-7.43 (m, 1H), 7.44 (d, J = 8.2 Hz, 1H), 7.35 (t, J = 73.6 Hz, 1H), 7.28 - 7.16 (m, 2H), 6.78 (d, J = 10.8 Hz, 2H), 5.19 (dd, J = 11.4, 8.9 Hz, 1H), 4.28 - 4.15 (m, 1H), 4.13 - 4.03 (m, 1H), 4.01 - 3.90 (m, 3H), 3.76 (s, 3H), 3.43 - 3.39 (m, 2H), 2.85 - 2.84 (m, 1H), 2.75 (s, 6H), 1.80 - 1.63 (m, 4H)。
344		527.1	方法C， RT = 1.67 min，94.1%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.36 (d, J = 8.6 Hz, 1H), 8.90 (dd, J = 4.8, 1.3 Hz, 1H), 8.84 - 8.78 (m, 1H), 8.40 (dd, J = 7.9, 1.3 Hz, 1H), 8.22 (dd, J = 8.3, 2.4 Hz, 1H), 7.80 - 7.61 (m, 2H), 6.90 - 6.71 (m, 2H), 5.15 (dd, J = 11.0, 8.6 Hz, 1H), 4.29- 4.21 (m, 1H), 4.17 - 4.14 (m, 1H), 4.01 - 3.99 (m, 1H), 3.78 (s, 3H)。

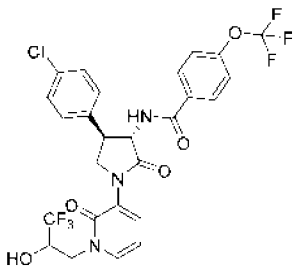
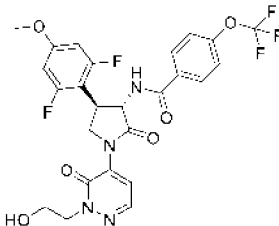
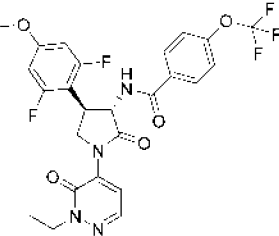
345		498.2	方法D， RT = 1.502 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.96 (d, J = 8.6 Hz, 1H), 7.76 (dd, J = 6.8, 1.5 Hz, 1H), 7.58 (dd, J = 7.3, 1.5 Hz, 1H), 7.48 - 7.30 (m, 3H), 7.19 - 7.03 (m, 1H), 6.77 (d, J = 10.8 Hz, 2H), 6.35 (t, J = 7.0 Hz, 1H), 5.12 (dd, J = 10.8, 9.0 Hz, 1H), 4.19 - 4.04 (m, 1H), 4.04 - 3.89 (m, 4H), 3.79 (s, 3H), 3.77 (s, 3H), 1.25 (t, J = 7.1 Hz, 3H)。
346		507.1	方法D， RT = 1.41 min，95%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 13.11 - 12.82 (m, 1H), 9.08 - 8.96 (m, 1H), 8.30 - 8.01 (m, 2H), 7.97 - 7.81 (m, 2H), 7.35 (t, J = 70 Hz, 1H), 7.31 - 7.26 (m, 2H), 6.78 (d, J = 11.0 Hz, 2H), 5.15-5.11 (m, 1H), 4.15 - 3.89 (m, 3H), 3.77 (s, 3H)。

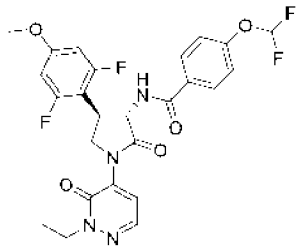
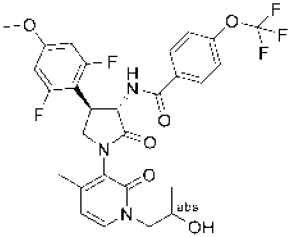
347		556.3	方法D， RT = 1.639 min，98%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.79 (d, J = 8.6 Hz, 1H), 7.84 - 7.72 (m, 2H), 7.65 (dd, J = 6.8, 2.0 Hz, 1H), 7.58 (dd, J = 7.3, 2.0 Hz, 1H), 7.04 - 6.90 (m, 2H), 6.76 (d, J = 10.5 Hz, 2H), 6.32 (t, J = 7.0 Hz, 1H), 5.10 (dd, J = 11.0, 8.6 Hz, 1H), 4.70 (m, 1H), 4.21 - 4.03 (m, 3H), 4.02 - 3.89 (m, 2H), 3.76 (s, 3H), 3.60 (t, J = 5.3 Hz, 2H), 3.25 (s, 3H), 1.27 (d, J = 5.9 Hz, 6H)。
348		656.3	方法C， RT = 1.66 min， 95.3%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.04 (d, J = 8.4 Hz, 1H), 7.89 - 7.87 (m, 2H), 7.42 (d, J = 8.4 Hz, 1H), 7.35 (t, J = 73.6 Hz, 1H), 7.28 (d, J = 8.2 Hz, 2H), 6.95 - 6.92 (m, 1H), 6.80 (d, J = 10.8 Hz, 2H), 5.11 (dd, J = 10.8, 8.6 Hz, 1H), 4.46 - 4.35 (m, 3H), 4.26 - 4.05 (m, 2H), 4.01 - 3.92 (m, 1H), 3.77 (s, 3H), 3.08 - 2.71 (m, 6H), 1.97 - 1.87 (m, 1H), 1.36 (d, J = 6.8 Hz, 6 H), 0.96 - 0.76 (m, 2H), 0.62 - 0.43 (m, 2H)。

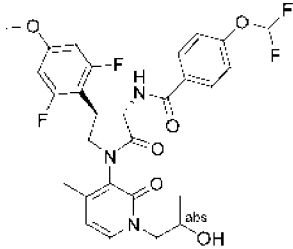
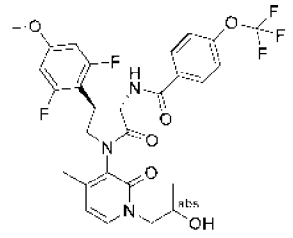
349		576.3	方法D， RT = 1.95 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.89 - 8.82 (m, 1H), 8.50 (t, J = 7.9 Hz, 1H), 8.38 (d, J = 8.1 Hz, 1H), 7.73 - 7.70 (m, 1H), 6.94 - 6.84 (m, 1H), 6.84 - 6.80 (m, 2H), 6.67 - 6.59 (m, 2H), 4.98 - 4.81 (m, 1H), 4.18 - 4.02 (m, 2H), 4.01 - 3.89 (m, 1H), 3.78 (s, 3H), 3.69 (s, 3H), 2.78 - 2.56 (m, 4H), 2.51 - 2.54 (m, 1H), 1.93 - 1.77 (m, 1H), 1.66 - 1.48 (m, 1H)。
350		608.3	方法F， RT = 1.84 min，98%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.23 - 9.01 (m, 1H), 8.01 - 7.85 (m, 2H), 7.60 - 7.51 (m, 1H), 7.51 - 7.38 (m, 2H), 6.79-6.75 (m, 2H), 6.36 - 6.21 (m, 1H), 5.43 - 4.87 (m, 2H), 4.31 - 4.00 (m, 3H), 3.90 - 3.81 (m, 2H), 3.81 - 3.69 (m, 4H), 3.54 - 3.48 (m, 1H), 2.47 - 2.39 (m, 1H), 2.22 - 2.04 (2s, 3H), 2.00 - 1.86 (m, 1H)。(可互相轉化之阻轉異構物之混合物)

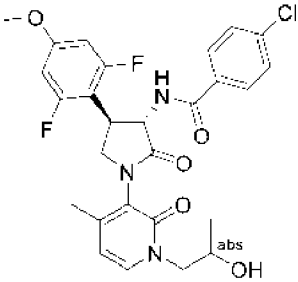
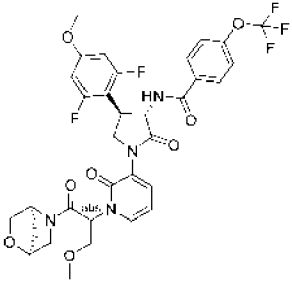
351		560.2	方法D， RT = 1.7 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.17 - 8.82 (m, 1H), 8.01 - 7.81 (m, 2H), 7.59 - 7.09 (m, 4H), 6.86 - 6.77 (m, 2H), 6.26 - 6.07 (m, 1H), 5.38 - 4.82 (m, 2H), 4.32 - 4.05 (m, 2H), 3.79 - 3.74 (2s, 3H), 3.51 - 3.46 (m, 1H), 2.22 - 2.00 (2s, 3H), 1.07 - 0.92 (m, 2H), 0.92 - 0.72 (m, 2H)。 (可互相轉化之阻轉異構物之混合物)
352		578.2	方法D， RT = 1.87 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.26 - 8.88 (m, 1H), 8.03 - 7.83 (m, 2H), 7.58 - 7.35 (m, 3H), 6.81 - 6.73 (m, 2H), 6.25 - 6.08 (m, 1H), 5.35 - 4.85 (m, 2H), 4.27 - 4.05 (m, 2H), 3.78 - 3.74 (2s, 3H), 3.54 - 3.47 (m, 1H), 2.22 - 1.99 (2s, 3H), 1.06 - 0.92 (m, 2H), 0.92 - 0.70 (m, 2H)。 (可互相轉化之阻轉異構物之混合物)

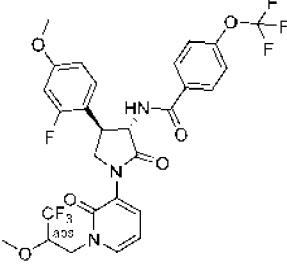
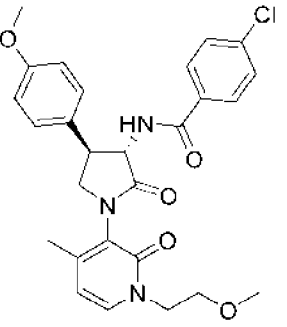
353		572.2	方法D， RT = 1.732 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.03 (d, J = 8.3 Hz, 1H), 7.92 (d, J = 8.6 Hz, 2H), 7.47 (d, J = 8.6 Hz, 2H), 6.75 (d, J = 10.8 Hz, 2H), 4.96 (dd, J = 10.8, 8.8 Hz, 1H), 4.84 (t, J = 9.3 Hz, 1H), 3.97 - 3.89 (m, 1H), 3.75 (s, 3H), 3.67 - 3.61 (m, 1H), 3.46 - 3.39 (m, 7H), 3.22 (s, 3H), 2.28 - 2.19 (m, 1H), 2.13 - 2.04 (m, 1H)。
354		600.2	方法D， RT = 1.813 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.03 (d, J = 8.6 Hz, 1H), 8.03 - 7.90 (m, 2H), 7.66 (m, 2H), 7.47 (d, J = 8.3 Hz, 2H), 7.35 (d, J = 8.6 Hz, 2H), 6.91 (d, J = 8.6 Hz, 2H), 6.37 (t, J = 7.0 Hz, 1H), 5.05 - 4.94 (m, 1H), 4.44 (dd, J = 13.2, 2.7 Hz, 1H), 4.38 - 4.29 (m, 1H), 4.14 - 4.04 (m, 1H), 3.92 - 3.74 (m, 3H), 3.72 (s, 3H), 3.34 - 3.30 (m, 1H)。

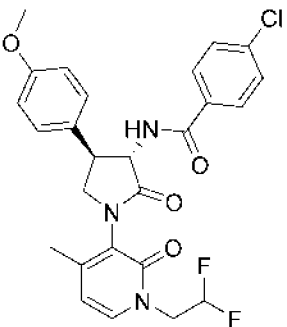
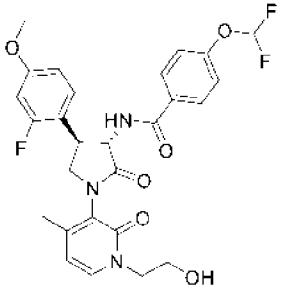
355		604.2	方法D， RT = 2.015 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.07 (br d, J = 8.6 Hz, 1H), 8.04 - 7.90 (m, 2H), 7.73 - 7.57 (m, 2H), 7.51 - 4.45 (m, 4H), 7.44 - 7.32 (m, 2H), 6.81 - 6.73 (brs, 1H), 6.41 - 6.31 (m, 1H), 5.08 - 5.01 (m, 1H), 4.48 - 4.42 (m, 1H), 4.37 - 4.30 (m, 1H), 4.14 - 4.04 (m, 1H), 3.90 - 3.79 (m, 3H)。
356		569.2	方法D， RT = 1.69 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.14 (br d, J = 8.1 Hz, 1H), 8.00 (d, J = 4.6 Hz, 1H), 7.94 (d, J = 9.0 Hz, 2H), 7.69 (d, J = 4.6 Hz, 1H), 7.49 (d, J = 8.3 Hz, 2H), 6.78 (d, J = 10.8 Hz, 2H), 5.07 - 5.05 (m, 1H), 4.84 (t, J = 5.9 Hz, 1H), 4.36 - 4.27 (m, 1H), 4.22 - 4.01 (m, 4H), 3.77 (s, 3H), 3.73 (ABq, J = 5.9 Hz, 2H)。
357		553.2	方法D， RT = 1.95 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.13 (d, J = 8.1 Hz, 1H), 8.01 (d, J = 4.6 Hz, 1H), 7.99 - 7.82 (m, 2H), 7.70 (d, J = 4.4 Hz, 1H), 7.49 (d, J = 8.1 Hz, 2H), 6.78 (d, J = 10.8 Hz, 2H), 5.01 - 5.05 (m, 1H), 4.42 - 4.27 (m, 1H), 4.25 - 4.05 (m, 4H), 3.77 (s, 3H), 1.28 (t, J = 7.2 Hz, 3H)。

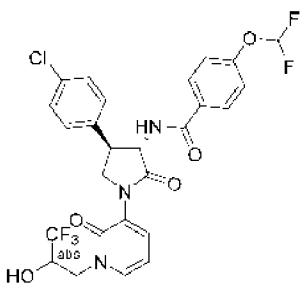
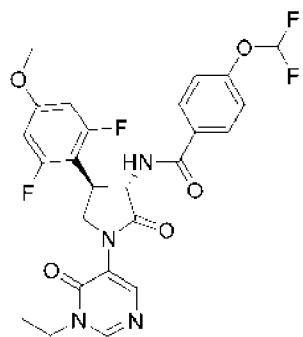
358		535.3	方法D， RT = 1.77 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.02 (d, J = 8.3 Hz, 1H), 8.01 (d, J = 4.4 Hz, 1H), 7.88 (d, J = 8.8 Hz, 2H), 7.70 (d, J = 4.4 Hz, 1H), 7.34 (t, J = 73.6 Hz, 1H), 7.28 - 7.26 (m, 2H), 6.78 (d, J = 10.8 Hz, 2H), 5.05 (dd, J = 10.8, 8.6 Hz, 1H), 4.37 - 4.26 (m, 1H), 4.23 - 4.05 (m, 4H), 3.77 (s, 3H), 1.28 (t, J = 7.1 Hz, 3H)。
359		596.2	方法D， RT = 1.75 min，98 %	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.28 - 8.97 (m, 1H), 8.07 - 7.82 (m, 2H), 7.61 - 7.34 (m, 3H), 6.79 - 6.75 (m, 2H), 6.28 - 6.09 (m, 1H), 5.41 - 4.80 (m, 2H), 4.31 - 3.97 (m, 3H), 3.95 - 3.85 (m, 1H), 3.82 - 3.73 (2s, 3H), 3.63 - 3.45 (m, 2H), 2.23 - 2.01 (2s, 3H), 1.09 (d, J = 6.4 Hz, 3H)。(可互相轉化之阻轉異構物之混合物)

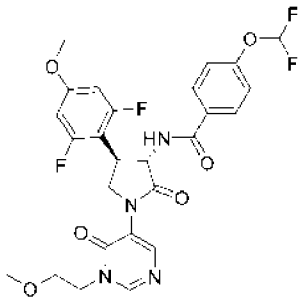
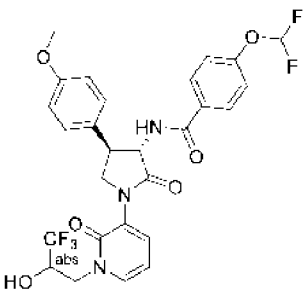
360		578.3	方法C， RT = 1.57 min，99 %	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.15 - 8.81 (m, 1H), 7.99 - 7.77 (m, 2H), 7.63 - 7.09 (m, 4H), 6.79 - 6.72 (m, 2H), 6.30 - 6.09 (m, 1H), 5.40 - 4.82 (m, 2H), 4.35 - 3.98 (m, 3H), 3.94 - 3.84 (m, 1H), 3.81 - 3.72 (2s, 3H), 3.63 - 3.45 (m, 2H), 2.23 - 2.02 (2s, 3H), 1.09 (d, J = 6.1 Hz, 3H)。(可互相轉化 之阻轉異構物之混合物)
361		596.2	方法C， RT = 1.80 min，93%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.18 - 9.05 (m, 1H), 7.97 - 7.91 (m, 2H), 7.57 - 7.46 (m, 3H), 6.77 - 6.73 (m, 2H), 6.30 - 6.17 (m, 1H), 5.40 - 4.88 (m, 2H), 4.35 - 3.98 (m, 3H), 3.94 - 3.84 (m, 1H), 3.81 - 3.72 (2s, 3H), 3.63 - 3.45 (m, 2H), 2.19 - 2.02 (2s, 3H), 1.11 - 1.06 (m, 3H)。(可互相轉化之阻轉 異構物之混合物)

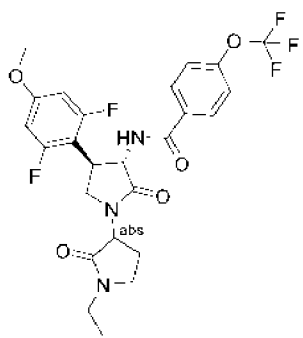
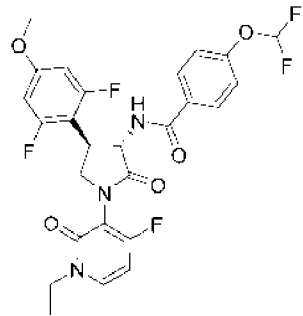
362		546.2	方法D， RT = 1.61 min，97 %	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.20 - 8.90 (m, 1H), 7.91 - 7.74 (m, 2H), 7.64 - 7.36 (m, 3H), 6.82 - 6.64 (m, 2H), 6.27 - 6.07 (m, 1H), 5.36 - 4.81 (m, 2H), 4.28 - 3.82 (m, 4H), 3.80 - 3.73 (2s, 3H), 3.69 - 3.46 (m, 2H), 2.23 - 2.04 (2s, 3H), 1.09 - 1.06 (m, 3H)。(可互相轉化之阻轉異構物之混合物)
363		707.3	方法D， RT = 1.78 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.11 (d, J = 8.8 Hz, 1H), 7.94 (d, J = 8.3 Hz, 2H), 7.78 - 3.73 (m, 1H), 7.67 - 7.57 (m, 1H), 7.52 - 7.41 (m, 2H), 6.76 (d, J = 10.8 Hz, 2H), 6.41 (t, J = 7.2 Hz, 1H), 6.05 - 5.64 (m, 1H), 5.16 - 5.00 (m, 1H), 4.74 - 4.54 (m, 2H), 4.15 - 3.78 (m, 6H), 3.76 (s, 3H), 3.68 - 3.51 (m, 3H), 3.27 (s, 3H), 1.90 - 1.69 (m, 2H)。

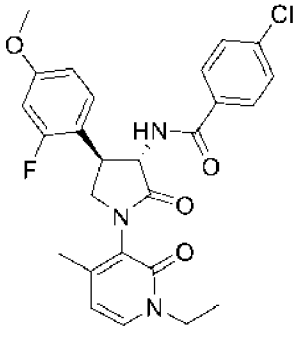
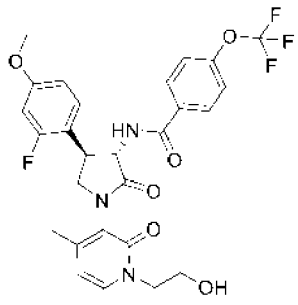
364		632.2	方法D， RT = 2.06 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.07 (d, J = 8.8 Hz, 1H), 7.97 (d, J = 8.8 Hz, 2H), 7.74 - 7.63 (m, 2H), 7.54 - 7.41 (m, 3H), 6.87 - 6.73 (m, 2H), 6.39 (t, J = 7.0 Hz, 1H), 5.13 (dd, J = 11.1, 9.2 Hz, 1H), 4.41 (dd, J = 13.0, 3.4 Hz, 1H), 4.35 - 4.26 (m, 1H), 4.16 - 4.08 (m, 1H), 4.06 - 3.95 (m, 1H), 3.78 - 3.72 (m, 4H) 3.77 - 3.69 (m, 1H), 3.36 (s, 3H)。
365		510.2	方法D， RT = 1.588 min，89%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.02 - 8.97 (m, 1H), 7.92 - 8.86 (m, 2H), 7.60 - 7.49 (m, 3H), 7.43 - 7.24 (m, 2H), 6.97 - 6.80 (m, 2H), 6.22 - 6.18 (m, 1H), 5.27 - 4.64 (m, 1H), 4.18 - 3.96 (m, 3H), 3.93 - 3.80 (m, 2H), 3.75 - 3.70 (2s, 3H), 3.66 - 3.53 (m, 2H), 3.24 (s, 3H), 2.21 - 2.04 (2s, 3H)。 (可互相轉化之阻轉異構物之混合物)

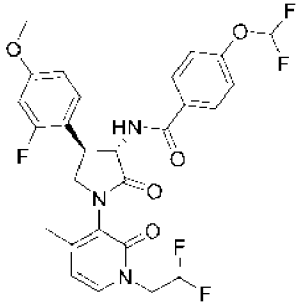
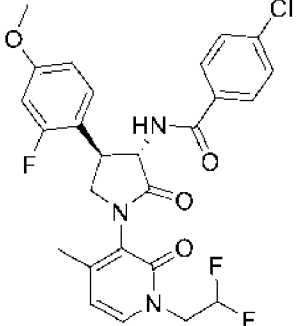
366		516.2	方法D， RT = 1.67 min， 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.03 - 8.98 (m, 1H), 7.91 - 7.76 (m, 2H), 7.65 - 7.61 (m, 1H), 7.57 - 7.51 (m, 2H), 7.44 - 7.25 (m, 2H), 6.94 - 6.98 (m, 2H), 6.48 - 6.12 (m, 2H), 5.31 - 4.61 (m, 1H), 4.51 - 4.31 (m, 2H), 4.10 - 3.78 (m, 2H), 3.74 - 3.70 (2s, 3H), 3.71 - 3.64 (m, 1H), 2.23 - 2.09 (2s, 3H)。 (可互相轉化之阻轉異構物之 混合物)
367		546.2	方法D， RT = 1.51 min， 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 8.99 - 8.94 (m, 1H), 7.99 - 7.84 (m, 2H), 7.61 - 7.52 (m, 2H), 7.37 - 7.33 (m, 1H), 7.31 - 7.22 (m, 2H), 6.90 - 6.70 (m, 2H), 6.22 - 6.17 (m, 1H), 5.41 - 4.73 (m, 1H), 4.15 - 3.87 (m, 5H), 3.74 - 3.71(2s, 3H), 3.64 - 3.54 (m, 3H), 2.25 - 2.02 (2s, 3H)。(可互相轉化之阻轉 異構物之混合物)

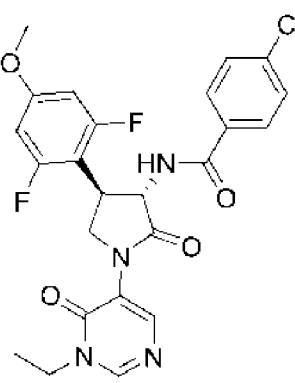
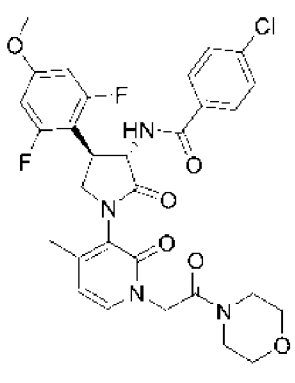
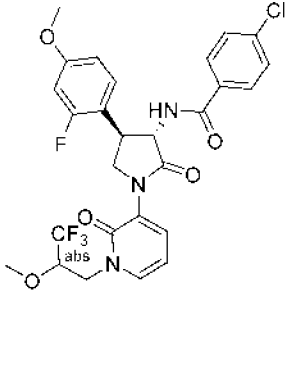
368		586.1	方法D， RT = 1.852 min， 98.6%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.95 (d, J = 8.8 Hz, 1H), 7.96 - 7.85 (m, 2H), 7.69 (dd, J = 6.8, 2.0 Hz, 1H), 7.65 (dd, J = 7.3, 2.0 Hz, 1H), 7.49 - 7.39 (m, 4H), 7.34 (t, J = 73.6 Hz, 1H), 7.28 - 7.24 (m, 2H), 6.79 - 6.70 (m, 1H), 6.37 (t, J = 7.0 Hz, 1H), 5.03 (dd, J = 11.0, 8.8 Hz, 1H), 4.45 (dd, J = 13.1, 2.8 Hz, 1H), 4.37 - 4.29 (m, 1H), 4.20 (t, J = 8.8 Hz, 1H), 3.89 - 3.79 (m, 2H), 3.75 - 3.67 (m, 1H)。
369		535.2	方法D， RT = 1.60 min， 98.7%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.01 (d, J = 8.6 Hz, 1H), 8.54 (s, 1H), 8.13 (s, 1H), 7.97 - 7.84 (m, 2H), 7.34 (t, J = 73.0 Hz, 1H), 7.28 - 7.25 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 5.12 (dd, J = 11.1, 8.7 Hz, 1H), 4.19 - 4.05 (m, 1H), 4.05 - 3.90 (m, 4H), 3.76 (s, 3H), 1.28 (t, J = 7.1 Hz, 3H)。

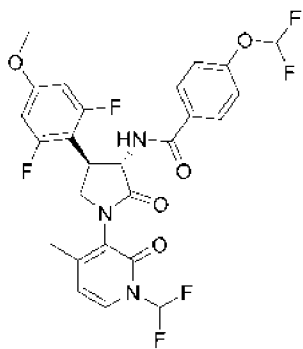
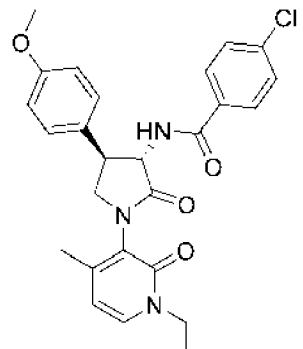
370		565.2	方法D， RT = 1.61 min， 98.7%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.01 (d, J = 8.8 Hz, 1H), 8.40 (s, 1H), 8.14 (s, 1H), 7.88 (d, J = 8.6 Hz, 2H), 7.34 (t, J = 73.0 Hz, 1H), 7.28 - 7.25 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 5.12 (dd, J = 10.9, 8.9 Hz, 1H), 4.23 - 4.03 (m, 3H), 4.03 - 3.88 (m, 2H), 3.76 (s, 3H), 3.60 (t, J = 5.1 Hz, 2H), 3.26 (s, 3H)。
371		582.2	方法D， RT = 1.644 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.93 (d, J = 8.6 Hz, 1H), 7.94 - 7.92 (m, 2H), 7.68 (dd, J = 6.7, 1.8 Hz, 1H), 7.63 (dd, J = 7.2, 1.8 Hz, 1H), 7.33 (t, J = 72.0 Hz, 1H), 7.35 - 7.10 (m, 4H), 6.97 - 6.87 (m, 2H), 6.84 - 6.61 (m, 1H), 6.37 (t, J = 7.0 Hz, 1H), 4.99 (dd, J = 10.9, 8.9 Hz, 1H), 4.44 (dd, J = 13.2, 2.9 Hz, 1H), 4.38 - 4.29 (m, 1H), 4.12 - 4.05 (m, 1H), 3.85 (dd, J = 13.1, 9.2 Hz, 1H), 3.82 - 3.73 (m, 2H), 3.72 (s, 3H)。

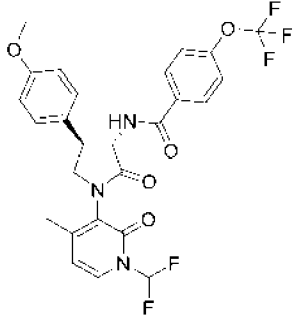
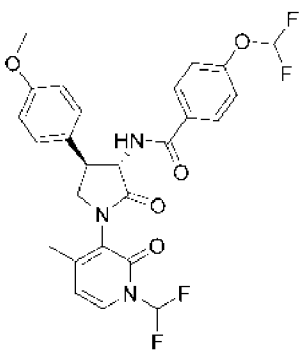
372		542.2	方法D， RT = 1.77 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.03 (d, J = 8.8 Hz, 1H), 8.00 - 7.86 (m, 2H), 7.47 (d, J = 8.1 Hz, 2H), 6.75 (d, J = 10.8 Hz, 2H), 4.97 (dd, J = 10.8, 8.6 Hz, 1H), 4.84 (t, J = 9.4 Hz, 1H), 4.01 - 3.85 (m, 1H), 3.75 (s, 3H), 3.64 (br t, J = 8.7 Hz, 1H), 3.36 (m, 3H), 3.23 (dt, J = 13.7, 6.6 Hz, 2H), 2.28 - 2.18 (m, 1H), 2.15 - 2.03 (m, 1H), 1.03 (t, J = 7.2 Hz, 3H)。
373		552.2	方法D， RT = 1.717 min， 94.7%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.09 - 9.01 (m, 1H), 8.01 - 7.85 (m, 3H), 7.53 - 7.23 (m, 3H), 6.84 - 6.72 (m, 2H), 6.50 - 6.46 (m, 1H), 5.07 - 4.99 (m, 1H), 4.27 - 4.10 (m, 1H), 4.06 - 3.92 (m, 4H), 3.79 - 3.75 (2s, 3H), 1.31 - 1.19 (m, 3H)。 (可互相轉化之阻轉異構物之混合物)

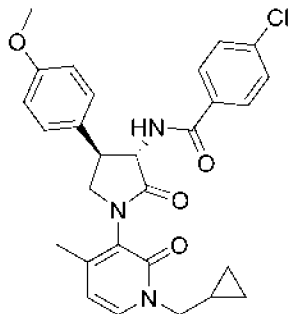
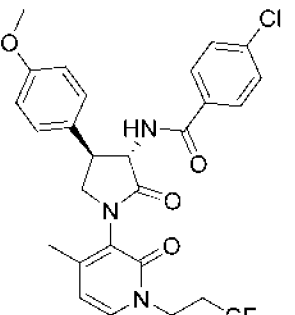
374		498.2	方法D， RT = 1.68 min， 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.05 - 9.0 (m, 1H), 7.92 - 7.79 (m, 2H), 7.68 - 7.61 (m, 1H), 7.59 - 7.35 (m, 3H), 6.89 - 6.72 (m, 2H), 6.25 - 6.20 (m, 1H), 5.41 - 4.74 (m, 1H), 4.18 - 3.85 (m, 4H), 3.76 - 3.72 (2s, 3H), 3.62 -3.36 (m, 1H), 2.22 - 2.04 (2s, 3H), 1.22 (m, 3H)。 (可互相轉化之阻轉異構物之 混合物)
375		564.2	方法D， RT = 1.61 min， 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.09 - 9.06 (m, 1H), 8.03 - 7.87 (m, 2H), 7.62 - 7.37 (m, 4H), 6.89 - 6.68 (m, 2H), 6.22 - 6.18 (m, 1H), 5.41 - 4.78 (m, 2H), 4.16 - 3.89 (m, 4H), 3.78 - 3.74 (2s, 3H), 3.64 - 3.60 (m, 3H), 2.21 - 2.03 (2s, 3H)。 (可互相轉化之阻轉異構物之 混合物)

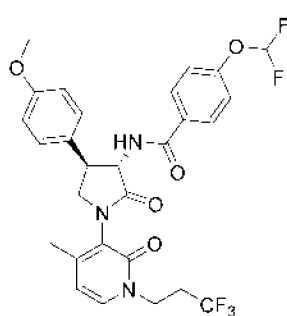
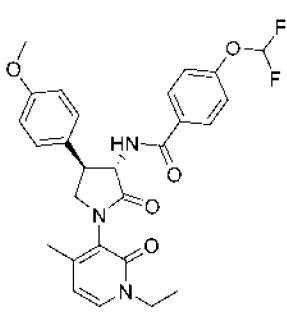
376		566.2	方法D， RT = 1.74 min， 94.2%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.02 - 8.93 (m, 1H), 7.99 - 7.83 (m, 2H), 7.69 - 7.61 (m, 1H), 7.56 - 7.45 (m, 1H), 7.51 - 7.21 (m, 3H), 6.88 - 6.69 (m, 2H), 6.36 - 6.13 (m, 2H), 5.41 - 4.74 (m, 1H), 4.50 - 4.32 (m, 2H), 4.18 - 3.89 (m, 2H), 3.74 (2s, 3H), 3.62 - 3.36 (m, 1H), 2.22 - 2.10 (2s, 3H)。 (可互相轉化之阻轉異構物之混合物)
377		534.2	方法D， RT = 1.76 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.12 - 8.96 (m, 1H), 7.99 - 7.83 (m, 2H), 7.66 - 7.61 (m, 1H), 7.59 - 7.35 (m, 3H), 6.89 - 6.71 (m, 2H), 6.51 - 6.26 (m, 2H), 5.41 - 4.74 (m, 1H), 4.50 - 4.32 (m, 2H), 4.18 - 3.89 (m, 2H), 3.74 (2s, 3H), 3.62 - 3.36 (m, 1H), 2.23 - 2.03 (2s, 3H)。 (可互相轉化之阻轉異構物之混合物)

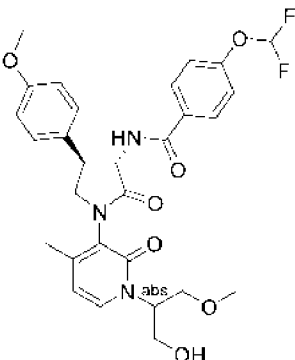
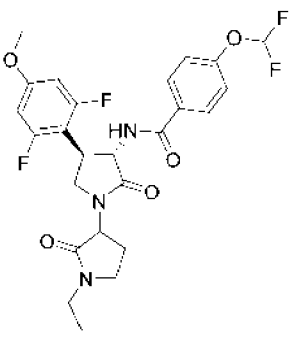
378		503.2	方法D， RT = 1.62 min， 97.9%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.07 (d, J = 8.6 Hz, 1H), 8.54 (s, 1H), 8.13 (s, 1H), 7.88 - 7.77 (m, 2H), 7.60 - 7.50 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 5.12 (dd, J = 11.0, 8.6 Hz, 1H), 4.16 - 4.05 (m, 1H), 4.03 - 3.90 (m, 4H), 3.76 (s, 3H), 1.28 (t, J = 7.1 Hz, 3H)。
379		615.2	方法F， RT = 1.63 min， 96.0%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.20 - 8.89 (m, 1H), 7.91 - 7.71 (m, 2H), 7.66 - 7.34 (m, 3H), 6.84 - 6.64 (m, 2H), 6.31 - 6.12 (m, 1H), 5.33 - 4.73 (m, 3H), 4.30 - 4.01 (m, 2H), 3.76 (s, 3H), 3.70 - 3.62 (m, 2H), 3.61 - 3.36 (m, 7H), 2.25 - 1.99 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)
380		582.2	方法D， RT = 1.92 min， 95.7%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.03 (d, J = 8.6 Hz, 1H), 7.93 - 7.78 (m, 2H), 7.72 - 7.65 (m, 2H), 7.61 - 7.43 (m, 3H), 6.89 - 6.75 (m, 2H), 6.39 (t, J = 7.1 Hz, 1H), 5.14 (dd, J = 11.2, 8.8 Hz, 1H), 4.42 (dd, J = 13.6, 3.5 Hz, 1H), 4.36 - 4.25 (m, 1H), 4.18 - 4.09 (m, 1H), 4.08 - 3.95 (m, 2H), 3.78 (s, 3H), 3.77 - 3.71 (m, 1H), 3.25 (s, 3H)。

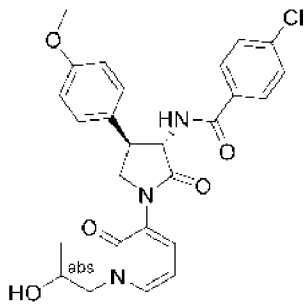
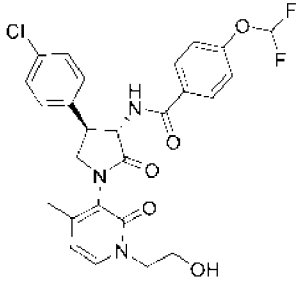
381		570.2	方法D， RT = 1.812 min，96%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.12 - 8.94 (m, 1H), 8.05 - 7.68 (m, 4H), 7.51 - 7.24 (m, 3H), 6.87 - 6.69 (m, 2H), 6.52 - 6.39 (m, 1H), 5.33 - 4.74 (m, 1H), 4.35 - 4.00 (m, 2H), 3.79 - 3.74 (2s, 3H), 3.62 - 3.51 (m, 1H), 2.28 - 2.00 (2s, 3H)。 (可互相轉化之阻轉異構物之混合物)
382		480.2	方法D， RT = 1.685 min，96%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.02 - 8.97 (m, 1H), 7.90 - 7.86 (m, 2H), 7.68 - 7.63 (m, 1H), 7.60 - 7.47 (m, 2H), 7.41 - 7.18 (m, 2H), 6.93 - 6.89 (m, 2H), 6.24 - 6.17 (m, 1H), 5.29 - 4.64 (m, 1H), 4.13 - 3.80 (m, 4H), 3.74 - 3.71 (2s, 3H), 3.47 - 3.42 (m, 1H), 2.24 - 2.02 (2s, 3H), 1.32 - 1.13 (m, 3H)。 (可互相轉化之阻轉異構物之混合物)

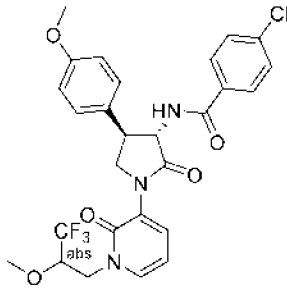
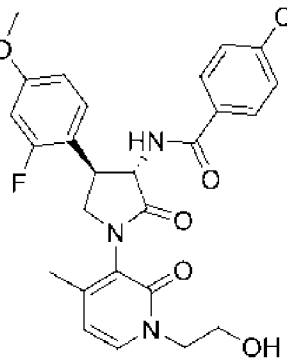
383		552.2	方法D， RT = 1.884 min，97%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.14 - 8.94 (m, 1H), 8.05 - 7.67 (m, 4H), 7.57 - 7.42 (m, 2H), 7.42 - 7.25 (m, 2H), 7.04 - 6.79 (m, 2H), 6.47 - 6.41 (m, 1H), 5.32 - 4.54 (m, 1H), 4.08 - 3.79 (m, 2H), 3.79 - 3.51 (m, 4H), 2.28 - 2.10 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)
384		534.2	方法D， RT = 1.726 min，93%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.06 - 8.82 (m, 1H), 8.08 - 7.68 (m, 4H), 7.57 - 7.06 (m, 5H), 6.97 - 6.76 (m, 2H), 6.47 - 6.42 (m, 1H), 5.31 - 4.56 (m, 1H), 4.07 - 3.78 (m, 2H), 3.76 - 3.49 (m, 4H), 2.30 - 2.10 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)

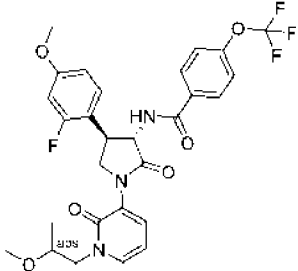
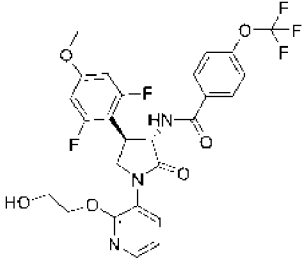
385		506.2	方法D， RT = 1.758 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.02 - 8.98 (m, 1H), 7.94 - 7.79 (m, 2H), 7.70 - 7.66 (m, 1H), 7.60 - 7.47 (m, 2H), 7.42 - 7.23 (m, 2H), 7.00 - 6.80 (m, 2H), 6.24 - 6.20 (m, 1H), 5.28 - 4.62 (m, 1H), 4.15 - 3.78 (m, 3H), 3.75 - 3.70 (m, 4H), 3.51 - 3.40 (m, 1H), 2.23 - 2.02 (2s, 3H), 1.28 - 1.08 (m, 1H), 0.55 - 0.44 (m, 2H), 0.42 - 0.30 (m, 2H)。(可互相轉化之阻轉異構物之混合物)
386		548.2	方法D， RT = 1.794 min，97%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.03 - 8.98 (m, 1H), 7.90 - 7.86 (m, 2H), 7.70 - 7.66 (m, 1H), 7.63 - 7.50 (m, 2H), 7.46 - 7.21 (m, 2H), 6.94 - 6.88 (m, 2H), 6.28 - 6.23 (m, 1H), 5.32 - 4.58 (m, 1H), 4.27 - 3.77 (m, 4H), 3.74 - 3.70 (2s, 3H), 3.48 - 3.46 (m, 1H), 2.85 - 2.66 (m, 2H), 2.24 - 2.02 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)

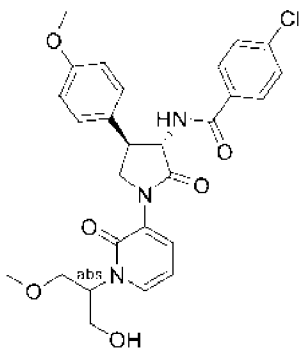
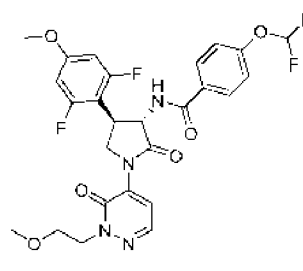
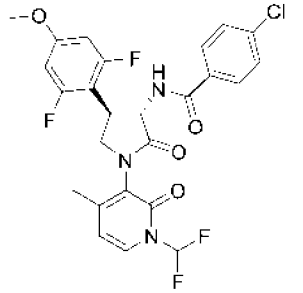
387		580.2	方法D， RT = 1.766 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.96 - 8.92 (m, 1H), 7.95 - 7.91 (m, 2H), 7.70 - 7.65 (m, 1H), 7.55 - 7.07 (m, 5H), 6.93 - 6.87 (m, 2H), 6.28 - 6.23 (m, 1H), 5.30 - 4.64 (m, 1H), 4.29 - 3.78 (m, 4H), 3.74 - 3.70 (2s, 3H) 3.48 - 3.46 (m, 1H), 2.86 - 2.64 (m, 2H), 2.23 - 2.06 (2s, 3H)。 (可互相轉化之阻轉異構物之混合物)
388		512.3	方法D， RT = 1.572 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.96 - 8.92 (m, 1H), 8.00 - 7.88 (m, 2H), 7.67 - 7.62 (m, 1H), 7.55 - 7.05 (m, 5H), 6.93 - 6.88 (m, 2H), 6.24 - 6.18 (m, 1H), 5.32 - 4.63 (m, 1H), 4.14 - 3.77 (m, 4H), 3.74 - 3.70 (2s, 3H), 3.47 - 3.42 (m, 1H), 2.25 - 2.04 (2s, 3H), 1.25- 1.19 (m, 3H)。 (可互相轉化之阻轉異構物之混合物)

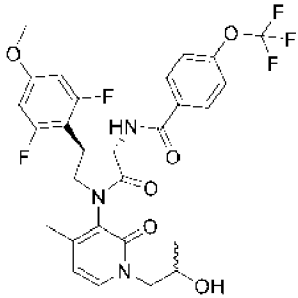
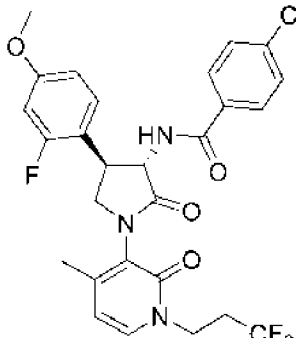
389		572.3	方法D， RT = 1.517 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.00 - 8.88 (m, 1H), 7.96 - 7.90 (m, 2H), 7.62 - 7.56 (m, 1H), 7.53 - 7.12 (m, 5H), 6.93 - 6.95 (m, 2H), 6.26 - 6.18 (m, 1H), 5.27 - 5.16 (m, 1H), 5.10 - 4.94 (m, 2H), 4.75 - 4.65 (m, 1H), 4.14 - 4.05 (m, 1H), 3.95 - 3.82 (m, 2H), 3.77 - 3.57 (m, 6H), 3.24 - 3.20 (2s, 3H), 2.20 - 2.08 (2s, 3H)。(阻轉及非鏡像異構物之混合物)
390		524.2	方法D， RT = 1.603 min，98%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.92 (d, J = 8.6 Hz, 1H), 7.91 - 7.75 (m, 2H), 7.33 (t, J = 73.6 Hz, 1H), 7.27 - 7.24 (m, 2H), 6.74 (d, J = 10.8 Hz, 2H), 4.96 (dd, J = 10.9, 8.9 Hz, 1H), 4.84 (t, J = 9.4 Hz, 1H), 3.97 - 3.86 (m, 1H), 3.75 (s, 3H), 3.64 (br t, J = 8.7 Hz, 1H), 3.37 - 3.31 (m, 3H), 3.26 - 3.20 (m, 2H), 2.26 - 2.17 (m, 1H), 2.13 - 2.03 (m, 1H), 1.03 (t, J = 7.2 Hz, 3H)。

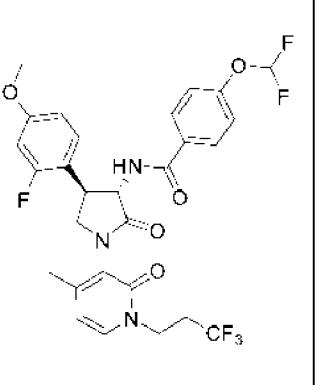
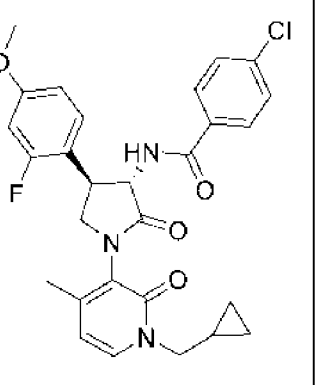
391		496.1	方法D， RT = 1.467 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.98 (d, J = 8.6 Hz, 1H), 7.92 - 7.81 (m, 2H), 7.64 - 7.49 (m, 4H), 7.38 - 7.27 (m, 2H), 6.90 (d, J = 8.6 Hz, 2H), 6.30 (t, J = 7.0 Hz, 1H), 5.05 - 4.96 (m, 1H), 4.96 - 4.88 (m, 1H), 4.12 - 4.04 (m, 2H), 3.96 - 3.90 (m, 1H), 3.79 - 3.70 (m, 2H), 3.72 (s, 3H), 3.70 - 3.61 (m, 1H), 1.08 (d, J = 6.1 Hz, 3H)。
392		532.2	方法D， RT = 1.606 min， 97.2%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.02 - 8.95 (m, 1H), 7.98 - 7.90 (m, 2H), 7.58 - 7.49 (m, 2H), 7.46 - 7.15 (m, 6H), 6.23 - 6.18 (m, 1H), 5.33 - 4.97 (m, 1H), 5.05 - 4.97 (m, 1H), 4.94 - 4.90 (m, 1H), 4.06 - 3.86 (m, 4H), 3.67 - 3.58 (m, 2H), 2.22 - 2.10 (2s, 3H)。 (可互相轉化之阻轉異構物之混合物)

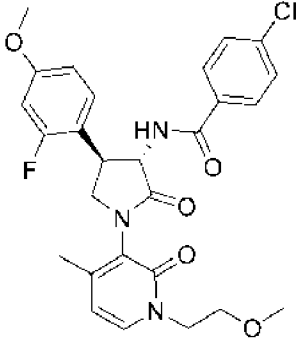
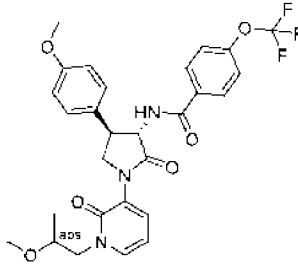
393		564.2	方法D， RT = 1.848 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.98 (d, J = 9.3 Hz, 1H), 7.89 - 7.81 (m, 2H), 7.73 - 7.63 (m, 2H), 7.59 - 7.51 (m, 2H), 7.34 (d, J = 8.6 Hz, 2H), 6.90 (d, J = 8.6 Hz, 2H), 6.38 (t, J = 7.0 Hz, 1H), 5.05 - 4.98 (m, 1H), 4.44 - 4.37 (m, 1H), 4.32 - 4.26 (m, 1H), 4.13 - 4.02 (m, 3H), 3.80 - 3.74 (m, 1H), 3.72 (s, 3H), 3.36 (s, 3H)。
394		514.2	方法D， RT = 1.52 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.05 - 8.98 (m, 1H), 7.88 - 7.75 (m, 2H), 7.59 - 7.43 (m, 4H), 6.86 - 6.74 (m, 2H), 6.21 - 6.18 (m, 1H), 5.42 - 4.74 (m, 2H), 4.15 - 3.92 (m, 4H), 3.76 - 3.72 (2s, 3H), 3.66 - 3.56 (m, 3H), 2.22 - 2.05 (2s, 3H)。 (可互相轉化之阻轉異構物之混合物)

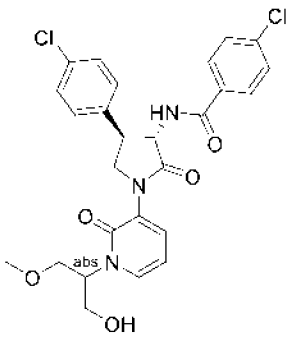
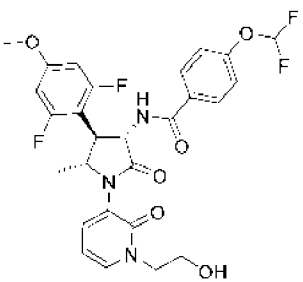
395		578.2	方法D， RT = 1.85 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.05 (d, J = 8.3 Hz, 1H), 7.96 (d, J = 8.8 Hz, 2H), 7.63 - 7.56 (m, 2H), 7.53 - 7.43 (m, 3H), 6.85 - 6.76 (m, 2H), 6.32 (t, J = 7.0 Hz, 1H), 5.15 - 5.10 (m, 1H), 4.13 - 3.93 (m, 3H), 3.91 (br d, J = 7.1 Hz, 2H), 3.76 (s, 3H), 3.74 - 3.64 (m, 1H), 3.25 (s, 3H), 1.08 (d, J = 6.1 Hz, 3H)。
396		568.2	方法D， RT = 1.84 min， 94.9%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.14 (d, J = 8.6 Hz, 1H), 8.13 (dd, J = 4.9, 2.0 Hz, 1H), 7.98 - 7.90 (m, 2H), 7.79 (dd, J = 7.6, 1.7 Hz, 1H), 7.49 (d, J = 8.6 Hz, 2H), 7.09 (dd, J = 7.6, 4.9 Hz, 1H), 6.78 (d, J = 10.8 Hz, 2H), 5.08 (dd, J = 10.9, 8.4 Hz, 1H), 4.74 (t, J = 5.5 Hz, 1H), 4.38 (td, J = 5.5, 2.6 Hz, 2H), 4.15 (q, J = 9.8 Hz, 1H), 4.05 - 4.96 (m, 2H), 3.76 (s, 3H), 3.75 - 3.69 (m, 2H)。

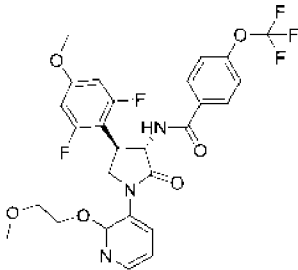
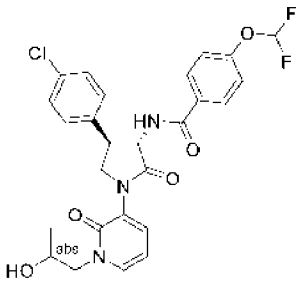
397		526.2	方法D， RT = 1.471 min，91%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.01 - 8.94 (m, 1H), 7.91 - 7.83 (m, 2H), 7.68 (dd, J = 6.8, 2.0 Hz, 1H), 7.58 - 7.49 (m, 3H), 7.34 (d, J = 8.6 Hz, 2H), 6.90 (d, J = 8.6 Hz, 2H), 6.33 (t, J = 7.1 Hz, 1H), 5.11 - 4.97 (m, 3H), 4.13 - 4.10 (m, 1H), 3.78 - 3.65 (m, 8H), 3.65 - 3.60 (m, 1H), 3.23 (s, 3H)。
398		565.2	方法D， RT = 1.73 min，97 %	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.02 (d, J = 8.3 Hz, 1H), 8.01 (d, J = 4.6 Hz, 1H), 7.90 - 7.80 (m, 2H), 7.69 (d, J = 4.6 Hz, 1H), 7.34 (t, J = 73.6 Hz, 1H), 7.28 - 7.26 (m, 2H), 6.78 (d, J = 10.8 Hz, 2H), 5.05 (dd, J = 10.9, 8.4 Hz, 1H), 4.37 - 4.22 (m, 3H), 4.21 - 4.05 (m, 2H), 3.77 (s, 3H), 3.70 (t, J = 5.5 Hz, 2H), 3.24 (s, 3H)。
399		538.1	方法D， RT = 1.88 min，94 %	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.15 - 9.04 (m, 1H), 8.07 - 7.68 (m, 4H), 7.64 - 7.45 (m, 2H), 6.87 - 6.65 (m, 2H), 6.51 - 6.36 (m, 1H), 5.36 - 4.78 (m, 1H), 4.35 - 3.99 (m, 2H), 3.83 - 3.73 (2s, 3H), 3.66 - 3.52 (m, 1H), 2.29 - 2.05 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)

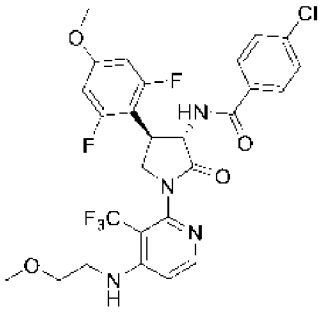
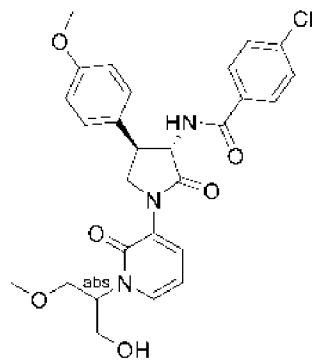
400		596.3	方法D， RT = 1.721 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.24 - 8.92 (m, 1H), 7.99 - 7.86 (m, 1H), 7.96 -7.91 (m, 1H), 7.60 - 7.42 (m, 3H), 6.83 - 6.69 (m, 2H), 6.26 - 6.16 (m, 1H), 5.00 - 4.84 (m, 2H), 4.30 - 3.96 (m, 4H), 3.80 - 3.74 (2s, 3H), 3.62 - 3.47 (m, 2H), 2.24 - 2.02 (2s, 3H), 1.14 - 1.03 (m, 3H)。(可互相轉化之阻轉異構物之混合物)
401		566.2	方法D， RT = 1.87 min， 94.4%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.05 - 9.00 (m, 1H), 7.99 - 7.81 (m, 2H), 7.70 - 7.65 (m, 1H), 7.62 - 7.50 (m, 2H), 7.45 - 7.40 (m, 1H), 6.90 - 6.72 (m, 2H), 6.28 - 6.24 (m, 1H), 5.42 - 4.74 (m, 1H), 4.30 - 3.94 (m, 3H), 3.76 - 3.70 (2s, 3H), 3.49 - 3.34 (m, 2H), 2.81 - 2.68 (m, 2H), 2.22 - 2.06 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)

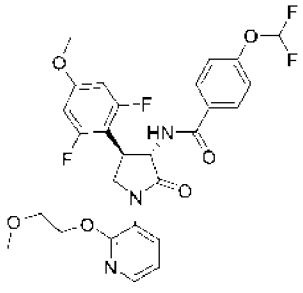
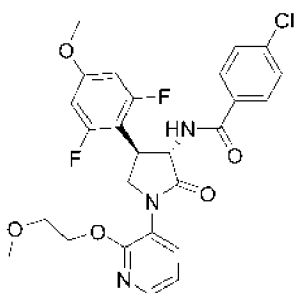
402		598.2	方法D， RT = 1.83 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.99 - 8.95 (m, 1H), 7.99 - 7.84 (m, 2H), 7.61 - 7.52 (m, 1H), 7.58 - 7.12 (m, 4H), 6.90 - 6.70 (m, 2H), 6.21 - 6.17 (m, 1H), 5.42 - 4.74 (m, 1H), 4.30 - 3.94 (m, 3H), 3.76 - 3.70 (2s, 3H), 3.49 - 3.34 (m, 2H), 2.81 - 2.68 (m, 2H), 2.22 - 2.06 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)
403		566.2	方法D， RT = 1.87 min， 94.4%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.06 - 9.01 (m, 1H), 7.99 - 7.82 (m, 2H), 7.71 - 7.67 (m, 1H), 7.63 - 7.52 (m, 2H), 7.49 - 7.37 (m, 1H), 6.90 - 6.73 (m, 2H), 6.25 - 6.21 (m, 1H), 5.42 - 4.74 (m, 1H), 4.22 - 3.95 (m, 2H), 3.95 - 3.82 (m, 1H), 3.79 - 3.75 (2s, 3H), 3.74 - 3.54 (m, 2H), 2.23 - 2.03 (2s, 3H), 1.32 - 1.09 (m, 1H), 0.58 - 0.45 (m, 2H), 0.42 - 0.26 (m, 2H) (可互相轉化之阻轉異構物之混合物)

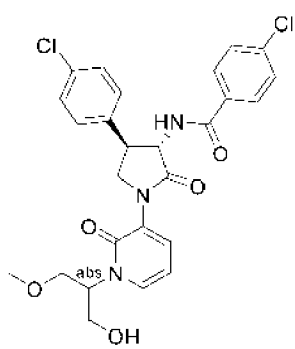
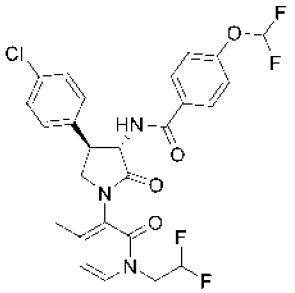
404		598.2	方法D， RT = 1.83 min， 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.06 - 9.01 (m, 1H), 7.99 - 7.82 (m, 2H), 7. 71 - 7.67 (m, 1H), 7.63 - 7.52 (m, 2H), 7.49 - 7.37 (m, 1H), 6.90 - 6.73 (m, 2H), 6.25 - 6.21 (m, 1H)), 5.42 - 4.69 (m, 1H), 4.19 - 3.90 (m, 4H), 3.78 - 3.72 (2s, 3H), 3.63 - 3.35 (m, 3H), 3.24 (s, 3H), 2.23 - 2.02 (2s, 3H)。 (可互相轉化之阻轉異構物之 混合物)
405		560.3	方法D， RT = 1.885 min， 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.05 - 8.99 (m, 1H), 7.99 (d, J = 8.8 Hz, 2H), 7.60 (d, J = 7.1 Hz, 2H), 7.49 (d, J = 8.8 Hz, 2H), 7.35 (d, J = 8.8 Hz, 2H), 6.91 (d, J = 8.8 Hz, 2H), 6.32 (d, J = 7.1 Hz, 1H), 5.05 - 4.97 (m, 1H), 4.12 - 4.08 (m, 1H), 4.08 - 4.02 (m, 1H), 3.93 - 3.86 (m, 1H), 3.78 - 3.73 (m, 2H), 3.72 (s, 3H), 3.68 - 3.62 (m, 1H), 3.2 (s, 3H), 1.09 (d, J = 6.4 Hz, 3H)。

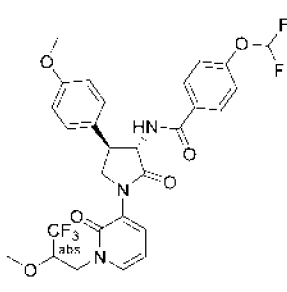
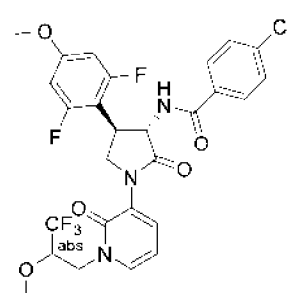
406		530.2	方法D， RT = 1.681 min， 97.2%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.07 - 8.96 (m, 1H), 7.90 - 7.84 (m, 2H), 7.68 (dd, J = 7.0, 1.8 Hz, 1H), 7.59 - 7.52 (m, 3H), 7.50 - 7.44 (m, 2H), 7.43 - 7.38 (m, 2H), 6.37 - 6.31 (m, 1H), 5.13 - 4.98 (m, 2H), 4.20 - 4.12 (m, 1H), 3.88 - 3.58 (m, 7H), 3.23 (s, 3H)。
407		564.2	方法D， RT = 1.59 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.98 (d, J = 8.6 Hz, 1H), 7.94 - 7.81 (m, 2H), 7.67 (dd, J = 6.6, 2.2 Hz, 1H), 7.47 - 7.45 (m, 1H), 7.35 (t, J = 73.6 Hz, 1H), 7.28 - 7.26 (m, 2H), 6.85 - 6.67 (m, 2H), 6.33 (t, J = 7.0 Hz, 1H), 5.11 (dd, J = 11.4, 8.7 Hz, 1H), 4.55 - 4.47 (m, 1H), 4.03 - 3.97 (m, 3H), 3.77 (s, 3H), 3.67 - 3.61 (m, 3H), 0.99 (d, J = 5.9 Hz, 3H)。

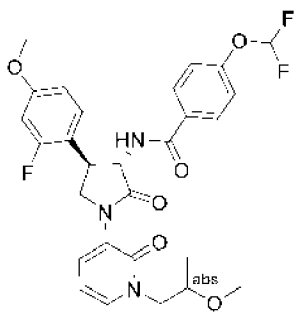
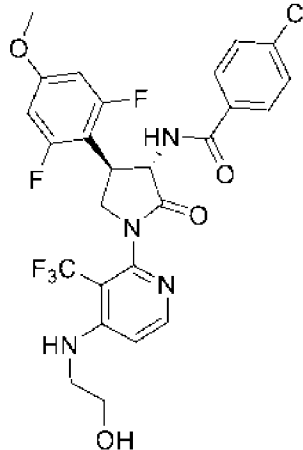
408		582.2	方法D， RT = 2.052 min， 95.7%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.14 (d, J = 8.3 Hz, 1H), 8.13 (dd, J = 4.9, 2.0 Hz, 1H), 8.01 - 7.88 (m, 2H), 7.79 (dd, J = 7.6, 1.7 Hz, 1H), 7.49 (d, J = 8.3 Hz, 2H), 7.11 (dd, J = 7.6, 4.9 Hz, 1H), 6.78 (d, J = 10.5 Hz, 2H), 5.11 (dd, J = 11.0, 8.6 Hz, 1H), 4.47 - 4.40 (m, 2H), 4.19 - 4.09 (m, 1H), 4.03 (t, J = 9.7 Hz, 1H), 3.97 - 3.91 (m, 1H), 3.77 (s, 3H), 3.72 - 3.67 (m, 2H), 3.30 (s, 3H)。
409		532.2	方法D， RT = 1.618 min， 98.4%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.96 (br d, J = 8.6 Hz, 1H), 7.96 - 7.83 (m, 2H), 7.62 - 7.57 (m, 2H), 7.50 - 7.37 (m, 4H), 7.34 (t, J = 73.6 Hz, 1H), 7.29 - 7.25 (m, 2H), 6.31 (t, J = 7.0 Hz, 1H), 5.08 - 4.98 (m, 2H), 4.98 - 4.86 (m, 1H), 4.17 (t, J = 8.3 Hz, 1H), 4.08 (dd, J = 12.7, 3.7 Hz, 1H), 3.96 - 3.88 (m, 1H), 3.81 (dd, J = 10.5, 8.3 Hz, 1H), 3.76 - 3.69 (m, 1H), 1.09 (d, J = 6.4 Hz, 3H)。

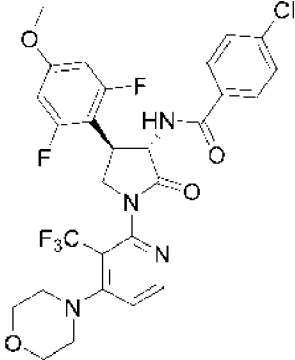
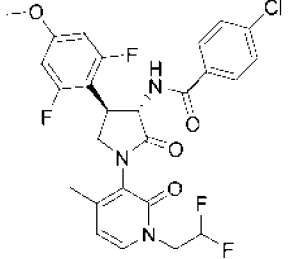
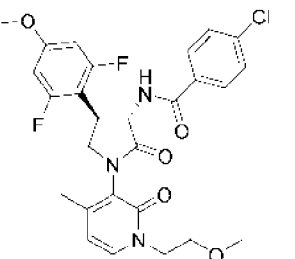
410		599.2	方法D， RT = 1.94 min， 95.8%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.85 (d, J = 7.6 Hz, 1H), 8.25 - 8.13 (m, 1H), 7.61 (d, J = 8.6 Hz, 2H), 7.45 (d, J = 8.6 Hz, 2H), 6.85 (d, J = 6.1 Hz, 1H), 6.69 - 6.56 (m, 2H), 6.40 - 6.30 (m, 1H), 4.99 (dd, J = 9.2, 7.7 Hz, 1H), 4.59 - 4.53 (m, 1H), 4.32 - 4.23 (m, 1H), 3.99 (br t, J = 8.9 Hz, 1H), 3.70 (s, 3H), 3.53 - 3.44 (m, 4H), 3.28 (s, 3H)。
411		526.2	方法D， RT = 1.465 min，93%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.98 (d, J = 8.6 Hz, 1H), 7.93 - 7.81 (m, 2H), 7.67 (dd, J = 6.8, 1.7 Hz, 1H), 7.59 - 7.48 (m, 3H), 7.34 (d, J = 8.8 Hz, 2H), 6.90 (d, J = 8.6 Hz, 2H), 6.33 (t, J = 7.0 Hz, 1H), 5.12 - 4.93 (m, 3H), 4.13 - 4.05 (m, 1H), 3.80 - 3.73 (m, 4H), 3.72 (s, 3H), 3.69 - 3.58 (m, 2H), 3.23 (s, 3H)。

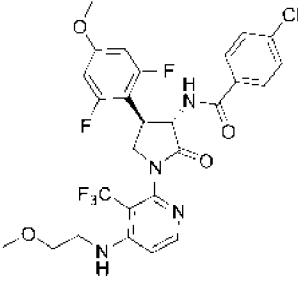
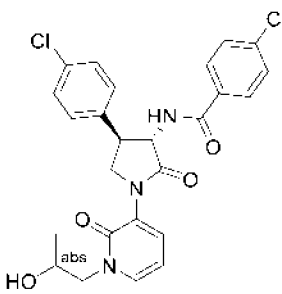
412		564.2	方法D， RT = 1.78 min， 99.3%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.03 (d, J = 8.6 Hz, 1H), 8.13 (dd, J = 4.9, 1.7 Hz, 1H), 7.94 - 7.83 (m, 2H), 7.79 (dd, J = 7.6, 1.7 Hz, 1H), 7.34 (t, J = 73.0 Hz, 1H), 7.28 - 7.26 (m, 2H), 7.14 - 7.14 (m, 1H), 6.78 (d, J = 10.8 Hz, 2H), 5.09 (dd, J = 10.9, 8.7 Hz, 1H), 4.44 (dd, J = 5.4, 3.9 Hz, 2H), 4.20 - 4.09 (m, 1H), 4.03 (t, J = 9.5 Hz, 1H), 3.97 - 3.90 (m, 1H), 3.77 (s, 3H), 3.73 - 3.65 (m, 2H), 3.30 (s, 3H)。
413		532.2	方法D， RT = 1.87 min， 98.2%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.10 (d, J = 8.8 Hz, 1H), 8.13 (dd, J = 5.0, 1.8 Hz, 1H), 7.89 - 7.81 (m, 2H), 7.79 (dd, J = 7.6, 2.0 Hz, 1H), 7.61 - 7.50 (m, 2H), 7.11 (dd, J = 7.6, 5.1 Hz, 1H), 6.78 (d, J = 10.8 Hz, 2H), 5.10 (dd, J = 11.0, 8.8 Hz, 1H), 4.51 - 4.40 (m, 2H), 4.19 - 4.08 (m, 1H), 4.02 (t, J = 9.7 Hz, 1H), 3.97 - 3.91 (m, 1H), 3.77 (s, 3H), 3.73 - 3.67 (m, 2H), 3.30 (s, 3H)。

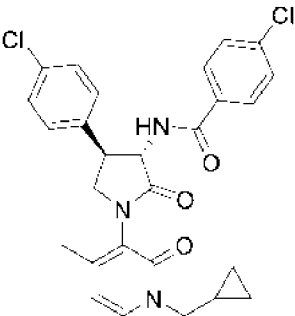
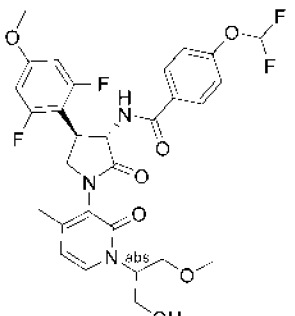
414		530.2	方法D， RT = 1.670 min， 97.1%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.02 (d, J = 8.3 Hz, 1H), 7.87 (d, J = 8.8 Hz, 2H), 7.68 (dd, J = 1.6, 7.0 Hz, 1H), 7.61 - 7.52 (m, 3H), 7.51 - 7.44 (m, 2H), 7.44 - 7.30 (m, 2H), 6.34 (t, J = 7.1 Hz, 1H), 5.11 - 4.97 (m, 3H), 4.14 (t, J = 7.3 Hz, 1H), 3.86 - 3.61 (m, 6H), 3.23 (s, 3H)。
415		552.2	方法D， RT = 1.838 min， 97.2%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.09 - 8.88 (m, 1H), 8.01 - 7.87 (m, 2H), 7.71 - 7.57 (m, 1H), 7.55 - 7.10 (m, 7H), 6.48 - 6.12 (m, 2H), 5.32 - 4.71 (m, 1H), 4.45 - 4.31 (m, 2H), 4.15 - 3.69 (m, 3H), 2.23 - 2.11 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)

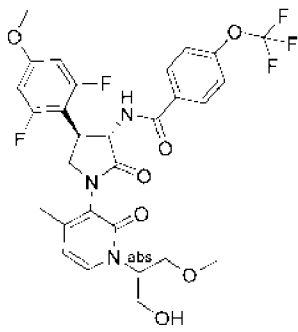
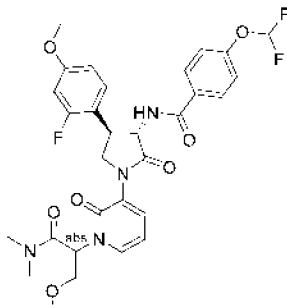
416		596.2	方法D， RT = 1.824 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.92 (d, J = 8.3 Hz, 1H), 7.92 (d, J = 8.8 Hz, 2H), 7.69 (dd, J = 6.7, 1.8 Hz, 1H), 7.66 (dd, J = 7.3, 1.8 Hz, 1H), 7.37 - 7.22 (m, 4H), 7.33 (t, J = 76.0 Hz, 1H), 6.90 (d, J = 8.8 Hz, 2H), 6.38 (t, J = 7.0 Hz, 1H), 5.07 - 4.94 (m, 1H), 4.41 (dd, J = 13.3, 3.5 Hz, 1H), 4.36 - 4.26 (m, 1H), 4.16 - 3.95 (m, 2H), 3.82 - 3.73 (m, 2H), 3.72 (s, 3H), 3.36 (s, 3H)。
417		600.2	方法D， RT = 1.95 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.07 (d, J = 8.8 Hz, 1H), 7.89 - 7.77 (m, 2H), 7.71 (dd, J = 6.8, 2.0 Hz, 1H), 7.68 (dd, J = 2.0, 7.1 Hz, 1H), 7.60 - 7.48 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.39 (t, J = 7.0 Hz, 1H), 5.12 (dd, J = 10.8, 8.8 Hz, 1H), 4.42 (dd, J = 13.3, 3.3 Hz, 1H), 4.33 - 4.24 (m, 1H), 4.15 - 3.92 (m, 4H), 3.76 (s, 3H), 3.36 (s, 3H)。

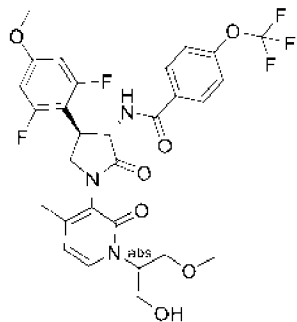
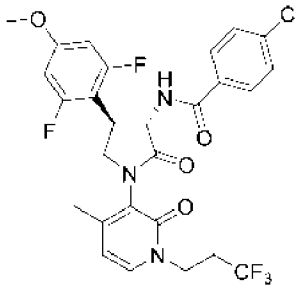
418		560.3	方法D， RT = 1.67 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.95 (d, J = 8.8 Hz, 1H), 7.97 - 7.83 (m, 2H), 7.66 - 7.56 (m, 2H), 7.54 - 7.48 (m, 1H), 7.35 (t, J = 76.0 Hz, 1H), 7.31 - 7.24 (m, 2H), 6.87 - 6.73 (m, 2H), 6.31 (t, J = 7.0 Hz, 1H), 5.13 (dd, J = 11.5, 8.8 Hz, 1H), 4.22 - 4.12 (m, 1H), 4.08 (dd, J = 13.2, 3.7 Hz, 1H), 4.04 - 3.94 (m, 1H), 3.84 (dd, J = 13.3, 7.7 Hz, 1H), 3.74 (s, 3H), 3.70 - 3.60 (m, 2H), 3.18 (s, 3H), 1.09 (d, J = 6.4 Hz, 3H)。
419		585.2	方法D， RT = 1.79 min， 92.4%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.15 - 8.96 (m, 1H), 8.34 (d, J = 5.1 Hz, 1H), 7.83 (d, J = 8.6 Hz, 2H), 7.61 - 7.50 (m, 2H), 6.87 - 6.73 (m, 2H), 6.71 (d, J = 5.1 Hz, 1H), 6.43 (br t, J = 6.1 Hz, 1H), 5.08 - 4.91 (m, 1H), 4.81 - 4.71 (m, 1H), 4.27 - 4.00 (m, 2H), 3.81 - 3.77 (m, 1H), 3.76 (s, 3H), 3.61 - 3.47 (m, 4H)。

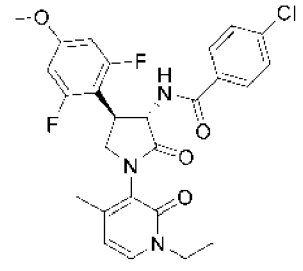
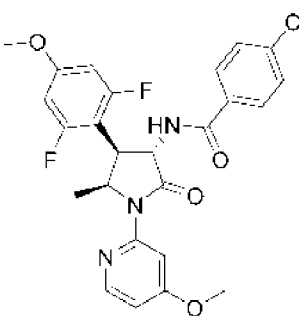
420		611.2	方法D， RT = 1.94 min， 97.4%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.10 (br d, J = 8.1 Hz, 1H), 8.55 - 8.41 (m, 1H), 7.82 (br d, J = 8.1 Hz, 2H), 7.66 - 7.39 (m, 2H), 7.22 (d, J = 5.6 Hz, 1H), 6.87 - 6.59 (m, 2H), 5.19 - 5.01 (m, 1H), 4.42 - 4.11 (m, 2H), 3.80 (s, 3H), 3.79 - 3.56 (m, 5H), 3.28 - 3.19 (m, 2H), 3.17 - 3.05 (m, 2H)。
421		552.2	方法D， RT = 1.77min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.22 - 8.91 (m, 1H), 7.91 - 7.76 (m, 2H), 7.72 - 7.44 (m, 3H), 6.87 - 6.68 (m, 2H), 6.51 - 6.03 (m, 2H), 5.38 - 4.75 (m, 1H), 4.51 - 4.32 (m, 2H), 4.30 - 4.02 (m, 2H), 3.79 - 3.73 (2s, 3H), 3.60 - 3.44 (m, 1H), 2.25 - 2.02 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)
422		546.3	方法D， RT = 1.69 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.23 - 8.89 (m, 1H), 7.98 - 7.74 (m, 2H), 7.68 - 7.41 (m, 3H), 6.79 - 6.74 (m, 2H), 6.28 - 6.09 (m, 1H), 5.44 - 4.77 (m, 1H), 4.29 - 3.96 (m, 4H), 3.77 - 3.74 (2s, 3H), 3.63 - 3.42 (m, 3H), 3.27 - 3.23 (2s, 3H), 2.23 - 1.99 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)

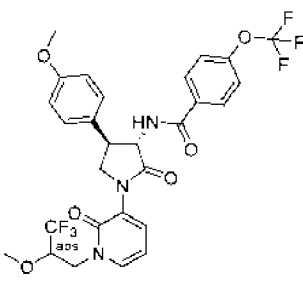
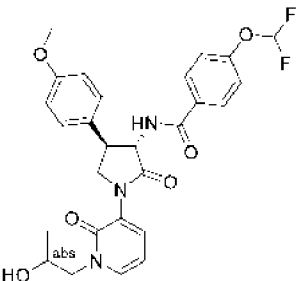
423		599.2	方法D， RT = 1.94 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.11 - 9.07 (m, 1H), 8.25 - 8.13 (m, 1H), 7.88 - 7.82 (m, 2H), 7.56 (d, J = 8.6 Hz, 2H), 6.91 - 6.85 (m, 1H), 6.69 - 6.56 (d, J = 10.8 Hz, 2H), 6.46 - 6.33 (m, 1H), 5.16 - 5.11 (m, 1H), 4.35 - 4.13 (m, 2H), 3.79 (s, 3H), 3.78 - 3.71 (m, 1H), 3.53 - 3.44 (m, 4H), 3.28 (s, 3H)。 (可互相轉化之阻轉異構物之混合物)
424		500.2	方法D， RT = 1.635 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.03 (d, J = 8.8 Hz, 1H), 7.90 - 7.82 (m, 2H), 7.65 - 7.52 (m, 4H), 7.50 - 7.44 (m, 2H), 7.43 - 7.36 (m, 2H), 6.31 (t, J = 7.0 Hz, 1H), 5.07 - 5.00 (m, 1H), 4.98 - 4.88 (m, 1H), 4.17 - 4.10 (m, 1H), 4.06 (dd, J = 12.7, 3.7 Hz, 1H), 3.96 - 3.88 (m, 1H), 3.84 - 3.74 (m, 2H), 3.68 - 3.64 (m, 1H), 1.08 (d, J = 6.4 Hz, 3H)。

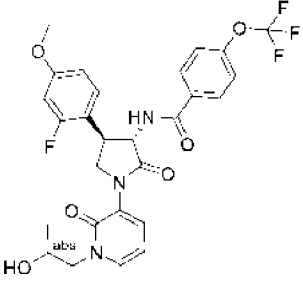
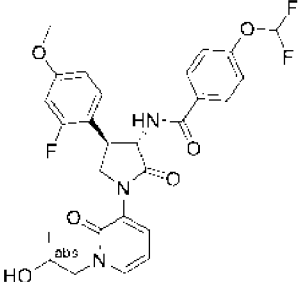
425		510.2	方法D， RT = 1.937 min， 97.2%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.08 - 9.02 (m, 1H), 7.90 - 7.86 (m, 2H), 7.71 - 7.67 (m, 1H), 7.60 - 7.47 (m, 3H), 7.46 - 7.31 (m, 3H), 6.24 - 6.20 (m, 1H), 5.36 - 4.62 (m, 1H), 4.15 - 3.82 (m, 3H), 3.81 - 3.47 (m, 2H), 2.22 - 2.07 (2s, 3H), 1.31 - 1.16 (m, 1H), 0.54 - 0.41 (m, 2H), 0.41 - 0.28 (m, 2H)。 (可互相轉化之阻轉異構物之 混合物)
426		608.3	方法D， RT = 1.539 min， 97.8%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.17 - 8.79 (m, 1H), 8.01 - 7.80 (m, 2H), 7.68 - 7.56 (m, 1H), 7.56 - 7.05 (m, 3H), 6.79 - 6.74 (m, 2H), 6.30 - 6.10 (m, 1H), 5.39 - 4.78 (m, 3H), 4.32 - 4.00 (m, 2H), 3.78 - 3.75 (2s, 3H), 3.74 - 3.58 (m, 3H), 3.51 - 3.48 (m, 1H), 3.53 - 3.44 (m, 1H), 3.25 - 3.18 (2s, 3H), 2.26 - 1.91 (2s, 3H)。(可互相 轉化之阻轉異構物之混合物)

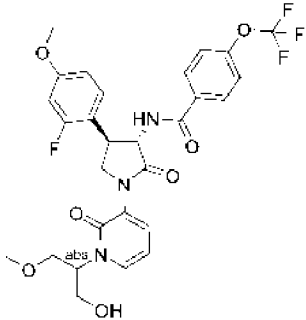
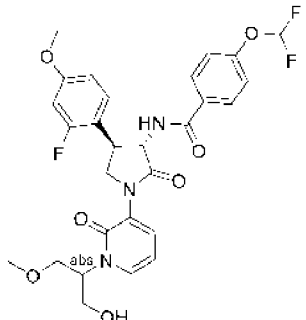
427		626.2	方法D， RT = 1.759 min， 98.3%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.23 - 8.88 (m, 1H), 8.04 - 7.87 (m, 2H), 7.71 - 7.55 (m, 1H), 7.55 - 7.35 (m, 2H), 6.85 - 6.62 (m, 2H), 6.29 - 6.12 (m, 1H), 5.39 - 4.82 (m, 3H), 4.32 - 4.02 (m, 2H), 3.77 - 3.74 (2s, 3H), 3.74 - 3.57 (m, 4H), 3.53 - 3.50 (m, 1H), 3.23 - 3.19 (2s, 3H), 2.23 - 2.00 (2s, 3H)。 (可互相轉化之阻轉異構物之混合物)
428		617.7	方法D， RT = 1.58 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.95 (d, J = 8.8 Hz, 1H), 7.97 - 7.83 (m, 2H), 7.66 - 7.56 (m, 2H), 7.54 - 7.48 (m, 1H), 7.35 (t, J = 76.0 Hz, 1H), 7.31 - 7.24 (m, 2H), 6.87 - 6.73 (m, 2H), 6.31 (t, J = 7.0 Hz, 1H), 5.16 - 5.04 (m, 1H), 4.15 - 3.98 (m, 2H), 3.93 - 3.80 (m, 2H), 3.78 (s, 3H), 3.68 - 3.51 (m, 2H), 3.27 (s, 3H), 3.01 (s, 3H), 2.99 (s, 3H)。

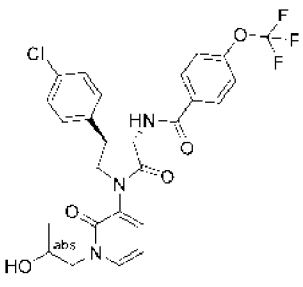
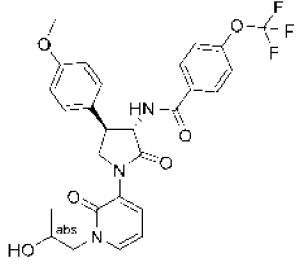
429		626.3	方法D， RT = 1.775 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.27 - 9.01 (m, 1H), 8.05 - 7.81 (m, 2H), 7.69 - 7.53 (m, 1H), 7.53 - 7.32 (m, 2H), 6.79 - 6.75 (m, 2H), 6.32 - 6.13 (m, 1H), 5.40 - 4.81 (m, 3H), 4.32 - 4.01 (m, 2H), 3.76 - 3.74 (2s, 3H), 3.74 - 3.57 (m, 3H), 3.51 - 3.49 (m, 1H), 3.55 - 3.46 (m, 1H), 3.22 (s, 3H), 2.24 - 1.96 (2s, 3H)。 (可互相轉化之阻轉異構物之混合物)
430		584.2	方法D， RT = 1.89 min，99 %	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.21 - 8.84 (m, 1H), 7.92 - 7.78 (m, 2H), 7.76 - 7.64 (m, 1H), 7.61 - 7.43 (m, 2H), 6.79 - 6.75 (m, 2H), 6.34 - 6.17 (m, 1H), 5.37 - 4.78 (m, 1H), 4.31 - 4.00 (m, 4H), 3.78 - 3.75 (2s, 3H), 3.55 - 3.40 (m, 1H), 2.83 - 2.66 (m, 2H), 2.24 - 1.98 (2s, 3H)。 (可互相轉化之阻轉異構物之混合物)

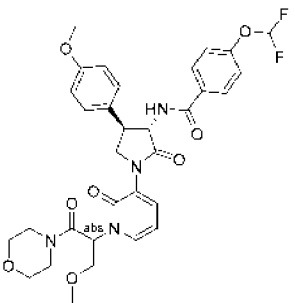
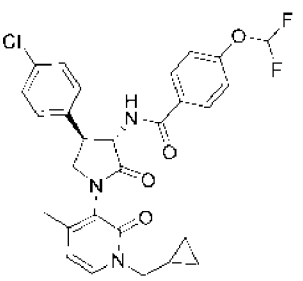
431		516.2	方法D， RT = 1.69 min，94 %	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.21 - 8.89 (m, 1H), 7.91 - 7.76 (m, 2H), 7.73 - 7.61 (m, 1H), 7.61 - 7.39 (m, 2H), 6.79 - 6.75 (m, 2H), 6.29 - 6.13 (m, 1H), 5.38 - 4.77 (m, 1H), 4.30 - 3.82 (m, 4H), 3.77 - 3.75 (2s, 3H), 3.55 - 3.44 (m, 1H), 2.21 - 2.01 (2s, 3H), 1.30 - 1.13 (m, 3H)。(可互相轉化之阻轉異構物之混合物)
432		502.2	方法D， RT = 2.02 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.90 (d, J = 8.6 Hz, 1H), 8.26 (d, J = 5.9 Hz, 1H), 7.97 (d, J = 2.2 Hz, 1H), 7.93 - 7.80 (m, 2H), 7.58 - 7.08 (m, 2H), 6.93 - 6.71 (m, 3H), 5.72-5.67 (m, 1H), 5.02 - 4.88 (m, 1H), 4.32 - 4.27 (m, 1H), 3.84 (s, 3H), 3.78 (s, 3H), 1.17 (d, J = 6.6 Hz, 3H)。

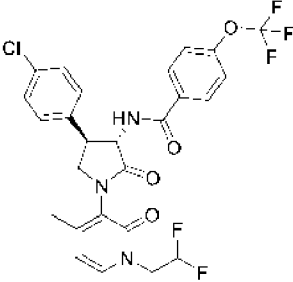
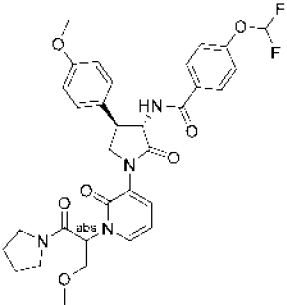
433		614.2	方法D， RT = 1.97 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.02 (d, J = 8.3 Hz, 1H), 8.05 - 7.86 (m, 2H), 7.72 - 7.59 (m, 2H), 7.47 (d, J = 8.3 Hz, 2H), 7.35 (d, J = 8.6 Hz, 2H), 6.91 (d, J = 8.6 Hz, 2H), 6.39 (t, J = 7.1 Hz, 1H), 5.08 - 4.97 (m, 1H), 4.46 - 4.38 (m, 1H), 4.33 - 4.24 (m, 1H), 4.16 (t, J = 7.8 Hz, 1H), 4.02 (dd, J = 13.3, 8.7 Hz, 1H), 3.81 - 3.72 (m, 2H), 3.72 (s, 3H), 3.36 (s, 3H)。
434		528.3	方法D， RT = 1.412 min，98%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.96 - 8.89 (m, 1H), 7.96 - 7.89 (m, 2H), 7.64 - 7.55 (m, 2H), 7.35 - 7.33 (m, 2H), 7.33 (t, J = 76.0 Hz, 1H), 7.25 - 7.20 (m, 2H), 6.95 - 6.88 (m, 2H), 6.34 - 6.26 (m, 1H), 5.05 - 4.91 (m, 2H), 4.12 - 4.01 (m, 2H), 3.95 - 3.88 (m, 1H), 3.80 - 3.62 (m, 6H), 1.09 (d, J = 6.4 Hz, 3H)。

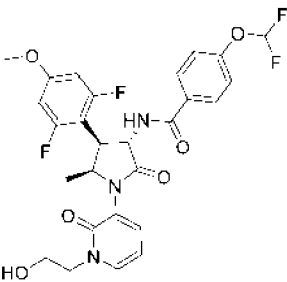
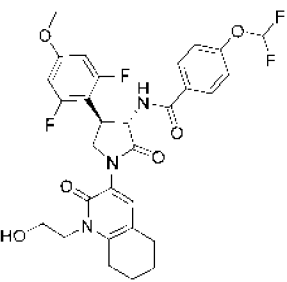
435		564.2	方法D， RT = 1.66 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.06 (d, J = 8.8 Hz, 1H), 8.03 - 7.86 (m, 2H), 7.62 - 7.57 (m, 2H), 7.55 - 7.38 (m, 3H), 6.88 - 6.71 (m, 2H), 6.31 (t, J = 7.1 Hz, 1H), 5.12 (dd, J = 11.2, 8.8 Hz, 1H), 4.95 - 4.91 (m, 1H), 4.16 - 3.87 (m, 4H), 3.78 (s, 3H), 3.77 - 3.61 (m, 2H), 1.08 (d, J = 6.4 Hz, 3H)。
436		546.2	方法D， RT = 1.48 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.02 - 8.87 (m, 1H), 7.91 (d, J = 7.8 Hz, 2H), 7.66 - 7.55 (m, 2H), 7.53 - 7.46 (m, 1H), 7.35 (t, J = 72.0 Hz, 1H), 7.28 - 7.24 (m, 2H), 6.89 - 6.70 (m, 2H), 6.31 (t, J = 7.1 Hz, 1H), 5.17 - 5.02 (m, 1H), 4.95 - 4.91 (m, 1H), 4.14 - 3.86 (m, 4H), 3.77(s, 3H), 3.76 - 3.63 (m, 2H), 1.09 (d, J = 6.1 Hz, 3H)。

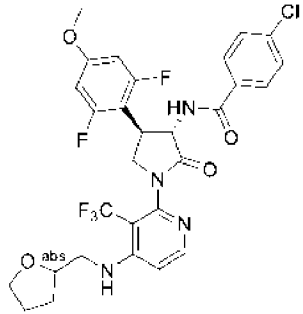
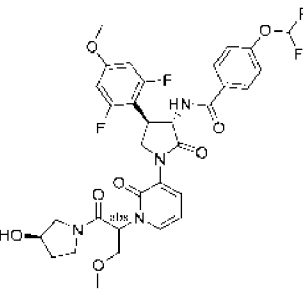
437		594.3	方法D， RT = 1.68 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.06 (br d, J = 8.8 Hz, 1H), 7.97 (d, J = 8.8 Hz, 2H), 7.69 (br d, J = 7.1 Hz, 1H), 7.57 (br d, J = 7.3 Hz, 1H), 7.54 - 7.38 (m, 3H), 6.90 - 6.73 (m, 2H), 6.41 - 6.26 (m, 1H), 5.19 - 4.98 (m, 3H), 4.18 - 4.10 (m, 1H), 4.04 - 3.94 (m, 1H), 3.79 (s, 3H) 3.77 - 3.59 (m, 5H), 3.23 (s, 3H)。
438		576.2	方法D， RT = 1.50 min， 98.8%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.94 (d, J = 8.6 Hz, 1H), 7.96 - 7.86 (m, 2H), 7.68 (dd, J = 7.0, 1.8 Hz, 1H), 7.56 (dd, J = 7.2, 1.8 Hz, 1H), 7.53 - 7.48 (m, 1H), 7.33 (t, J = 74.0 Hz, 1H), 7.28 - 7.24 (m, 2H), 6.86 - 6.70 (m, 2H), 6.34 (t, J = 7.1 Hz, 1H), 5.19 - 4.98 (m, 3H), 4.18 - 4.10 (m, 1H), 4.04 - 3.94 (m, 1H), 3.79 (s, 3H) 3.78 - 3.59 (m, 5H), 3.23 (s, 3H)。

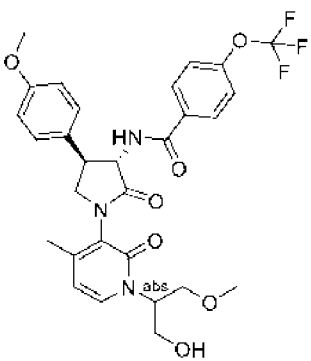
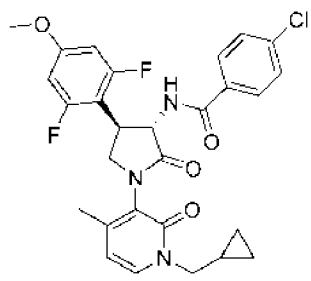
439		550.2	方法D， RT = 1.788 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.13 - 8.99 (m, 1H), 7.98 (d, J = 8.6 Hz, 2H), 7.68 - 7.55 (m, 2H), 7.51 - 7.45 (m, 4H), 7.44 - 7.34 (m, 2H), 6.31 (t, J = 7.1 Hz, 1H), 5.10 - 4.99 (m, 1H), 4.99 - 4.84 (m, 1H), 4.18 - 4.01 (m, 2H), 3.96 - 3.86 (m, 1H), 3.84 - 3.75 (m, 2H), 3.71 - 3.61 (m, 1H), 1.08 (d, J = 6.4 Hz, 3H)。
440		546.2	方法D， RT = 1.596 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.02 (d, J = 8.8 Hz, 1H), 8.05 - 7.85 (m, 2H), 7.67 - 7.55 (m, 2H), 7.47 (d, J = 7.8 Hz, 2H), 7.40 - 7.25 (m, 2H), 6.90 (d, J = 8.8 Hz, 2H), 6.30 (t, J = 7.0 Hz, 1H), 5.01 (dd, J = 11.0, 8.8 Hz, 1H), 4.97 - 4.86 (m, 1H), 4.20 - 4.03 (m, 2H), 3.98 - 3.86 (m, 1H), 3.72 (s, 3H), 3.82 - 3.56 (m, 3H), 1.09 (d, J = 6.4 Hz, 3H)。

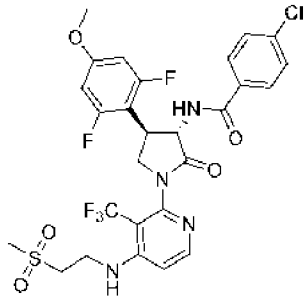
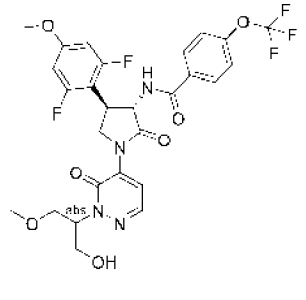
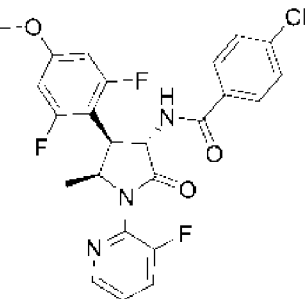
441		641.3	方法D， RT = 1.505 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.97 - 8.84 (m, 1H), 7.93 (d, J = 8.1 Hz, 2H), 7.72 - 7.59 (m, 2H), 7.36 - 7.34 (m, 2H), 7.33 (t, J = 74.0 Hz, 1H), 7.27 - 7.25 (m, 2H), 6.90 (d, J = 8.8 Hz, 2H), 6.47 - 6.33 (m, 1H), 6.07 - 6.04 (m, 1H), 5.05 - 4.93 (m, 1H), 4.12 - 4.04 (m, 1H), 3.93 - 3.74 (m, 3H), 3.72 (s, 3H), 3.64 - 3.44 (m, 6H), 3.28 (s, 3H), 3.38 - 3.19 (m, 3H)。
442		542.2	方法D， RT = 1.901 min， 97.7%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.02 - 8.97 (m, 1H), 7.99 - 7.85 (m, 2H), 7.71 - 7.67 (m, 1H), 7.56 - 7.47 (m, 1H), 7.45 - 7.12 (m, 6H), 6.25 - 6.21 (m, 1H), 5.33 - 4.62 (m, 1H), 4.17 - 3.94 (m, 1H), 4.17 - 3.82 (m, 2H), 3.81 - 3.47 (m, 2H), 2.21 - 2.07 (2s, 3H), 1.28 - 1.16 (m, 1H), 0.52 - 0.45 (m, 2H), 0.42 - 0.34 (m, 2H)。(可互相轉化之阻轉異構物之混合物)

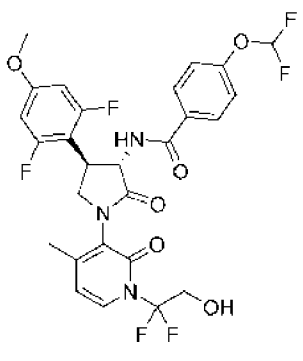
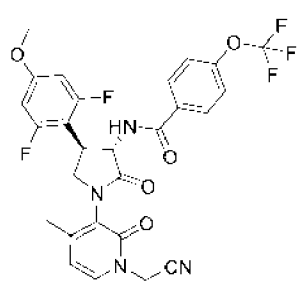
443		570.2	方法D， RT = 2.006 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.15 - 9.03 (m, 1H), 8.03 - 7.94 (m, 2H), 7.67 - 7.63 (m, 1H), 7.55 - 7.37 (m, 6H), 6.50 - 6.15 (m, 1H), 6.33 - 6.29 (m, 1H) 5.36 - 4.67 (m, 1H), 4.51 - 4.35 (m, 2H), 4.16 - 3.50 (m, 3H), 2.26 - 2.12 (2s, 3H)。 (可互相轉化之阻轉異構物之混合物)
444		625.3	方法D， RT = 1.594 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.91 (d, J = 9.0 Hz, 1H), 7.95 - 7.88 (m, 2H), 7.76 - 7.72 (m, 1H), 7.64 - 7.59 (m, 1H), 7.35 - 7.33 (m, 2H), 7.33 (t, J = 72.0 Hz, 1H), 7.28 - 7.24 (m, 2H), 6.94 - 6.83 (m, 2H), 6.43 - 6.35 (m, 1H), 5.95 - 5.87 (m, 1H), 5.03 - 4.94 (m, 1H), 4.05 (br d, J = 1.2 Hz, 1H), 3.92 - 3.84 (m, 1H), 3.80 - 3.75 (m, 2H), 3.72 (s, 3H), 3.66 - 3.59 (m, 2H), 3.57 - 3.49 (m, 2H), 3.35 - 3.29 (m, 1H), 3.27 (s, 3H), 1.96 - 1.84 (m, 2H), 1.82 - 1.70 (m, 2H)。

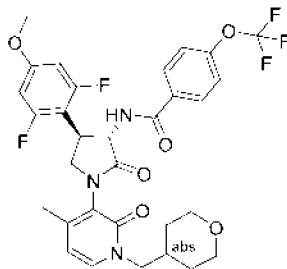
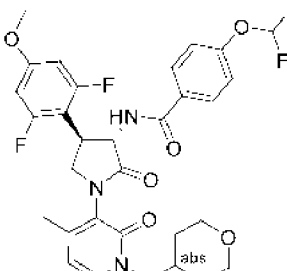
445		564.2	方法D， RT = 1.49 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.86 (d, J = 8.6 Hz, 1H), 7.95 - 7.82 (m, 2H), 7.66 (dd, J = 6.6 Hz, 2.0, 1H), 7.58 (dd, J = 6.6, 2.0, Hz, 1H), 7.35 (t, J = 73.6 Hz, 1H), 7.28 - 7.26 (m, 2H), 6.85 - 6.65 (m, 2H), 6.31 (t, J = 7.0 Hz, 1H), 5.66 (dd, J = 11.9, 8.7 Hz, 1H), 4.94 (t, J = 5.3 Hz, 1H), 4.69 - 4.56 (m, 1H), 4.30 (dd, J = 12.0, 8.1 Hz, 1H), 4.16 - 4.03 (m, 1H), 3.99 - 3.89 (m, 1H), 3.76 (s, 3H), 3.71 - 3.57 (m, 2H), 0.91 (d, J = 6.6 Hz, 3H)。
446		604.3	方法D， RT = 1.792 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.01 - 8.96 (m, 1H), 7.91 - 7.85 (m, 2H), 7.34 (t, J = 73.2 Hz, 1H), 7.34 (s, 1H), 7.29 - 7.21 (m, 2H), 6.80 - 6.72 (m, 2H), 5.14 - 5.06 (m, 1H), 5.00 - 4.92 (m, 1H), 4.14 - 4.01 (m, 3H), 3.98 - 3.90 (m, 2H), 3.76 (s, 3H), 3.66 - 3.58 (m, 2H), 2.86 - 2.79 (m, 2H), 2.56 - 2.47 (m, 2H), 1.81 - 1.71 (m, 2H), 1.70 - 1.60 (m, 2H)。

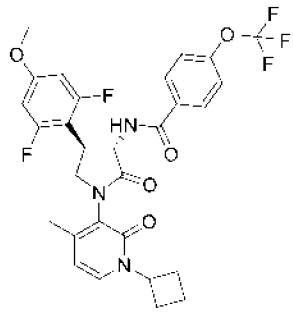
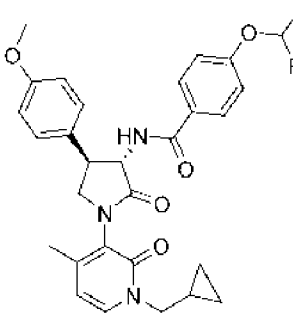
447		625.2	方法D， RT = 2.1 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.14 - 8.95 (m, 1H), 8.33 - 8.14 (m, 1H), 7.89 - 7.76 (m, 2H), 7.56 (d, J = 8.6 Hz, 2H), 6.96 - 6.86 (m, 1H), 6.78 (d, J = 11.0 Hz, 2H), 6.44 - 6.29 (m, 1H), 5.17 - 5.05 (m, 1H), 4.33 - 4.02 (m, 3H), 3.80 (s, 3H), 3.79 - 3.68 (m, 1H), 3.68 - 3.57 (m, 1H), 3.46 - 3.36 (m, 2H), 1.98 - 1.76 (m, 2H), 1.68 - 1.54 (m, 1H), 1.21 - 1.04 (m, 2H)。
448		677.2	方法D， RT = 1.71 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.02 - 8.98 (m, 1H), 7.88 (d, J = 8.1 Hz, 2H), 7.83 - 7.73 (m, 1H), 7.63 - 7.59 (m, 1H), 7.33 (t, J = 74.0 Hz, 1H), 7.28 - 7.24 (m, 2H), 6.84 - 6.67 (m, 2H), 6.40 (dt, J = 7.2, 1.6 Hz, 1H), 5.89 - 5.81 (m, 1H), 5.14 - 4.91 (m, 2H), 4.39 - 4.20 (m, 1H), 4.15 - 4.05 (m, 1H), 4.02 - 3.81 (m, 4H), 3.78 (s, 3H), 3.76 - 3.68 (m, 1H), 3.51 - 3.38 (m, 3H), 3.27 (2s, 3H), 2.02 - 1.66 (m, 2H)。

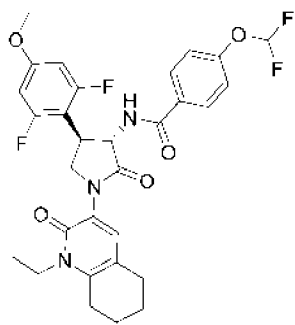
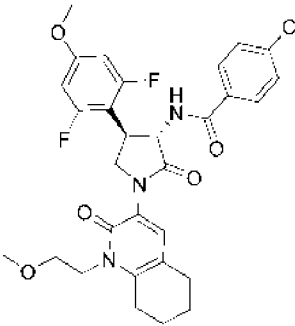
449		590.3	方法D， RT = 1.72 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.08 - 7.02 (m, 1H), 8.07 - 7.90 (m, 2H), 7.67 - 7.54 (m, 1H), 7.54 - 7.41 (m, 2H), 7.38 (d, J = 8.5 Hz, 1H), 7.32 (d, J = 8.5 Hz, 1H), 6.98 - 6.78 (m, 2H), 6.21 (d, J = 7.5 Hz, 1H), 5.23 - 4.64 (m, 3H), 4.14 - 3.81 (m, 2H), 3.78 - 3.70 (m, 4H), 3.64 - 3.42 (m, 4H), 3.23 - 3.20 (2s, 3H), 2.20 - 2.08 (2s, 3H)。 (可互相轉化之阻轉異構物之混合物)
450		542.2	方法D， RT = 1.87 min，97%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.23 - 8.96 (m, 1H), 7.91 - 7.78 (m, 2H), 7.73 - 7.65 (m, 1H), 7.59 - 7.52 (m, 2H), 6.79-6.75 (m, 2H), 6.27 - 6.19 (m, 1H), 5.36 - 4.89 (m, 1H), 4.28 - 4.03 (m, 3H), 3.86 - 3.80 (m, 1H), 3.77 - 3.74 (2s, 3H), 3.58 - 3.45 (m, 1H), 2.26 - 1.96 (2s, 3H), 1.28 - 1.15 (m, 1H), 0.50 - 0.46 (m, 2H), 0.40 - 0.37 (m, 2H)。 (可互相轉化之阻轉異構物之混合物)

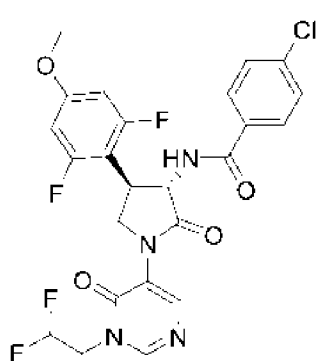
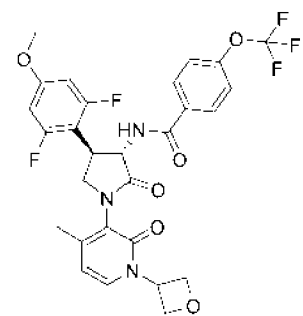
451		647.2	方法C， RT = 1.88 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.09 (d, J = 8.8 Hz, 1H), 8.33 - 8.22 (m, 1H), 7.90 - 7.75 (m, 2H), 7.58 - 7.54 (m, 2H), 6.94 - 6.85 (m, 1H), 6.85 - 6.68 (m, 3H), 5.17 - 5.06 (m, 1H), 4.32 - 4.18 (m, 2H), 3.82 - 3.67 (m, 6H), 3.45 (t, J = 6.7 Hz, 2H), 3.07 (s, 3H)。
452		613.2	方法D， RT = 2.002 min，96%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.16 (br s, 1H), 8.05 (d, J = 4.6 Hz, 1H), 7.94 (d, J = 8.8 Hz, 2H), 7.66 (d, J = 4.4 Hz, 1H), 7.49 (d, J = 8.8 Hz, 2H), 6.78 (d, J = 10.8 Hz, 2H), 5.34 - 5.22 (m, 1H), 5.08 (br d, J = 10.8 Hz, 1H), 4.98 - 4.81 (br s, 1H), 4.37 - 4.28 (m, 1H), 4.21 - 4.04 (m, 2H), 3.77 (s, 3H), 3.72 - 3.56 (m, 4H), 3.21 (s, 3H)。
453		490.2	方法D， RT = 1.84 min，96%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.05 (d, J = 8.3 Hz, 1H), 8.41 (d, J = 4.6 Hz, 1H), 7.94-7.84 (m, 3H), 7.57 - 7.48 (m, 3H), 6.89 - 6.73 (m, 2H), 5.53 (dd, J = 10.8, 8.6 Hz, 1H), 4.84 - 4.70 (m, 1H), 4.37 (dd, J = 10.8, 8.6 Hz, 1H), 3.78 (s, 3H), 1.03 (d, J = 6.6 Hz, 3H)。

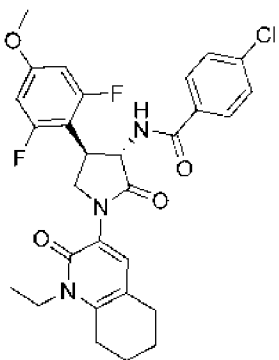
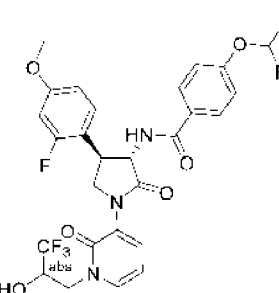
454		600.2	方法D， RT = 1.846 min，96%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.13 - 8.94 (m, 1H), 7.97 - 7.78 (m, 2H), 7.72 - 7.61 (m, 1H), 7.54 - 7.11 (m, 3H), 6.85 - 6.66 (m, 2H), 6.42 - 6.30 (m, 1H), 6.02 - 5.89 (m, 1H), 5.36 - 4.84 (m, 1H), 4.32 - 3.99 (m, 4H), 3.76 (2s, 3H), 3.59 - 3.52 (m, 1H), 2.26 - 2.08 (2s, 3H)。 (可互相轉化之阻轉異 構物之混合物)
455		577.2	方法D， RT = 2.02 min，98%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.26 - 9.01 (m, 1H), 8.04 - 7.86 (m, 2H), 7.81 - 7.65 (m, 1H), 7.57 - 7.40 (m, 2H), 6.90 - 6.66 (m, 2H), 6.44 - 6.27 (m, 1H), 5.39 - 4.81 (m, 3H), 4.30 - 4.05 (m, 2H), 3.77 (s, 3H), 3.62 - 3.47 (m, 1H), 2.25 - 2.02 (2s, 3H)。 (可互相轉化之 阻轉異構物之混合物)

456		636.3	方法D， RT = 1.904 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.30 - 8.92 (m, 1H), 8.10 - 7.83 (m, 2H), 7.73 - 7.53 (m, 1H), 7.53 - 7.23 (m, 2H), 6.84 - 6.60 (m, 2H), 6.30 - 6.13 (m, 1H), 5.43 - 4.78 (m, 1H), 4.34 - 4.02 (m, 2H), 3.95 - 3.69 (m, 4H), 3.70 (s, 3H), 3.56 - 3.43 (m, 1H), 3.27 - 3.13 (m, 2H), 2.22 - 2.04 (2s, 3H), 2.04 - 1.83 (m, 1H), 1.44 - 1.38 (m, 2H), 1.35 - 1.11 (m, 2H)。 (可互相轉化之阻轉異構物之混合物)
457		618.3	方法D， RT = 1.732 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.20 - 8.79 (m, 1H), 8.01 - 7.76 (m, 2H), 7.71 - 7.55 (m, 1H), 7.55 - 7.00 (m, 3H), 6.78 - 6.73 (m, 2H), 6.30 - 6.06 (m, 1H), 5.42 - 4.82 (m, 1H), 4.33 - 4.01 (m, 2H), 3.93 - 3.78 (m, 4H), 3.78 - 3.76 (2s, 3H), 3.55 - 3.43 (m, 1H), 3.27 - 3.15 (m, 2H), 2.23 - 2.03 (2s, 3H), 2.03 - 1.88 (m, 1H), 1.43 (m, 2H), 1.36 - 1.13 (m, 2H)。 (可互相轉化之阻轉異構物之混合物)

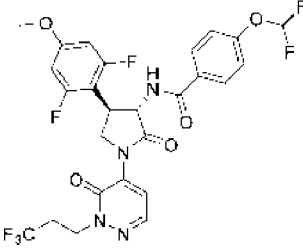
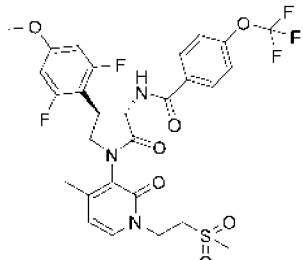
458		592.2	方法D， RT = 2.021 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.28 - 8.95 (m, 1H), 8.05 - 7.90 (m, 2H), 7.84 - 7.64 (m, 1H), 7.57 - 7.38 (m, 2H), 6.78 - 6.73 (m, 2H), 6.35 - 6.15 (m, 1H), 5.37 - 4.79 (m, 2H), 4.33 - 3.91 (m, 2H), 3.78 - 3.77 (2s, 3H), 3.74 - 3.63 (m, 1H), 3.59 - 3.37 (m, 1H), 2.40 - 2.20 (m, 3H), 2.20 - 1.97 (2s, 3H), 1.83 - 1.13 (m, 1H), 0.59 - 0.27 (m, 1H)。(可互相轉化之阻轉異構物之混合物)
459		538.3	方法D， RT = 1.714 min，94%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.03 - 8.82 (m, 1H), 7.99 - 7.89 (m, 2H), 7.70 - 7.66 (m, 1H), 7.55 - 7.06 (m, 5H), 6.92 - 6.89 (m, 2H), 6.24 - 6.21 (m, 1H), 5.29 - 4.62 (m, 1H), 4.13 - 3.81 (m, 2H), 3.79 - 3.59 (m, 5H), 3.48 - 3.44 (m, 1H), 2.25 - 2.04 (2s, 3H), 1.25 - 1.20 (m, 1H), 0.56 - 0.27 (m, 4H)。(可互相轉化之阻轉異構物之混合物)

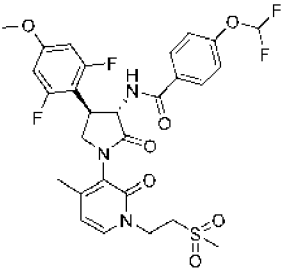
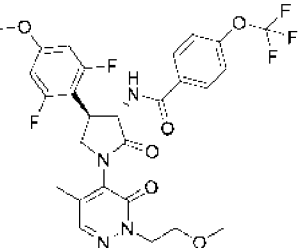
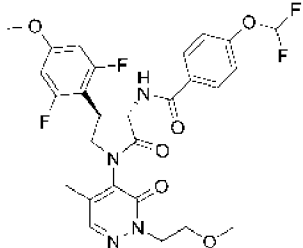
460		588.3	方法D， RT = 2.136 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.99 (d, J = 8.8 Hz, 1H), 7.93 - 7.81 (m, 2H), 7.34 (t, J = 73.6 Hz, 1H), 7.34 (s, 1H), 7.27 - 7.25 (m, 2H), 6.76 (d, J = 10.8 Hz, 2H), 5.11 (dd, J = 11.1, 8.7 Hz, 1H), 4.16 - 3.99 (m, 3H), 3.94 (br d, J = 9.3 Hz, 2H), 3.76 (s, 3H), 2.75 (br t, J = 6.0 Hz, 2H), 2.52 - 2.47 (m, 2H), 1.85 - 1.72 (m, 2H), 1.70 - 1.54 (m, 2H), 1.18 (t, J = 7.0 Hz, 3H)。
461		586.2	方法D， RT = 2.146 min，95%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.06 (d, J = 8.6 Hz, 1H), 7.91 - 7.73 (m, 2H), 7.62 - 7.44 (m, 2H), 7.34 (s, 1H), 6.76 (d, J = 10.8 Hz, 2H), 5.12 (dd, J = 11.1, 8.7 Hz, 1H), 4.22 - 4.03 (m, 3H), 3.98 - 3.90 (m, 2H), 3.76 (s, 3H), 3.55 (t, J = 5.6 Hz, 2H), 3.23 (s, 3H), 2.86 - 2.70 (m, 2H), 2.52 - 2.47 (m, 2H), 1.87 - 1.69 (m, 2H), 1.69 - 1.49 (m, 2H)。

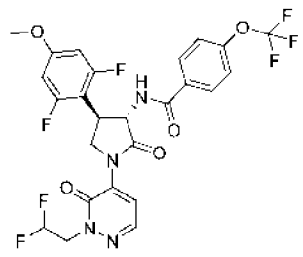
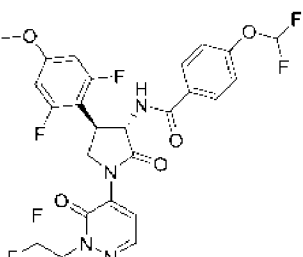
462		639.2	方法D， RT = 1.707 min， 98.7%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.08 (d, J = 8.6 Hz, 1H), 8.50 (s, 1H), 8.18 (s, 1H), 7.89 - 7.76 (m, 2H), 7.61 - 7.48 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 6.40 (tt, J = 52.0, 4.2 Hz, 1H), 5.12 (dd, J = 11.1, 8.7 Hz, 1H), 4.62 - 4.36 (m, 2H), 4.18 - 4.04 (m, 1H), 4.04 - 3.86 (m, 2H), 3.76 (s, 3H)。
463		594.2	方法D， RT = 1.777 min，95%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.24 - 9.01 (m, 1H), 8.02 - 7.85 (m, 2H), 7.78 - 7.74 (m, 1H), 7.54 - 7.39 (m, 2H), 6.86 - 6.65 (m, 2H), 6.41 - 6.26 (m, 1H), 5.58 - 5.41 (m, 1H), 5.37 - 4.65 (m, 5H), 4.30 - 4.00 (m, 2H), 3.77 - 3.74 (2s, 3H), 3.53 - 3.50 (m, 1H), 2.25 - 2.02 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)

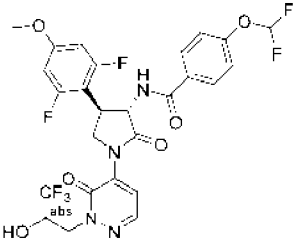
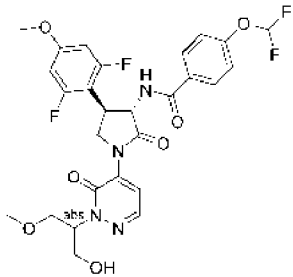
464		556.2	方法D， RT = 2.145 min，94%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.06 (d, J = 8.6 Hz, 1H), 7.83 (d, J = 8.6 Hz, 2H), 7.56 (d, J = 8.6 Hz, 2H), 7.32 (s, 1H), 6.76 (d, J = 10.8 Hz, 2H), 5.12 (dd, J = 11.1, 8.7 Hz, 1H), 4.15 - 3.98 (m, 3H), 3.94 (br d, J = 9.0 Hz, 2H), 3.76 (s, 3H), 2.81 - 2.66 (m, 2H), 2.52 - 2.47 (m, 2H), 1.87 - 1.70 (m, 2H), 1.70 - 1.56 (m, 2H), 1.18 (t, J = 7.0 Hz, 3H)。
465		600.2	方法D， RT = 1.85 min， 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 8.96 (d, J = 8.3 Hz, 1H), 7.97 - 7.85 (m, 2H), 7.69 (dd, J = 6.8, 2.0 Hz, 1H), 7.65 (dd, J = 7.3, 2.0 Hz, 1H), 7.52 (d, J = 9.8 Hz, 1H), 7.35 (t, J = 73.6 Hz, 1H), 7.29 - 7.2 (m, 2H), 6.88 - 6.76 (m, 2H), 6.38 (t, J = 7.0 Hz, 1H), 5.12 (dd, J = 11.2, 8.8 Hz, 1H), 4.45 (dd, J = 13.0, 2.7 Hz, 1H), 4.39 - 4.30 (m, 1H), 4.13 - 4.06 (m, 1H), 4.05 - 3.97 (m, 1H), 3.90 - 3.82 (m, 1H), 3.77 - 3.72 (m, 4H)。

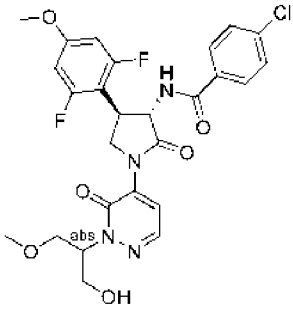
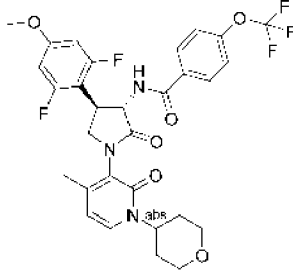
466		637.2	方法D， RT = 2.07 min，97%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.16 (d, J = 8.6 Hz, 1H), 8.05 (d, J = 4.6 Hz, 1H), 7.99 - 7.85 (m, 2H), 7.74 (d, J = 4.6 Hz, 1H), 7.49 (d, J = 8.6 Hz, 2H), 6.79 (d, J = 10.8 Hz, 2H), 5.06 (br dd, J = 4.6, 1.7 Hz, 1H), 5.10 - 4.98 (m, 1H), 4.55 - 4.45 (m, 1H), 4.42 - 4.23 (m, 3H), 4.23 - 4.02 (m, 2H), 3.77 (s, 3H)。
467		565.2	方法D， RT = 1.619 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.02 (d, J = 8.6 Hz, 1H), 8.34 (s, 1H), 8.12 (s, 1H), 7.96 - 7.80 (m, 2H), 7.34 (t, J = 72.6 Hz, 1H), 7.30 - 7.24 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 5.13 - 5.02 (m, 2H), 4.17 - 4.04 (m, 2H), 4.04 - 3.83 (m, 3H), 3.76 (s, 3H), 3.66 (dd, J = 13.1, 8.7 Hz, 1H), 1.11 (d, J = 6.4 Hz, 3H)。

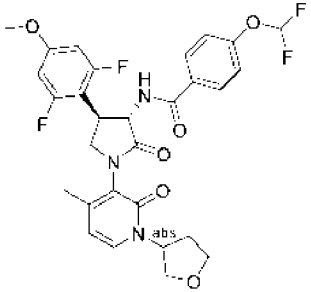
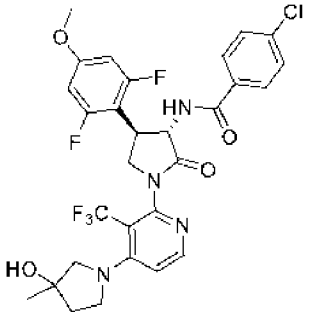
468		603.1	方法D， RT = 1.97 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.04 (d, J = 8.3 Hz, 1H), 8.04 (d, J = 4.6 Hz, 1H), 7.92 - 7.83 (m, 2H), 7.74 (d, J = 4.6 Hz, 1H), 7.35 (t, J = 73.6 Hz, 1H), 7.29 - 7.27 (m, 2H), 6.78 (d, J = 10.8 Hz, 2H), 5.05 (dd, J = 11.0, 8.3 Hz, 1H), 4.40 - 4.28 (m, 3H), 4.25 - 4.15 (m, 1H), 4.15 - 4.04 (m, 1H), 3.77 (s, 3H), 2.86 - 2.74 (m, 2H)。
469		644.2	方法D， RT = 2.00 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.26 - 8.90 (m, 1H), 8.06 - 7.85 (m, 2H), 7.76 - 7.61 (m, 1H), 7.55 - 7.35 (m, 2H), 6.86 - 6.63 (m, 2H), 6.36 - 6.19 (m, 1H), 5.39 - 4.81 (m, 1H), 4.38 - 4.06 (m, 4H), 3.82 - 3.69 (2s, 3H), 3.61 - 3.46 (m, 3H), 3.10 - 2.97 (2s, 3H), 2.25 - 1.96 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)

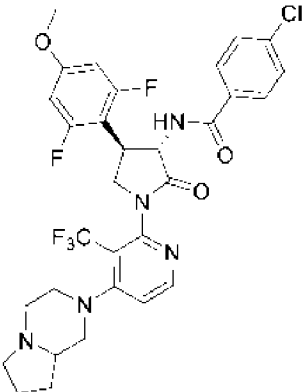
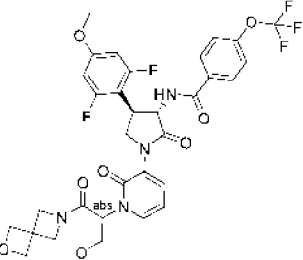
470		626.2	方法D， RT = 1.84 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.19 - 8.87 (m, 1H), 7.99 - 7.80 (m, 2H), 7.73 - 7.63 (m, 1H), 7.56 - 7.05 (m, 3H), 6.87 - 6.56 (m, 2H), 6.34 - 6.17 (m, 1H), 5.39 - 4.84 (m, 1H), 4.44 - 4.05 (m, 4H), 3.84 - 3.73 (2s, 3H), 3.64 - 3.42 (m, 3H), 3.10 - 2.98 (2s, 3H), 2.24 - 1.98 (2s, 3H)。 (可互相轉化之阻轉異構物之混合物)
471		597.2	方法D， RT = 2.12 min，98%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.25 - 9.00 (m, 1H), 8.08 - 7.76 (m, 3H), 7.59 - 7.35 (m, 2H), 6.90 - 6.64 (m, 2H), 5.38 - 4.75 (m, 1H), 4.42 - 4.10 (m, 4H), 3.81 - 3.74 (2s, 3H), 3.74 - 3.50 (m, 3H), 3.23 (s, 3H), 2.28 - 2.03 (2s, 3H)。 (可互相轉化之阻轉異構物之混合物)
472		579.2	方法D， RT = 1.89 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.16 - 8.93 (m, 1H), 8.05 - 7.93 (m, 1H), 7.93 - 7.77 (m, 2H), 7.56 - 7.09 (m, 3H), 6.88 - 6.66 (m, 2H), 5.36 - 4.74 (m, 1H), 4.45 - 4.12 (m, 4H), 3.82 - 3.72 (2s, 3H), 3.72 - 3.51 (m, 3H), 3.23 (s, 3H), 2.26 - 2.02 (2s, 3H)。 (可互相轉化之阻轉異構物之混合物)

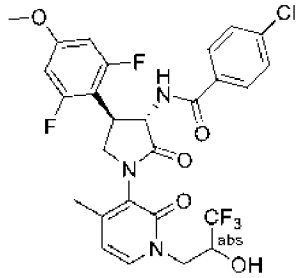
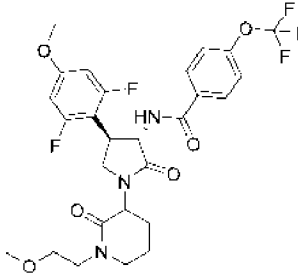
473		589.2	方法D， RT = 2.17 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.16 (d, J = 8.3 Hz, 1H), 8.07 (d, J = 4.6 Hz, 1H), 7.94 (d, J = 8.8 Hz, 2H), 7.77 (d, J = 4.6 Hz, 1H), 7.50 (d, J = 8.6 Hz, 2H), 6.79 (d, J = 10.8 Hz, 2H), 6.40 (tt, J = 56.0, 4.0 Hz, 1H), 5.07 (dd, J = 11.0, 8.3 Hz, 1H), 4.56 (td, J = 14.4, 4.0 Hz, 2H), 4.42 - 4.30 (m, 1H), 4.27 - 4.16 (m, 1H), 4.16 - 4.03 (m, 1H), 3.77 (s, 3H)。
474		571.3	方法D， RT = 2.00 min，97%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.05 (d, J = 8.1 Hz, 1H), 8.06 (d, J = 4.6 Hz, 1H), 7.87 (d, J = 8.8 Hz, 2H), 7.76 (d, J = 4.6 Hz, 1H), 7.34 (t, J = 73.6 Hz, 1H), 7.29 - 7.26 (m, 2H), 6.78 (d, J = 10.8 Hz, 2H), 6.40 (tt, J = 56.0, 4.0 Hz, 1H), 5.05 (dd, J = 11.0, 8.3 Hz, 1H), 4.55 (td, J = 14.3, 4.2 Hz, 2H), 4.39 - 4.29 (m, 1H), 4.26 - 4.15 (m, 1H), 4.15 - 4.02 (m, 1H), 3.76 (s, 3H)。

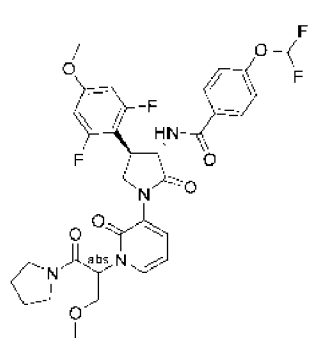
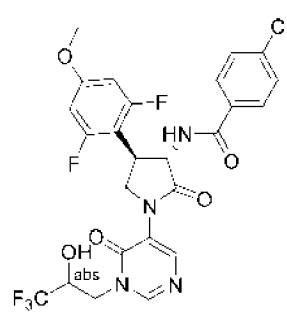
475		619.2	方法D， RT = 1.95 min，95%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.05 (d, J = 8.1 Hz, 1H), 8.04 (d, J = 4.4 Hz, 1H), 7.87 (d, J = 8.6 Hz, 2H), 7.74 (d, J = 4.6 Hz, 1H), 7.34 (t, J = 73.6 Hz, 1H), 7.29 - 7.26 (m, 2H), 6.78 (d, J = 11.0 Hz, 2H), 6.70 - 6.50 (brs, 1H), 5.04 (dd, J = 11.2, 7.8 Hz, 1H), 4.56 - 4.46 (m, 1H), 4.39 - 4.06 (m, 5H), 3.77 (s, 3H)。
476		595.2	方法D， RT = 1.74 min， 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.04 (d, J = 8.3 Hz, 1H), 8.05 (d, J = 4.4 Hz, 1H), 7.93 - 7.83 (m, 2H), 7.65 (d, J = 4.6 Hz, 1H), 7.35 (t, J = 73.6 Hz, 1H), 7.29 - 7.26 (m, 2H), 6.78 (d, J = 10.8 Hz, 2H), 5.32 - 5.22 (m, 1H), 5.05 (dd, J = 11.2, 8.6 Hz, 1H), 4.91 (t, J = 5.9 Hz, 1H), 4.33 - 4.25 (m, 1H), 4.19 - 4.12 (m, 1H), 4.15 - 4.06 (m, 1H), 3.77 (s, 3H), 3.71 - 3.57 (m, 4H), 3.20 (s, 3H)。

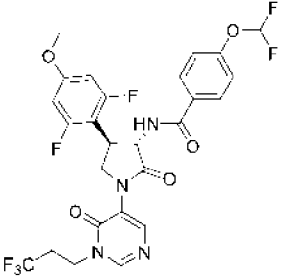
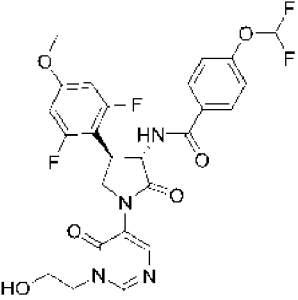
477		563.2	方法C， RT = 1.76 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.09 (d, J = 8.6 Hz, 1H), 8.04 (d, J = 4.6 Hz, 1H), 7.86 - 7.75 (m, 2H), 7.65 (d, J = 4.4 Hz, 1H), 7.57 (d, J = 8.6 Hz, 2H), 6.78 (d, J = 10.8 Hz, 2H), 5.35 - 5.24 (m, 1H), 5.07 (dd, J = 10.9, 8.4 Hz, 1H), 4.89 (t, J = 5.7 Hz, 1H), 4.37 - 4.27 (m, 1H), 4.22 - 4.04 (m, 2H), 3.77 (s, 3H), 3.72 - 3.57 (m, 4H), 3.21 (s, 3H)。
478		622.3	方法D， RT = 1.86 min，98%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.22 - 8.93 (m, 1H), 8.05 - 7.84 (m, 2H), 7.80 - 7.65 (m, 1H), 7.56 - 7.35 (m, 2H), 6.87 - 6.63 (m, 2H), 6.37 - 6.16 (m, 1H), 5.38 - 4.80 (m, 2H), 4.31 - 4.07 (m, 2H), 4.04 - 3.93 (m, 2H), 3.77 - 3.69 (2 s, 3H), 3.55 - 3.39 (m, 3H), 2.25 - 2.05 (2s, 3H), 1.99 - 1.84 (m, 2H), 1.77 - 1.60 (m, 2H)。(可互相轉化之阻轉異構物之混合物)

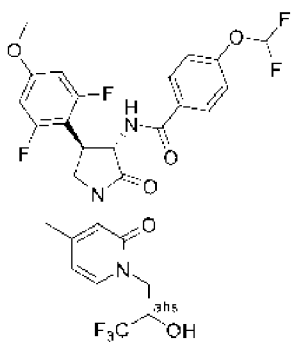
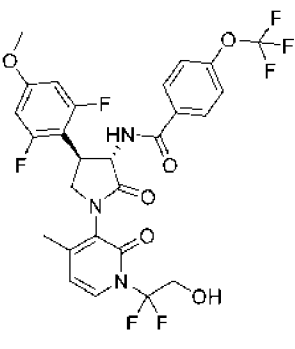
479		590.2	方法D， RT = 1.66 min，98%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.11 - 8.87 (m, 1H), 7.94 - 7.79 (m, 2H), 7.61 - 7.47 (m, 1H), 7.46 - 7.05 (m, 3H), 6.78 - 6.75 (m, 2H), 6.35 - 6.20 (m, 1H), 5.41 - 5.24 (m, 1H), 4.88 - 4.86 (m, 1H), 4.28 - 4.00 (m, 3H), 3.89 - 3.82 (m, 3H), 3.79 - 3.76 (2s, 3H) 3.50 - 3.47 (m, 1H), 2.47 - 2.37 (m, 1H), 2.24 - 2.04 (2s, 3H), 2.02 - 1.88 (m, 1H)。(可互相轉化之阻轉 異構物之混合物)
480		625.3	方法D， RT = 2.03 min， 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.07 (br d, J = 8.6 Hz, 1H), 8.13 (d, J = 6.1 Hz, 1H), 7.81 (br d, J = 8.6 Hz, 2H), 7.56 (d, J = 8.6 Hz, 2H), 6.89 - 6.67 (m, 3H), 5.20 - 5.11 (m, 1H), 4.88 (br s, 1H), 4.51 - 4.41 (m, 1H), 4.24 - 4.16 (m, 1H), 3.77 (s, 3H), 3.76 - 3.66 (m, 2H), 3.48 - 3.43 (m, 1H), 3.39 - 3.09 (m, 2H), 1.94 - 1.83 (m, 2H), 1.36 (s, 3H)。

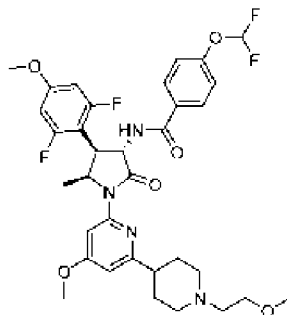
481		650.3	方法D， RT = 2.15 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.16 - 9.00 (m, 1H), 8.40 (d, J = 5.6 Hz, 1H), 7.82 (br d, J = 6.8 Hz, 2H), 7.56 (d, J = 8.3 Hz, 2H), 7.20 (d, J = 5.6 Hz, 1H), 6.78 (d, J = 11.0 Hz, 2H), 5.18 - 5.02 (m, 1H), 4.42 - 4.31 (m, 1H), 4.28 - 4.14 (m, 1H), 3.83 - 3.70 (m, 4H), 3.67 - 3.41 (m, 2H), 3.13 - 2.96 (m, 3H), 2.89 - 2.70 (m, 1H), 2.18 - 1.94 (m, 3H), 1.83 - 1.62 (m, 3H), 1.40 - 1.25 (m, 1H)。
482		707.2	方法D， RT = 1.83 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.18 (d, J = 8.0 Hz, 1H), 8.11 (dd, J = 4.8, 1.8 Hz, 1H), 8.01 - 7.94 (m, 2H), 7.84 (dd, J = 7.8, 1.8 Hz, 1H), 7.53 - 7.44 (m, 2H), 7.16 (dd, J = 7.5, 5.0 Hz, 1H), 6.80 (d, J = 10.5 Hz, 2H), 5.41 (dd, J = 6.0, 3.5 Hz, 1H), 5.12 - 5.05 (m, 1H), 4.70 - 4.59 (m, 4H), 4.29 - 4.14 (m, 2H), 4.10 - 3.98 (m, 4H), 3.80 - 3.74 (m, 5H), 3.51 - 3.69 (m, 1H), 3.30 (s, 3H)。

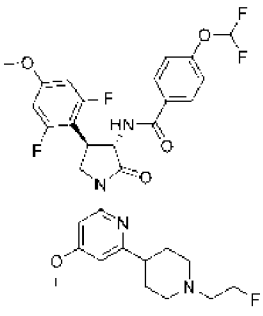
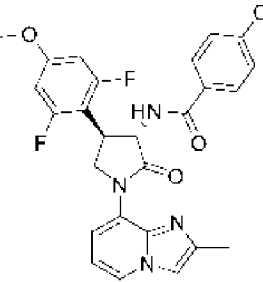
483		600.2	方法D， RT = 1.84 min，97%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.23 - 8.89 (m, 1H), 7.94 - 7.75 (m, 2H), 7.67 - 7.42 (m, 3H), 6.87 - 6.60 (m, 3H), 6.38 - 6.16 (m, 1H), 5.39 - 4.80 (m, 1H), 4.48 - 4.03 (m, 4H), 3.86 - 3.78 (m, 1H), 3.77-3.74 (2s, 3H), 3.58 - 3.45 (m, 1H), 2.26 - 1.96 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)
484		586.2	方法D， RT = 2.007 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.05 - 8.97 (m, 1H), 7.92 (d, J = 8.8 Hz, 2H), 7.47 (d, J = 8.6 Hz, 2H), 6.78 - 6.70 (m, 2H), 5.02 - 4.94 (m, 1H), 4.66 - 4.57 (m, 1H), 3.96 - 3.85 (m, 1H), 3.75 (s, 3H), 3.59 - 3.52 (m, 1H), 3.46 - 3.41 (m, 4H), 3.41 - 3.35 (m, 3H), 3.23 (s, 3H), 2.04 - 1.82 (m, 4H)。

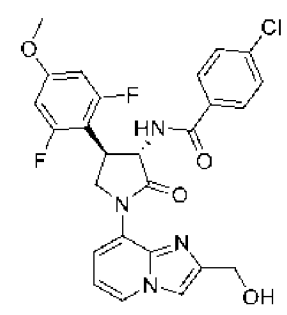
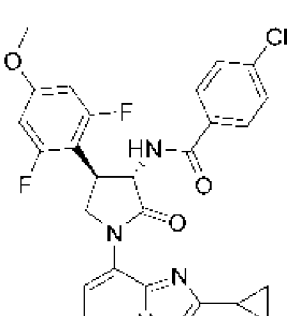
485		661.3	方法D， RT = 1.93 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.01 (d, J = 8.3 Hz, 1H), 7.88 (d, J = 8.8 Hz, 2H), 7.77 (dd, J = 6.8, 1.7 Hz, 1H), 7.60 (dd, J = 7.2, 1.7 Hz, 1H), 7.35 (t, J = 73.6 Hz, 1H), 7.30 - 7.23 (m, 2H), 6.80 - 6.74 (m, 2H), 6.40 (t, J = 7.0 Hz, 1H), 5.92 (dd, J = 8.6, 5.1 Hz, 1H), 5.09 (dd, J = 10.9, 8.4 Hz, 1H), 4.13 - 4.05 (m, 1H), 4.03 - 3.95 (m, 1H), 3.95 - 3.83 (m, 3H), 3.76 (s, 3H), 3.65 - 3.53 (m, 2H), 3.34 - 3.28 (m, 2H), 3.27 (s, 3H), 1.96 - 1.85 (m, 2H), 1.82 - 1.68 (m, 2H) °
486		587.2	方法D， RT = 1.862 min， 98.9%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.06 (br s, 1H), 8.45 (s, 1H), 8.19 (s, 1H), 7.83 (d, J = 8.6 Hz, 2H), 7.56 (d, J = 8.6 Hz, 2H), 6.78 (d, J = 10.5 Hz, 2H), 5.10 (d, J = 11.2 Hz, 1H), 4.43 - 4.29 (m, 2H), 4.12 (br dd, J = 10.3, 9.5 Hz, 1H), 4.05 - 3.87 (m, 3H), 3.76 (s, 3H), 3.35 - 3.32 (m, 1H) °

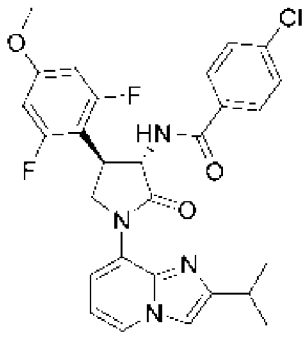
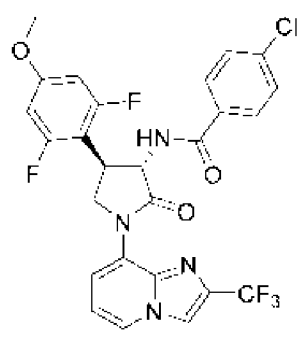
487		603.2	方法D , RT = 1.791 min , 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.03 (d, J = 8.6 Hz, 1H), 8.56 (s, 1H), 8.17 (s, 1H), 7.96 - 7.79 (m, 2H), 7.34 (t, J = 74.0 Hz, 1H), 7.29 - 7.24 (m, 2H), 6.77 (d, J = 10.8 Hz, 2H), 5.12 (dd, J = 11.2, 8.6 Hz, 1H), 4.23 (t, J = 7.2 Hz, 2H), 4.17 - 4.05 (m, 1H), 4.05 - 3.87 (m, 2H), 3.76 (s, 3H), 2.92 - 2.72 (m, 2H) 。
488		551.2	方法D , RT = 1.441 min , 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.01 (d, J = 8.6 Hz, 1H), 8.37 (s, 1H), 8.13 (s, 1H), 7.95 - 7.83 (m, 2H), 7.34 (t, J = 73.0 Hz, 1H), 7.28 - 7.25 (m, 2H), 6.76 (d, J = 10.8 Hz, 2H), 5.11 (dd, J = 11.0, 8.6 Hz, 1H), 4.17 - 4.06 (m, 1H), 4.02 (t, J = 5.1 Hz, 2H), 3.99 - 3.91 (m, 3H), 3.76 (s, 3H), 3.68 - 3.60 (m, 2H) 。

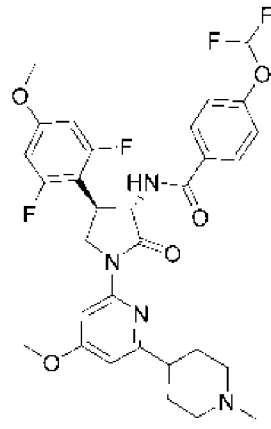
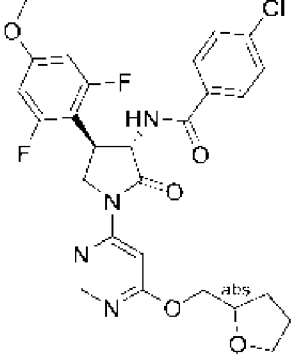
489		632.3	方法D， RT = 1.77 min，98%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.12 - 8.89 (m, 1H), 7.99 - 7.79 (m, 2H), 7.61-7.52 (m, 1H), 7.55 - 7.09 (m, 3H), 6.86 - 6.55 (m, 3H), 6.235 - 6.25 (m, 1H), 5.34 - 4.77 (m, 1H), 4.47 - 4.23 (m, 3H), 4.19 - 4.10 (m, 1H), 3.82 - 3.79 (m, 1H), 3.77 - 3.73 (2s, 3H), 3.57 - 3.47 (m, 1H), 2.24 - 2.00 (2s, 3H)。(可互相轉化之阻轉異 構物之混合物)
490		618.2	方法F， RT = 1.999 min，93%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.23 - 9.03 (m, 1H), 8.01 - 7.87 (m, 2H), 7.71 - 7.62 (m, 1H), 7.54 - 7.41 (m, 2H), 6.85 - 6.68 (m, 2H), 6.42 - 6.28 (m, 1H), 6.01 - 5.86 (m, 1H), 5.33 - 4.77 (m, 1H), 4.32 - 4.17 (m, 3H), 4.14 - 4.02 (m, 1H), 3.78 - 3.76 (2s, 3H), 3.61 - 3.54 (m, 1H), 2.26 - 2.08 (2s, 3H)。 (可互相轉化之阻轉異構物之 混合物)

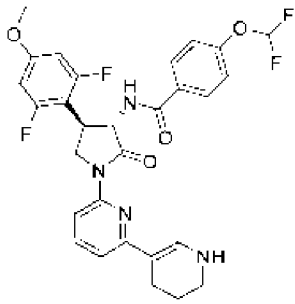
491		675.2	方法D , RT = 1.742 min , 97.5%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 8.89 (d, J = 8.5 Hz, 1H), 7.89 (d, J = 8.8 Hz, 2H), 7.82 (d, J = 2.0 Hz, 1H), 7.34 (t, J = 76.0 Hz, 1H), 7.27 (d, J = 8.5 Hz, 2H), 6.80 (d, J = 11.5 Hz, 2H), 6.75 (d, J = 2.0 Hz, 1H), 5.66 (dd, J = 12.6, 8.4 Hz, 1H), 4.97 (quin, J = 7.1 Hz, 1H), 4.31 (dd, J = 12.6 , 7.9 Hz, 1H), 3.82 (s, 3H), 3.79 (s, 3H), 3.53 - 3.40 (m, 2H), 3.25 (s, 3H), 3.09 - 2.87 (m, 2H), 2.65 - 2.54 (m, 2H), 2.47 - 2.38 (m, 1H), 2.16 - 1.95 (m, 2H), 1.88 - 1.67 (m, 4H), 1.20 (br d, J = 6.3 Hz, 3H) °
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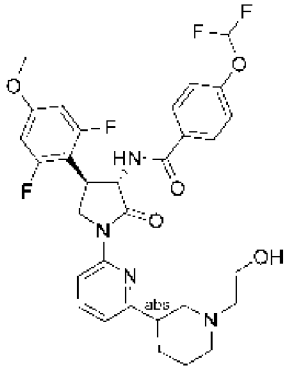
492		649.2	方法D , RT = 1.963 min , 94.7%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.11 (d, <i>J</i> = 8.3 Hz, 1H), 7.92 - 7.86 (m, 2H), 7.84 (d, <i>J</i> = 2.0 Hz, 1H), 7.34 (t, <i>J</i> = 76.0 Hz, 1H), 7.29 (d, <i>J</i> = 8.3 Hz, 2H), 6.81 (d, <i>J</i> = 10.8 Hz, 2H), 6.75 (d, <i>J</i> = 2.0 Hz, 1H), 5.06 (dd, <i>J</i> = 10.5, 8.3 Hz, 1H), 4.86 (dt, <i>J</i> = 47.2, 4.5 Hz, 2H), 4.44 - 4.43 (m, 1H), 4.47 (br t, <i>J</i> = 9.9 Hz, 1H), 4.15 (q, <i>J</i> = 9.9 Hz, 1H), 3.97 (br t, <i>J</i> = 10.5 Hz, 1H), 3.85 (s, 3H), 3.79 (s, 3H), 3.67 - 3.51 (m, 4H), 3.20 - 3.04 (m, 1H), 2.96 - 2.83 (m, 1H), 2.15 - 1.96 (m, 4H) °
493		511.2	方法C , RT = 1.465 min , 98.3 %	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.14 (d, <i>J</i> = 8.5 Hz, 1H), 8.43 (d, <i>J</i> = 6.8 Hz, 1H), 7.86 (d, <i>J</i> = 8.5 Hz, 2H), 7.77 (s, 1H), 7.58 (d, <i>J</i> = 8.5 Hz, 2H), 7.42 (d, <i>J</i> = 7.5 Hz, 1H), 6.90 (t, <i>J</i> = 7.1 Hz, 1H), 6.80 (d, <i>J</i> = 10.8 Hz, 2H), 5.20 (dd, <i>J</i> = 11.0, 8.5 Hz, 1H), 4.55 - 4.46 (m, 1H), 4.33 (br t, <i>J</i> = 9.9 Hz, 1H), 4.25 - 4.13 (m, 1H), 3.78 (s, 3H), 2.36 (s, 3H) °

494		527.12	方法C， RT = 1.387 min， 95.6%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.13 (d, <i>J</i> = 8.5 Hz, 1 H), 8.49 (d, <i>J</i> = 6.5 Hz, 1 H), 7.92 - 7.82 (m, 3H), 7.58 (d, <i>J</i> = 8.5 Hz, 2H), 7.47 (d, <i>J</i> = 7.25 Hz, 1H), 6.93 (t, <i>J</i> = 7.1 Hz, 1H), 6.85 - 6.75 (m, 2H), 5.26 - 5.17 (m, 2H), 4.62 (d, <i>J</i> = 4.7 Hz, 2H), 4.59 - 4.48 (m, 1H), 4.37 - 4.17 (m, 2H), 3.78 (s, 3 H)。
495		537.14	方法C， RT = 1.635 min，100 %	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.12 (d, <i>J</i> = 8.8 Hz, 1H), 8.38 (dd, <i>J</i> = 6.8, 1.0 Hz, 1H), 7.90 - 7.81 (m, 2H), 7.77 (s, 1H), 7.62 - 7.49 (m, 2H), 7.39 (dd, <i>J</i> = 7.3, 1.0 Hz, 1H), 6.92 - 6.86 (m, 1H), 6.80 (d, <i>J</i> = 10.8 Hz, 2H), 5.17 (dd, <i>J</i> = 11.0, 8.8 Hz, 1H), 4.51 - 4.42 (m, 1H), 4.35 (t, <i>J</i> = 11.0 Hz, 1H), 4.25 - 4.13 (m, 1H), 3.78 (s, 3H), 2.08 - 1.96 (m, 1H), 0.96 - 0.89 (m, 2H), 0.84 - 0.76 (m, 2H)。

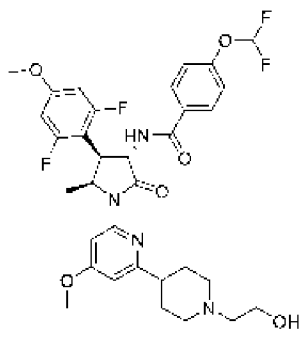
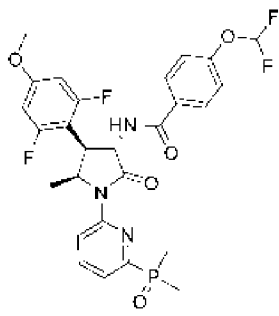
496		539	方法C， RT = 1.685 min，100 %	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.13 (d, <i>J</i> = 8.8 Hz, 1H), 8.42 (dd, <i>J</i> = 6.6, 1.1 Hz, 1H), 7.92 - 7.80 (m, 2H), 7.76 (s, 1H), 7.62 - 7.51 (m, 2H), 7.42 (dd, <i>J</i> = 7.5, 1.1 Hz, 1H), 6.90 (t, <i>J</i> = 7.0 Hz, 1H), 6.80 (d, <i>J</i> = 10.8 Hz, 2H), 5.20 (dd, <i>J</i> = 11.1, 8.6 Hz, 1H), 4.60 - 4.48 (m, 1H), 4.37 (t, <i>J</i> = 10.3 Hz, 1H), 4.21 (q, <i>J</i> = 10.3 Hz, 1H), 3.77 (s, 3H), 3.04 - 2.97 (m, 1H), 1.29 (d, <i>J</i> = 6.8 Hz, 6H)。
497		565	方法C， RT = 2.034 min，94.3 %	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.14 (d, <i>J</i> = 8.5 Hz, 1H), 8.65 (d, <i>J</i> = 1.0 Hz, 1H), 8.57 (dd, <i>J</i> = 6.8, 1.0 Hz, 1H), 7.93 - 7.80 (m, 2H), 7.70 (dd, <i>J</i> = 7.5, 1.0 Hz, 1H), 7.62 - 7.51 (m, 2H), 7.21 - 7.09 (m, 1H), 6.80 (d, <i>J</i> = 10.8 Hz, 2H), 5.19 (dd, <i>J</i> = 10.8, 8.6 Hz, 1H), 4.54 - 4.45 (m, 1H), 4.37 - 4.29 (m, 1H), 4.29 - 4.19 (m, 1H), 3.77 (s, 3H)。

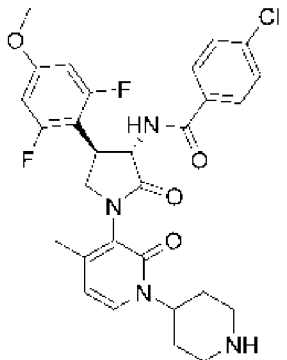
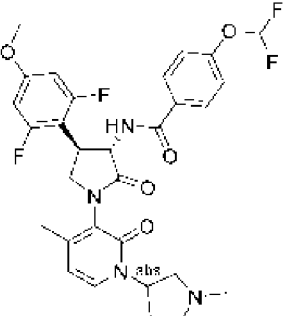
498		617.2	方法D , RT = 1.564 min , 98.7%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.09 (d, <i>J</i> = 8.3 Hz, 1H), 7.95 - 7.84 (m, 2H), 7.80 (d, <i>J</i> = 2.2 Hz, 1H), 7.36 (t, <i>J</i> = 74.1 Hz, 1H), 7.29 (d, <i>J</i> = 8.3 Hz, 2H), 6.80 (d, <i>J</i> = 11.0 Hz, 2H), 6.70 (d, <i>J</i> = 2.2 Hz, 1H), 5.07 (dd, <i>J</i> = 11.0, 8.3 Hz, 1H), 4.47 (t, <i>J</i> = 9.8 Hz, 1H), 4.16 - 4.05 (m, 1H), 4.00 - 3.90 (m, 1H), 3.83 (s, 3H), 3.78 (s, 3H), 2.84 - 2.80 (m, 2H), 2.16 (s, 3H), 1.98 - 1.86 (m, 3H), 1.83 - 1.71 (m, 4H) °
499		559.15	方法C , RT = 2.043 min , 100 %	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.17 (d, <i>J</i> = 8.0 Hz, 1H), 8.65 (d, <i>J</i> = 0.8 Hz, 1H), 7.88 - 7.74 (m, 2H), 7.66 (d, <i>J</i> = 0.8 Hz, 1H), 7.62 - 7.52 (m, 2H), 6.78 (d, <i>J</i> = 10.8 Hz, 2H), 5.05 (dd, <i>J</i> = 11.1, 8.1 Hz, 1H), 4.45 (t, <i>J</i> = 9.8 Hz, 1H), 4.38 - 4.24 (m, 2H), 4.21 - 4.07 (m, 2H), 4.00 - 3.89 (m, 1H), 3.82 - 3.72 (m, 4H), 3.70 - 3.59 (m, 1H), 2.04 - 1.93 (m, 1H), 1.92 - 1.75 (m, 2H), 1.71 - 1.59 (m, 1H) °

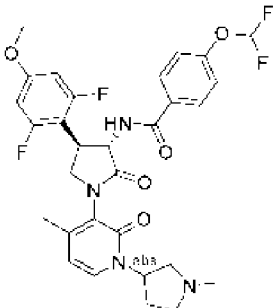
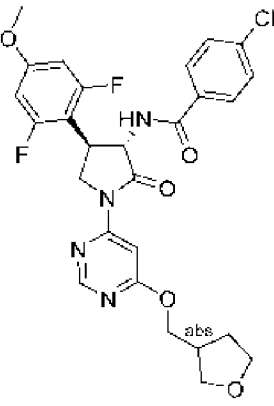
500		571.2	方法D , RT = 1.489 min , 98%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.09 (d, J = 8.3 Hz, 1H), 8.19 (d, J = 8.3 Hz, 1H), 7.89 (d, J = 8.8 Hz, 2H), 7.84 (t, J = 8.0 Hz, 1H), 7.35 (t, J = 72.5 Hz, 1H), 7.36 - 7.23 (m, 3H), 6.88 - 6.72 (m, 3H), 5.08 (dd, J = 10.8, 8.3 Hz, 1H), 4.49 (t, J = 9.9 Hz, 1H), 4.13 (q, J = 9.9 Hz, 1H), 4.02 - 3.96 (m, 1H), 3.78 (s, 3H), 3.77 - 3.72 (m, 2H), 3.54 - 3.49 (brs, 1H), 2.92 - 1.89 (m, 2H), 2.28 - 2.24 (m, 2H) 。
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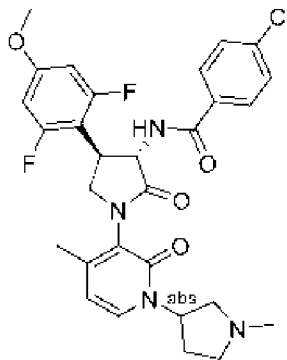
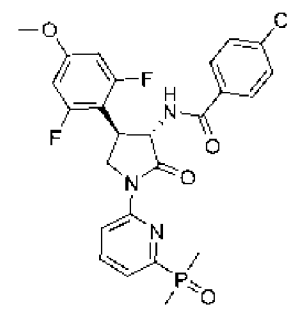
501		617.3	方法D , RT = 1.473 min , 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.09 (d, <i>J</i> = 8.5 Hz, 1H), 8.17 (d, <i>J</i> = 8.5 Hz, 1H), 7.89 (d, <i>J</i> = 9.0 Hz, 2H), 7.80 (t, <i>J</i> = 7.8 Hz, 1H), 7.35 (t, <i>J</i> = 73.6 Hz, 1H), 7.29 (d, <i>J</i> = 8.5 Hz, 2H), 7.12 (d, <i>J</i> = 7.5 Hz, 1H), 6.80 (m, 2H), 5.08 (dd, <i>J</i> = 10.8, 8.3 Hz, 1H), 4.49 (t, <i>J</i> = 9.8 Hz, 1H), 4.34 - 4.30 (m, 1H), 4.12 (q, <i>J</i> = 9.8 Hz, 1H), 4.00 - 3.89 (m, 1H), 3.79 (s, 3H), 3.51 - 3.47 (m, 2H), 3.04 - 3.00 (m, 1H), 2.88 - 2.84 (m, 2H), 2.43 - 2.39 (m, 2H), 2.17 - 2.12 (m, 1H), 2.02 - 1.92 (m, 1H), 1.90 - 1.86 (m, 1H), 1.74 - 1.45 (m, 3H) °
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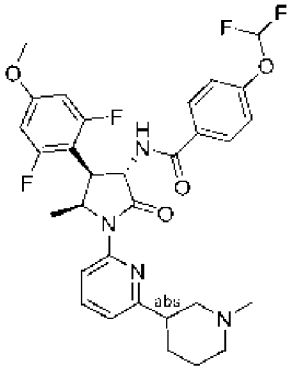
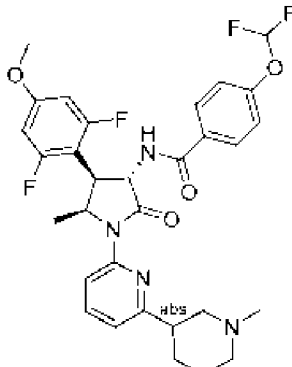
502		617.2	方法D , RT = 1.494 min , 95%	¹H NMR (400 MHz, DMSO-d₆) δ = 9.09 (d, <i>J</i> = 8.5 Hz, 1H), 8.18 (d, <i>J</i> = 8.0 Hz, 1H), 7.90 (d, <i>J</i> = 8.5 Hz, 2H), 7.80 (t, <i>J</i> = 8.0 Hz, 1H), 7.29 (d, <i>J</i> = 8.5 Hz, 2H), 7.35 (t, <i>J</i> = 73.6 Hz, 1H), 7.13 (d, <i>J</i> = 7.5 Hz, 1H), 6.80 (d, <i>J</i> = 11.0 Hz, 2H), 5.08 (dd, <i>J</i> = 10.8, 8.3 Hz, 1H), 4.48 (t, <i>J</i> = 9.5 Hz, 2H), 4.13 (q, <i>J</i> = 10.0 Hz, 1H), 4.03 - 3.92 (m, 1H), 3.79 (s, 3H), 3.52 (s, 2H), 3.06 - 3.02 (m, 1H), 2.96 - 2.82 (m, 2H), 2.65 - 2.55 (m, 1H), 2.48 - 2.41 (m, 1H), 2.31 - 2.00 (m, 2H), 1.92 - 1.83 (m, 1H), 1.78 - 1.50 (m, 3H) °
503		553.2	方法D , RT = 2.977 min , 99%	¹H NMR (400 MHz, DMSO-d₆) δ = 9.09 - 9.07 (d, <i>J</i> = 8.4 Hz, 1H), 8.48 (s, 1H), 8.05 (s, 1H), 7.79 (d, <i>J</i> = 8.5 Hz, 2H), 7.54 (d, <i>J</i> = 8.5 Hz, 2H), 6.76 (d, <i>J</i> = 11.0 Hz, 2H), 6.36 (t, <i>J</i> = 48.0 Hz, 1H), 5.10 (d, <i>J</i> = 11.5 Hz, 1H), 4.57 - 4.31 (m, 3H), 3.74 (s, 3H), 3.64 (t, <i>J</i> = 10.5 Hz, 1H), 1.03 (d, <i>J</i> = 6.0 Hz, 3H) °

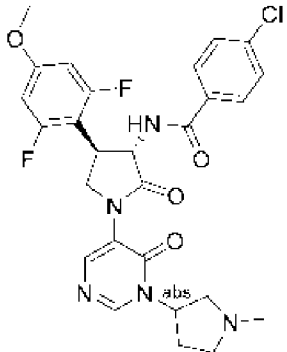
504		661.35	方法D , RT = 1.605 min , 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.92 - 8.86 (m, 1H), 7.93 - 7.86 (m, 2H), 7.84 - 7.79 (m, 1H), 7.34 (t, <i>J</i> = 76.0 Hz, 1H), 7.31 - 7.22 (m, 2H), 6.84 - 6.76 (m, 2H), 6.69 (d, <i>J</i> = 2.0 Hz, 1H), 5.67 (dd, <i>J</i> = 12.8, 8.3 Hz, 1H), 5.02 - 4.92 (m, 1H), 4.39 - 4.26 (m, 2H), 3.82 (s, 3H), 3.79 (s, 3H), 3.55 - 3.47 (m, 2H), 2.99 - 2.92 (m, 2H), 2.63 - 2.55 (m, 2H), 2.42 - 2.36 (m, 2H), 2.09 - 1.97 (m, 1H), 1.82 - 1.66 (m, 4H), 1.19 (d, <i>J</i> = 6.6 Hz, 3H) °
505		580.2	方法D , RT = 1.636 min , 98%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.94 (d, <i>J</i> = 8.5 Hz, 1H), 8.49 (dd, <i>J</i> = 8.5, 1.3 Hz, 1H), 8.05 (m, 1H), 7.95 - 7.82 (m, 2H), 7.77 - 7.65 (m, 1H), 7.33 (t, <i>J</i> = 74.6 Hz, 1H), 7.26 (d, <i>J</i> = 8.8 Hz, 2H), 6.86 - 6.69 (m, 2H), 5.66 (dd, <i>J</i> = 12.5, 8.3 Hz, 1H), 5.04 - 4.91 (m, 1H), 4.35 (dd, <i>J</i> = 12.5, 7.8 Hz, 1H), 3.78 (s, 3H), 1.68 (d, <i>J</i> = 13.6 Hz, 3H), 1.57 (d, <i>J</i> = 13.6 Hz, 3H), 1.22 (d, <i>J</i> = 6.8 Hz, 3H) °

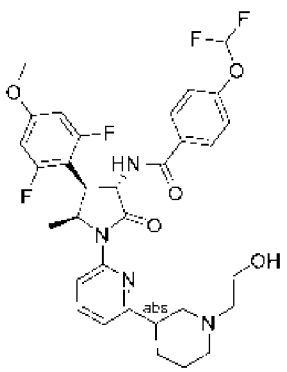
506		571.2	方法C， RT = 1.427 min，92%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.22 - 8.93 (m, 1H), 7.91 - 7.77 (m, 2H), 7.70 - 7.60 (m, 1H), 7.60 - 7.43 (m, 2H), 6.85 - 6.67 (m, 2H), 6.35 - 6.14 (m, 1H), 5.36 - 4.85 (m, 1H), 4.81 - 4.65 (m, 1H), 4.29 - 4.05 (m, 2H), 3.81 - 3.72 (2s, 3H), 3.52 - 3.48 (m, 2H), 3.15 - 3.06 (m, 2H), 2.66 - 2.56 (m, 2H), 2.48 - 2.44 (m, 1H), 2.24 - 2.01 (2s, 3H), 1.77 - 1.65 (m, 3H)。(可互相轉化之阻轉異構物之混合物)
507		603.2	方法D， RT = 1.531 min，100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.11 - 8.90 (m, 1H), 7.95 - 7.83 (m, 2H), 7.38 - 7.22 (m, 4H), 6.83 - 6.73 (m, 2H), 6.44 - 6.32 (m, 1H), 5.30 - 4.96 (m, 2H), 4.35 - 4.03 (m, 2H), 3.98 - 3.80 (m, 2H), 3.77 (s, 3H), 3.63 - 3.49 (m, 2H), 3.15 - 3.06 (m, 1H), 2.93 - 2.88 (2s, 3H), 2.24 - 2.09 (2s, 3H), 1.26 - 1.15 (m, 2H)。(可互相轉化之阻轉異構物之混合物)

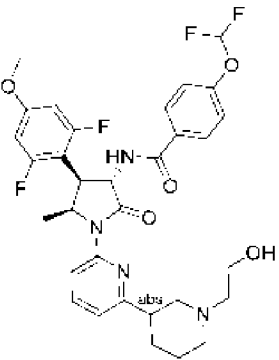
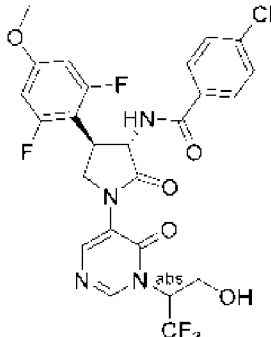
508		603.2	方法D， RT = 1.503 min，96%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.10 - 8.93 (m, 1H), 7.91 - 7.86 (m, 2H), 7.76 - 7.63 (m, 1H), 7.37 - 7.24 (m, 3H), 6.78 (m, 2H), 6.43 - 6.30 (m, 1H), 5.33 - 4.93 (m, 2H), 4.34 - 4.11 (m, 2H), 3.94 - 3.80 (m, 2H), 3.77 (s, 3H), 3.63 - 3.49 (m, 2H), 3.19 - 3.05 (m, 1H), 2.93 - 2.88 (2s, 3H), 2.25 - 2.07 (2s, 3H), 1.27 - 1.14 (m, 2H)。 (可互相轉化之阻轉異構物之混合物)
509		559.15	方法C， RT = 2.012 min，100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.18 (br d, J = 7.8 Hz, 1H), 8.65 (s, 1H), 7.83 (d, J = 8.5 Hz, 2H), 7.66 (s, 1H), 7.57 (d, J = 8.5 Hz, 2H), 6.78 (d, J = 10.8 Hz, 2H), 5.08 - 4.97 (m, 1H), 4.45 (t, J = 9.8 Hz, 1H), 4.39 - 4.31 (m, 1H), 4.29 - 4.22 (m, 1H), 4.14 (q, J = 9.8 Hz, 1H), 3.99 - 3.91 (m, 1H), 3.81 - 3.71 (m, 5H), 3.64 (q, J = 7.8 Hz, 1H), 3.53 (dd, J = 8.6, 5.6 Hz, 1H), 2.72 - 2.64 (m, 1H), 2.07 - 1.95 (m, 1H), 1.71 - 1.59 (m, 1H)。

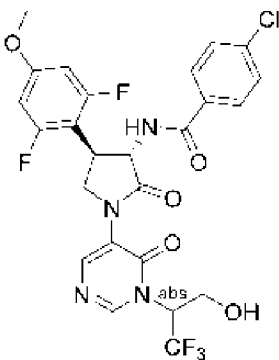
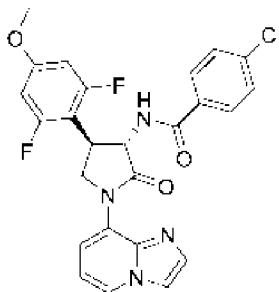
510		572.2	方法D， RT = 1.564 min，94%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.20 - 8.94 (m, 1H), 7.91 - 7.78 (m, 2H), 7.76 - 7.64 (m, 1H), 7.62 - 7.50 (m, 2H), 6.85 - 6.66 (m, 2H), 6.46 - 6.29 (m, 1H), 5.28 - 4.87 (m, 2H), 4.31 - 4.06 (m, 2H), 3.94 - 3.75 (m, 2H), 3.77 (s, 3H), 3.61 - 3.43 (m, 2H), 3.17 - 3.13 (m, 1H), 2.89 (s, 3H), 2.55 - 2.49 (m, 2H), 2.28 - 1.99 (2s, 3H)。 (可互相轉化之阻轉異構物之混合物)
511		534.1	方法D， RT = 1.671 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.17 (d, J = 8.0 Hz, 1H), 8.47 (dd, J = 8.5, 1.3 Hz, 1H), 8.05 (m, 1H), 7.91 - 7.80 (m, 2H), 7.73 (dd, J = 6.9, 5.9 Hz, 1H), 7.62 - 7.49 (m, 2H), 6.80 (d, J = 10.5 Hz, 2H), 5.09 (dd, J = 10.9, 8.1 Hz, 1H), 4.54 (t, J = 9.5 Hz, 1H), 4.15 (q, J = 9.9 Hz, 1H), 4.03 - 3.89 (m, 1H), 3.78 (s, 3H), 1.68 (d, J = 13.6 Hz, 3H), 1.57 (d, J = 13.6 Hz, 3H)。

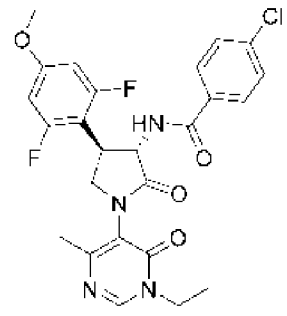
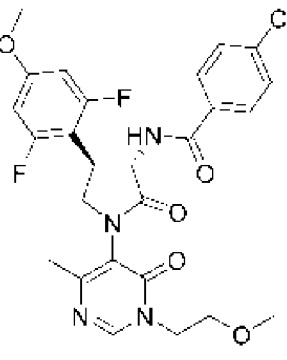
512		601.2	方法D , RT = 1.661 min , 94%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 8.91 (d, <i>J</i> = 8.5 Hz, 1H), 8.18 (d, <i>J</i> = 8.3 Hz, 1H), 7.94 - 7.85 (m, 2H), 7.80 (t, <i>J</i> = 7.9 Hz, 1H), 7.34 (t, <i>J</i> = 75.4 Hz, 1H), 7.78 - 7.15 (m, 2H), 7.12 (d, <i>J</i> = 7.5 Hz, 1H), 6.80 (d, <i>J</i> = 11.5 Hz, 2H), 5.65 (dd, <i>J</i> = 12.6, 8.4 Hz, 1H), 5.01 - 4.91 (m, 1H), 4.32 (dd, <i>J</i> = 12.5, 8.3 Hz, 1H), 3.78 (s, 3H), 3.09 - 2.79 (m, 3H), 2.36 - 2.28 (m, 4H), 2.11 - 2.01 (m, 1H), 1.91 - 1.87 (m, 1H), 1.78 - 1.71 (m, 1H), 1.68 - 1.44 (m, 2H), 1.21 (d, <i>J</i> = 6.5 Hz, 3H) 。
513		601.3	方法D , RT = 1.657 min , 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 8.91 (d, <i>J</i> = 8.3 Hz, 1H), 8.19 (d, <i>J</i> = 8.3 Hz, 1H), 7.94 - 7.85 (m, 2H), 7.81 (t, <i>J</i> = 8.0 Hz, 1H), 7.28 - 7.21 (m, 2H), 7.42 (t, <i>J</i> = 73.8 Hz, 1H), 7.17 - 7.07 (m, 1H), 6.89 - 6.71 (m, 2H), 5.64 (dd, <i>J</i> = 12.4, 8.1 Hz, 1H), 5.02 - 4.88 (m, 1H), 4.32 (dd, <i>J</i> = 12.6, 7.9 Hz, 1H), 3.78 (s, 3H), 3.08 - 2.86 (m, 3H), 2.41 - 2.27 (m, 4H), 2.23 - 2.08 (m, 1H), 1.97 - 1.85 (m, 1H), 1.81 - 1.42 (m, 3H), 1.22 (d, <i>J</i> = 6.5 Hz, 3H) 。

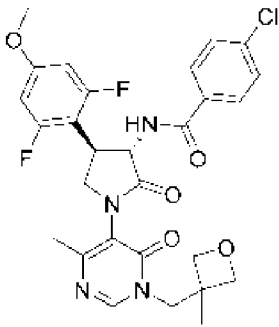
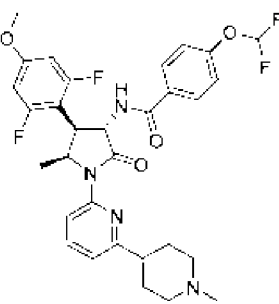
514		558.1	方法D , RT = 1.464 min , 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.07 (d, <i>J</i> = 8.8 Hz, 1H), 8.63 (s, 1H), 8.12 (s, 1H), 7.88 - 7.75 (m, 2H), 7.63 - 7.48 (m, 2H), 6.77 (d, <i>J</i> = 10.8 Hz, 2H), 5.25 - 5.17 (m, 1H), 5.11 (dd, <i>J</i> = 11.1, 8.4 Hz, 1H), 4.16 - 4.05 (m, 1H), 3.96 (d, <i>J</i> = 9.5 Hz, 2H), 3.76 (s, 3H), 3.13 - 3.03 (m, 1H), 3.00 - 2.88 (m, 1H), 2.63 - 2.50 (m, 2H), 2.47 - 2.38 (m, 1H), 2.33 (s, 3H), 1.93 - 1.89 (m, 1H) °
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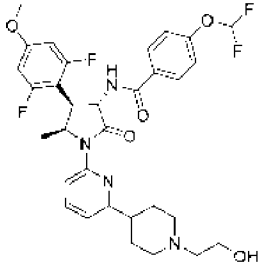
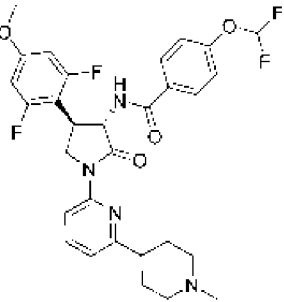
515		631.3	方法C , RT = 1.553 min , 94%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 8.91 (d, J = 7.8 Hz, 1H), 8.18 (d, J = 8.5 Hz, 1H), 7.90 (d, J = 8.8 Hz, 2H), 7.79 (t, J = 7.9 Hz, 1H), 7.34 (t, J = 73.5 Hz, 1H), 7.27 (d, J = 8.8 Hz, 2H), 7.12 (d, J = 7.8 Hz, 1H), 6.86 - 6.74 (m, 2H), 5.66 (dd, J = 12.5, 8.3 Hz, 1H), 5.00 - 4.90 (m, 1H), 4.42 - 4.39 (m, 1H), 4.32 (dd, J = 12.6, 8.4 Hz, 1H), 3.79 (s, 3H), 3.52 - 3.49 (m, 2H), 3.07 (d, J = 10.8 Hz, 1H), 2.94 - 2.83 (m, 2H), 2.47 - 2.44 (m, 2H), 2.21 - 2.13 (m, 1H), 2.06 - 1.98 (m, 1H), 1.92 - 1.85 (m, 1H), 1.72 - 1.68 (m, 1H), 1.64 - 1.46 (m, 2H), 1.22 (d, J = 6.8 Hz, 3H) °
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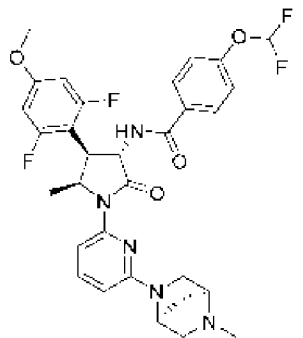
516		631.2	方法D， RT = 1.642 min，98%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.34 (s, 1H), 8.93 (s, 1H), 8.32 - 8.23 (m, 1H), 7.89 (d, <i>J</i> = 9.0 Hz, 3H), 7.34 (t, <i>J</i> = 72.5 Hz, 1H), 7.27 (d, <i>J</i> = 8.8 Hz, 2H), 6.82 (d, <i>J</i> = 11.5 Hz, 2H), 5.65 - 5.60 (m, 1H), 5.33 - 5.29 (m, 1H), 5.01 - 4.95 (m, 1H), 4.37 - 4.33 (m, 1H), 3.79 (s, 3H), 3.76 - 3.71 (m, 2H), 3.52 - 3.49 (m, 1H), 3.24 - 3.19 (m, 4H), 2.97 - 2.91 (m, 2H), 2.04 - 1.84 (m, 4H), 1.22 (d, <i>J</i> = 6.8 Hz, 3H)。
517		587.1	方法D， RT = 1.683 min，100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.09 (d, <i>J</i> = 8.6 Hz, 1H), 8.45 (s, 1H), 8.18 (s, 1H), 7.89 - 7.76 (m, 2H), 7.63 - 7.46 (m, 2H), 7.15 - 6.85 (br s, 1H), 6.78 (d, <i>J</i> = 10.8 Hz, 2H), 5.11 (dd, <i>J</i> = 10.6, 8.7 Hz, 1H), 4.45 - 4.27 (m, 2H), 4.18 - 4.07 (m, 1H), 4.07 - 3.89 (m, 3H), 3.77 (s, 3H)。

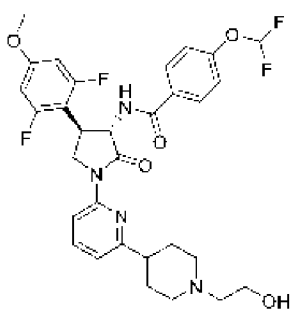
518		587.1	方法D， RT = 1.684 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.09 (d, <i>J</i> = 8.3 Hz, 1H), 8.46 (s, 1H), 8.20 (s, 1H), 7.84 (d, <i>J</i> = 8.6 Hz, 2H), 7.63 - 7.48 (m, 2H), 7.15 - 6.85 (br s, 1H), 6.78 (d, <i>J</i> = 10.8 Hz, 2H), 5.11 (dd, <i>J</i> = 10.8, 8.8 Hz, 1H), 4.45 - 4.25 (m, 2H), 4.19 - 4.08 (m, 1H), 4.08 - 3.87 (m, 3H), 3.77 (s, 3H)。
519		497.11	方法C， RT = 1.449 min，98%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.14 (d, <i>J</i> = 8.5 Hz, 1H), 8.53 (dd, <i>J</i> = 6.8, 1.0 Hz, 1H), 8.04 (d, <i>J</i> = 1.3 Hz, 1H), 7.90 - 7.79 (m, 2H), 7.61 (d, <i>J</i> = 1.0 Hz, 1H), 7.60 - 7.52 (m, 2H), 7.48 (dd, <i>J</i> = 7.4, 1.0 Hz, 1H), 6.97 (t, <i>J</i> = 7.0 Hz, 1H), 6.79 (d, <i>J</i> = 10.8 Hz, 2H), 5.20 (dd, <i>J</i> = 11.3, 8.5 Hz, 1H), 4.54 - 4.46 (m, 1H), 4.41 (t, <i>J</i> = 9.9 Hz, 1H), 4.21 (q, <i>J</i> = 10.1 Hz, 1H), 3.77 (s, 3H)。

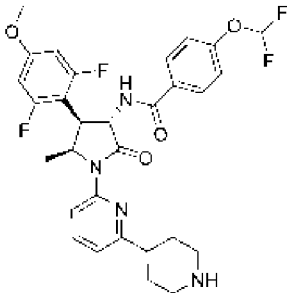
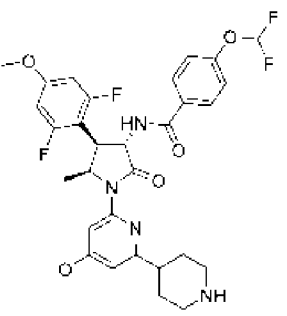
520		517.1	方法D， RT = 1.681 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.20 - 8.97 (m, 1H), 8.52 - 8.39 (m, 1H), 7.88 - 7.77 (m, 2H), 7.60 - 7.50 (m, 2H), 6.81 - 6.71 (m, 2H), 5.30 - 4.85 (m, 1H), 4.29 - 4.02 (m, 2H), 3.99 - 3.87 (m, 2H), 3.80 - 3.74 (2s, 3H), 3.64 - 3.55 (m, 1H), 2.54 - 2.48 (m, 1H), 2.29 - 2.14 (2s, 3H), 1.30 - 1.21 (m, 3H)。 (可互相轉化之阻轉異構物之混合物)
521		547.1	方法D， RT = 1.686 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.22 - 8.92 (m, 1H), 8.48 - 8.21 (m, 1H), 7.89 - 7.78 (m, 2H), 7.65 - 7.52 (m, 2H), 6.85 - 6.69 (m, 2H), 5.36 - 4.77 (m, 1H), 4.35 - 4.19 (m, 1H), 4.17 - 4.04 (m, 3H), 3.85 - 3.71 (2s, 3H), 3.65 - 3.53 (m, 2H), 2.47 - 2.38 (m, 1H), 2.36 - 2.24 (2s, 3H), 2.22 - 2.03 (m, 3H)。 (可互相轉化之阻轉異構物之混合物)

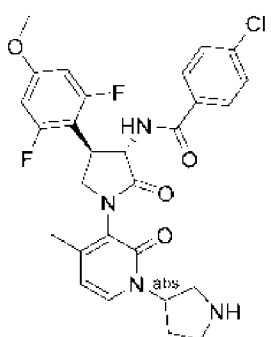
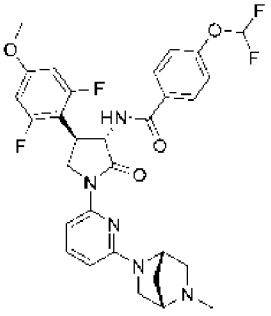
522		573.2	方法D , RT = 1.547 min , 94%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.21 - 9.01 (m, 1H), 8.36 - 8.27 (m, 1H), 7.89 - 7.80 (m, 2H), 7.61 - 7.52 (m, 2H), 6.85 - 6.73 (m, 2H), 5.36 - 4.81 (m, 1H), 4.68 (br s, 2H), 4.33 - 3.98 (m, 1H), 3.97 - 3.86 (m, 2H), 3.81 - 3.73 (2s, 3H), 3.65 - 3.53 (m, 1H), 3.28 - 3.15 (m, 3H), 2.30 - 2.16 (2s, 3H), 0.79 - 0.70 (2s, 3H)。(可互相轉化之 阻轉異構物之混合物)
523		601.2	方法D , RT = 1.942 min , 99%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 8.91 (d, <i>J</i> = 8.5 Hz, 1H), 8.17 (d, <i>J</i> = 8.5 Hz, 1H), 7.92 - 7.87 (m, 2H), 7.78 (dd, <i>J</i> = 8.5, 7.5 Hz, 1H), 7.34 (t, <i>J</i> = 76.0 Hz, 1H), 7.28 - 7.26 (m, 2H), 7.09 (d, <i>J</i> = 7.0 Hz, 1H), 6.84 - 6.77 (m, 2H), 5.67 (dd, <i>J</i> = 12.5, 8.5 Hz, 1H), 5.03 - 4.92 (m, 1H), 4.32 (dd, <i>J</i> = 12.8, 7.8 Hz, 1H), 3.79 (s, 3H), 2.87 - 2.83 (m, 2H), 2.65 - 2.55 (m, 1H), 2.18 (s, 3H), 1.96 (td, <i>J</i> = 11.4, 2.3 Hz, 2H), 1.85 - 1.68 (m, 4H), 1.21 (d, <i>J</i> = 6.5 Hz, 3H)。

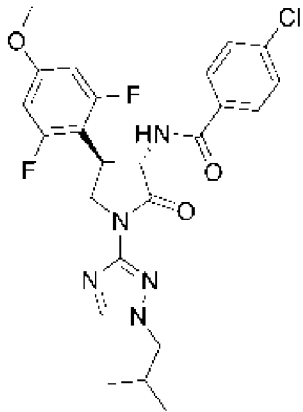
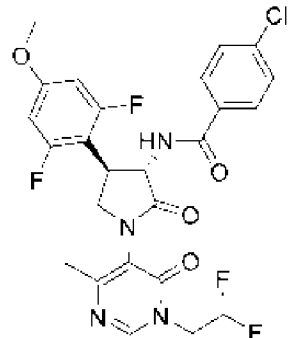
524		631.2	方法D , RT = 1.87 min , 99%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 8.90 (d, <i>J</i> = 8.3 Hz, 1H), 8.17 (d, <i>J</i> = 8.0 Hz, 1H), 7.90 (d, <i>J</i> = 8.8 Hz, 2H), 7.78 (t, <i>J</i> = 7.9 Hz, 1H), 7.34 (t, <i>J</i> = 72.0 Hz, 1H), 7.26 (d, <i>J</i> = 8.8 Hz, 2H), 7.08 (d, <i>J</i> = 7.4 Hz, 1H), 6.81 (d, <i>J</i> = 10.8 Hz, 2H), 5.67 (dd, <i>J</i> = 12.5, 8.4 Hz, 1H), 5.03 - 4.95 (m, 1H), 4.39 - 4.28 (m, 2H), 3.79 (s, 3H), 3.60 - 3.43 (m, 2H), 3.43 - 3.37 (m, 1H), 3.03- 2.95 (m, 2H), 2.42 - 2.38 (m, 2H), 2.32 - 2.01 (m, 2H), 1.84 - 1.68 (m, 4H), 1.21 (d, <i>J</i> = 6.4 Hz, 3H) °
525		587.2	方法D , RT = 1.896 min , 99%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.09 (d, <i>J</i> = 8.3 Hz, 1H), 8.16 (d, <i>J</i> = 8.1 Hz, 1H), 7.89 (d, <i>J</i> = 8.9 Hz, 2H), 7.79 (t, <i>J</i> = 7.9 Hz, 1H), 7.35 (t, <i>J</i> = 72.0 Hz, 1H), 7.29 (d, <i>J</i> = 8.9 Hz, 2H), 7.10 (d, <i>J</i> = 7.5 Hz, 1H), 6.80 (d, <i>J</i> = 10.8 Hz, 2H), 5.08 (dd, <i>J</i> = 10.8, 8.3 Hz, 1H), 4.48 (t, <i>J</i> = 9.7 Hz, 1H), 4.12 (q, <i>J</i> = 9.8 Hz, 1H), 4.03 - 3.92 (m, 1H), 3.78 (s, 3H), 2.84 (m, 2H), 2.65 - 2.55 (m, 2H), 2.17 (s, 3H), 2.02 - 1.87 (m, 2H), 1.87 - 1.69 (m, 3H) °

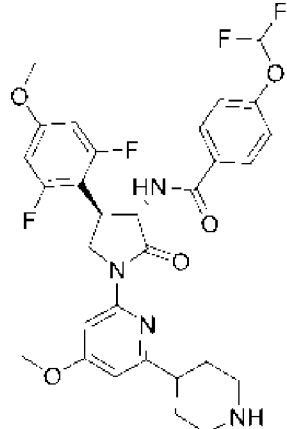
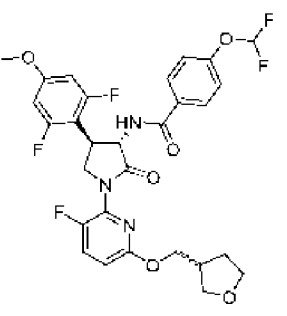
526		614.2	方法D， RT = 1.645 min，94%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.88 (d, <i>J</i> = 8.8 Hz, 1H), 7.90 (d, <i>J</i> = 8.8 Hz, 2H), 7.59 - 7.47 (m, 2H), 7.34 (t, <i>J</i> = 72.0 Hz, 1H), 7.28 (d, <i>J</i> = 8.6 Hz, 2H), 6.80 (d, <i>J</i> = 11.5 Hz, 2H), 6.31 - 6.22 (m, 1H), 5.67 (dd, <i>J</i> = 12.6, 8.4 Hz, 1H), 4.98 - 4.86 (m, 2H), 4.26 (dd, <i>J</i> = 12.7, 8.1 Hz, 2H), 3.80 - 3.74 (2s, 3H), 3.52 - 3.41 (m, 2H), 3.12 - 3.15 (m, 2H), 2.89 - 2.75 (2s, 3H), 2.40 - 2.35 (m, 1H), 2.21 - 2.15 (m, 1H), 1.20 (d, <i>J</i> = 6.4 Hz, 3H)。 (可互相轉化之阻轉異構物之混合物)
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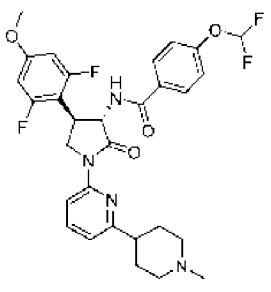
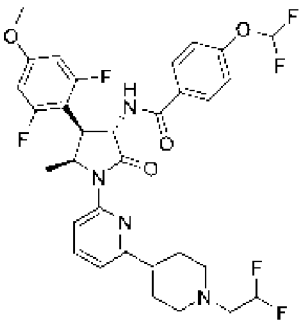
527		617.2	方法D , RT = 1.497 min , 98%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.10 (d, J = 7.8 Hz, 1H), 8.16 (d, J = 8.3 Hz, 1H), 7.95 - 7.86 (m, 2H), 7.80 (t, J = 7.9 Hz, 1H), 7.32 - 7.24 (m, 2H), 7.36 (t, J = 73.6 Hz, 1H), 7.10 (d, J = 7.6 Hz, 1H), 6.80 (d, J = 10.8 Hz, 2H), 5.08 (dd, J = 11.0, 8.6 Hz, 1H), 4.52 - 4.44 (m, 1H), 4.38 - 4.33 (m, 1H), 4.17 - 4.06 (m, 1H), 4.02 - 3.94 (m, 1H), 3.79 (s, 3H), 3.50 (t, J = 6.5 Hz, 2H), 2.99 - 2.95 (m, 2H), 2.65 - 2.56 (m, 1H), 2.41 (t, J = 6.5 Hz, 2H), 2.12 - 2.02 (m, 2H), 1.84 - 1.68 (m, 4H) °
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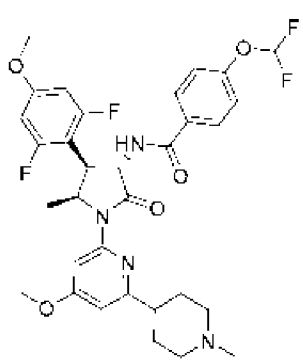
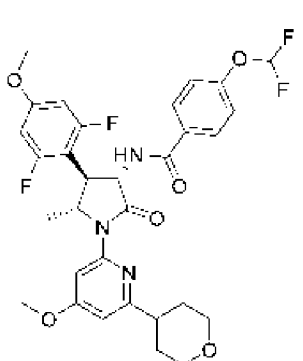
528		587.2	方法D， RT = 1.943 min，99%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.90 (d, <i>J</i> = 8.3 Hz, 1H), 8.15 (d, <i>J</i> = 8.3 Hz, 1H), 7.89 (d, <i>J</i> = 8.8 Hz, 2H), 7.78 (t, <i>J</i> = 7.9 Hz, 1H), 7.33 (t, <i>J</i> = 72.0 Hz, 1H), 7.26 (d, <i>J</i> = 8.6 Hz, 2H), 7.06 (d, <i>J</i> = 7.5 Hz, 1H), 6.80 (d, <i>J</i> = 11.5 Hz, 2H), 5.67 (dd, <i>J</i> = 11.2, 8.3 Hz, 1H), 5.05 - 4.97 (m, 1H), 4.32 (dd, <i>J</i> = 12.5, 8.3 Hz, 1H), 3.79 (s, 3H), 3.05 - 2.97 (m, 2H), 2.77 - 2.70 (m, 1H), 2.62 - 2.54 (m, 3H), 1.80 - 1.71 (m, 2H), 1.66 - 1.52 (m, 2H), 1.20 (d, <i>J</i> = 6.4 Hz, 3H)。
529		617.3	方法D， RT = 1.555 min，97.7%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.92 (d, <i>J</i> = 8.3 Hz, 1H), 7.94 - 7.84 (m, 3H), 7.34 (t, <i>J</i> = 76.0 Hz, 1H), 7.27 (d, <i>J</i> = 8.8 Hz, 2H), 7.02 (br s, 1H), 6.84 - 6.79 (m, 2H), 6.70 (d, <i>J</i> = 2.0 Hz, 1H), 5.65 (dd, <i>J</i> = 12.6, 8.2 Hz, 1H), 5.02 - 4.93 (m, 1H), 4.34 (dd, <i>J</i> = 12.7, 7.8 Hz, 1H), 3.84 (s, 3H), 3.79 (s, 3H), 3.08 - 2.89 (m, 4H), 2.53 - 2.52 (m, 1H), 2.06 - 1.83 (m, 4H), 1.22 - 1.18 (m, 3H)。

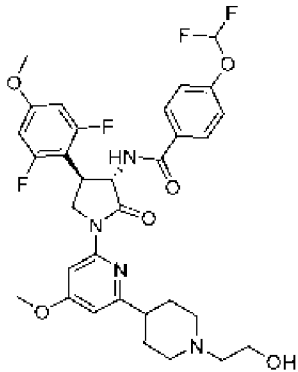
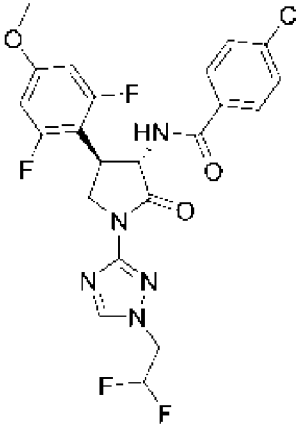
530		557.2	方法D， RT = 1.679 min，99%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.23 - 8.93 (m, 1H), 7.92 - 7.81 (m, 2H), 7.78 - 7.67 (m, 1H), 7.62 - 7.51 (m, 2H), 6.85 - 6.71 (m, 2H), 6.34 - 6.17 (m, 1H), 5.41 - 4.84 (m, 2H), 4.33 - 4.05 (m, 2H), 3.85 - 3.73 (2s, 3H), 3.55 - 3.36 (m, 2H), 3.16 - 3.02 (m, 2H), 2.92 - 2.75 (m, 2H), 2.29 - 2.24 (m, 1H), 2.25 - 2.06 (2s, 3H), 1.80 - 1.63 (m, 1H)。(可互相轉化之阻轉異構物之混合物)
531		600.2	方法C， RT = 1.491 min，99%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.06 (d, J = 8.3 Hz, 1H), 7.95 - 7.86 (m, 2H), 7.57 - 7.53 (m, 2H), 7.35 (t, J = 72.0 Hz, 1H), 7.34 - 7.16 (m, 2H), 6.80 (d, J = 10.8 Hz, 2H), 6.29 (dd, J = 5.3, 3.5 Hz, 1H), 5.08 (dd, J = 11.0, 8.3 Hz, 1H), 4.65 - 4.61 (m, 1H), 4.53 - 4.43 (m, 1H), 4.13 - 4.01 (m, 1H), 3.95 - 3.84 (m, 1H), 3.78 (s, 3H), 3.42 - 3.31 (m, 1H), 3.00 - 2.93 (m, 1H), 2.90 - 2.83 (m, 1H), 2.41 (s, 3H), 1.94 - 1.87 (m, 3H), 1.82 - 1.74 (m, 1H)。

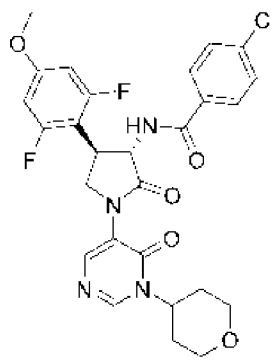
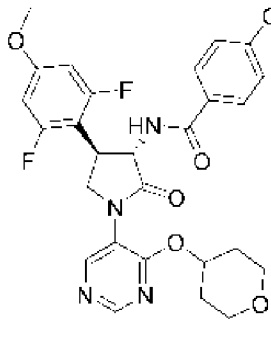
532		504.1	方法D， RT = 1.771 min，97%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.13 (d, <i>J</i> = 8.3 Hz, 1H), 8.47 (s, 1H), 7.89 - 7.79 (m, 2H), 7.63 - 7.52 (m, 2H), 6.79 (d, <i>J</i> = 10.8 Hz, 2H), 5.00 (dd, <i>J</i> = 9.9, 8.9 Hz, 1H), 4.24 - 4.06 (m, 2H), 4.02 - 3.89 (m, 3H), 3.78 (s, 3H), 2.12 (m, 1H), 0.88 (d, <i>J</i> = 6.6 Hz, 3H), 0.86 (d, <i>J</i> = 6.6 Hz, 3H)。
533		553.1	方法D， RT = 1.665 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.22 - 8.96 (m, 1H), 8.51 - 8.30 (m, 1H), 8.00 - 7.73 (m, 2H), 7.63 - 7.41 (m, 2H), 6.85 - 6.70 (m, 2H), 6.42 (t, <i>J</i> = 52.2 Hz, 1H), 5.35 - 4.70 (m, 1H), 4.57 - 4.36 (m, 2H), 4.32 - 3.96 (m, 2H), 3.82 - 3.71 (2s, 3H), 3.67 - 3.51 (m, 1H), 2.33 - 2.14 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)

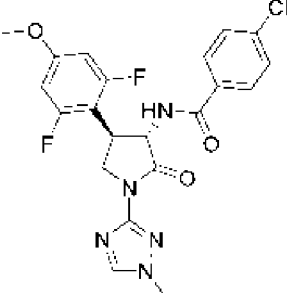
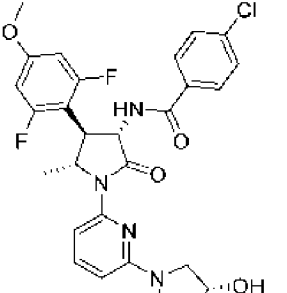
534		603.3	方法D , RT = 1.486 min , 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.13 - 9.08 (m, 1H), 7.90 (d, <i>J</i> = 8.8 Hz, 2H), 7.79 (d, <i>J</i> = 2.0 Hz, 1H), 7.35 (t, <i>J</i> = 72.0 Hz, 1H), 7.27 (d, <i>J</i> = 8.8 Hz, 2H), 6.80 (d, <i>J</i> = 10.8 Hz, 2H), 6.68 (d, <i>J</i> = 1.7 Hz, 1H), 5.08 (dd, <i>J</i> = 10.9, 8.2 Hz, 1H), 4.51 - 4.43 (m, 1H), 4.16 - 4.06 (m, 1H), 3.99 - 3.92 (m, 1H), 3.83 (s, 3H), 3.78 (s, 3H), 3.07 - 2.98 (m, 2H), 2.62 - 2.56 (m, 1H), 1.80 - 1.71 (m, 5H), 1.64 (dt, <i>J</i> = 9.4, 1.6 Hz, 2H) °
535		608.2	方法D , RT = 1.93 min , 94%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.10 (d, <i>J</i> = 8.6 Hz, 1H), 7.97 - 7.86 (m, 3H), 7.35 (t, <i>J</i> = 73.2 Hz, 1H), 7.27 (d, <i>J</i> = 8.4 Hz, 2H), 6.85 (dd, <i>J</i> = 8.8, 2.7Hz, 1H), 6.80 (d, <i>J</i> = 10.8 Hz, 2H), 5.17 - 5.04 (m, 1H), 4.30 - 3.94 (m, 5H), 3.82 - 3.71 (m, 5H), 3.67 - 3.63 (m, 1H), 3.55 - 3.51 (m, 1H), 2.71 - 2.64 (m, 1H), 2.06 - 1.94 (m, 1H), 1.72 - 1.60 (m, 1H) °

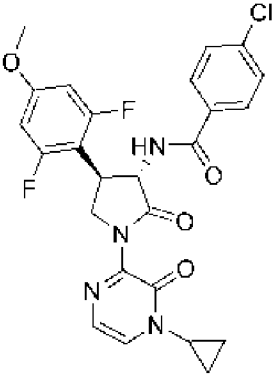
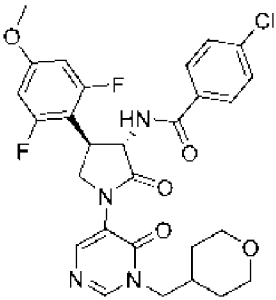
536		587.2	方法D， RT = 1.521 min，94%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.75 (d, <i>J</i> = 7.8 Hz, 1H), 8.24 (d, <i>J</i> = 8.3 Hz, 1H), 7.79 (t, <i>J</i> = 7.5 Hz, 1H), 7.74 - 7.64 (m, 2H), 7.17 (d, <i>J</i> = 8.8 Hz, 1H), 7.31 (t, <i>J</i> = 73.5 Hz, 2H), 7.09 (d, <i>J</i> = 7.5 Hz, 1H), 6.61 (d, <i>J</i> = 11.0 Hz, 2H), 5.30 (t, <i>J</i> = 8.5 Hz, 1H), 4.47 - 4.24 (m, 3H), 3.70 (s, 3H), 2.97 - 2.87 (m, 2H), 2.65 - 2.58 (m, 1H), 2.25 (s, 3H), 2.15 - 2.00 (m, 2H), 1.90 - 1.67 (m, 4H)。
537		651.2	方法D， RT = 2.252 min，94%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.91 (d, <i>J</i> = 8.5 Hz, 1H), 8.19 (d, <i>J</i> = 8.5 Hz, 1H), 7.83 (d, <i>J</i> = 9.2 Hz, 2H), 7.80 (t, <i>J</i> = 8.0 Hz, 1H), 7.35 (t, <i>J</i> = 75.3 Hz, 1H), 7.27 (d, <i>J</i> = 9.2 Hz, 2H), 7.11 (d, <i>J</i> = 7.5 Hz, 1H), 6.87 - 6.72 (m, 2H), 6.40 - 6.10 (m, 1H), 5.66 (dd, <i>J</i> = 12.5, 8.5 Hz, 1H), 5.06 - 4.91 (m, 1H), 4.33 (dd, <i>J</i> = 12.5, 8.0 Hz, 1H), 3.79 (s, 3H), 3.33 - 3.29 (m, 1H), 3.11 - 2.66 (m, 5H), 2.28 - 2.24 (m, 1H), 1.87 - 1.80 (m, 4H), 1.22 (d, <i>J</i> = 6.5 Hz, 3H)。

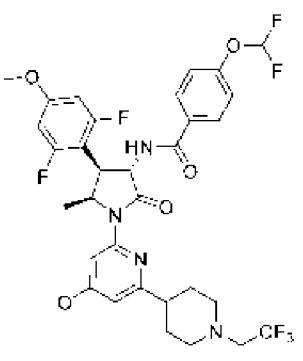
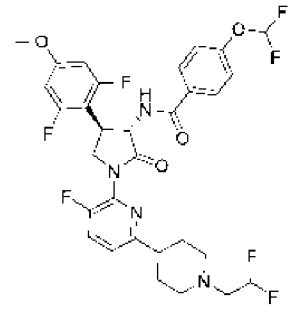
538		631.2	方法C , RT = 1.499 min , 95.9%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.88 (d, <i>J</i> = 8.3 Hz, 1H), 7.89 (d, <i>J</i> = 8.8 Hz, 2H), 7.81 (d, <i>J</i> = 2.1 Hz, 1H), 7.34 (t, <i>J</i> = 76.0 Hz, 1H), 7.26 (d, <i>J</i> = 8.6 Hz, 2H), 6.80 (d, <i>J</i> = 11.5 Hz, 2H), 6.69 (d, <i>J</i> = 2.0 Hz, 1H), 5.67 (dd, <i>J</i> = 12.6, 8.4 Hz, 1H), 5.02 - 4.93 (m, 1H), 4.30 (dd, <i>J</i> = 12.6, 7.9 Hz, 1H), 3.82 (s, 3H), 3.78 (s, 3H), 2.84 (br d, <i>J</i> = 10.8 Hz, 2H), 2.18 (s, 3H), 1.99 - 1.96 (m, 1H), 1.97 - 1.92 (m, 2H), 1.82 - 1.70 (m, 4H), 1.19 (br d, <i>J</i> = 6.4 Hz, 3H) °.
539		618.3	方法C , RT = 1.910 min , 93.3%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.09 (d, <i>J</i> = 7.8 Hz, 1H), 7.93 - 7.88 (m, 2H), 7.40 - 7.37 (m, 1H), 7.34 (t, <i>J</i> = 76.0 Hz, 1H), 7.32 - 7.26 (m, 2H), 6.86 - 6.78 (m, 2H), 6.77 - 6.74 (m, 1H), 5.04 - 4.95 (m, 1H), 4.66 - 4.57 (m, 1H), 3.98 - 3.89 (m, 2H), 3.86 - 3.84 (m, 3H), 3.79 (s, 3H), 3.74 - 3.65 (m, 1H), 3.48 - 3.38 (m, 2H), 2.93 - 2.80 (m, 1H), 1.81 - 1.70 (m, 4H), 1.35 (d, <i>J</i> = 6.6 Hz, 3H) °.

540		647.2	方法D , RT = 1.552 min , 98.4%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.08 (d, <i>J</i> = 8.3 Hz, 1H), 7.93 - 7.87 (m, 2H), 7.79 (d, <i>J</i> = 2.2 Hz, 1H), 7.35 (t, <i>J</i> = 74.3 Hz, 1H), 7.29 (d, <i>J</i> = 8.8 Hz, 2H), 6.83 - 6.76 (m, 2H), 6.70 (d, <i>J</i> = 2.2 Hz, 1H), 5.07 (dd, <i>J</i> = 10.9, 8.2 Hz, 1H), 4.48 (br t, <i>J</i> = 9.9 Hz, 1H), 4.16 - 4.06 (m, 1H), 4.00 - 3.91 (m, 1H), 3.83 (s, 3H), 3.78 (s, 3H), 3.49 (t, <i>J</i> = 6.4 Hz, 3H), 2.98 - 2.91 (m, 2H), 2.55 (br d, <i>J</i> = 5.1 Hz, 1H), 2.38 (t, <i>J</i> = 6.5 Hz, 2H), 2.08 - 1.98 (m, 2H), 1.81 - 1.72 (m, 4H) °
541		512.1	方法D , RT = 1.627 min , 98%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.14 (d, <i>J</i> = 8.3 Hz, 1H), 8.56 (s, 1H), 7.83 (d, <i>J</i> = 8.6 Hz, 2H), 7.58 (d, <i>J</i> = 8.6 Hz, 2H), 6.79 (d, <i>J</i> = 10.8 Hz, 2H), 6.42 (tt, <i>J</i> = 54.5, 9.1 Hz, 1H), 5.03 - 4.92 (m, 1H), 4.78 - 4.71 (m, 2H), 4.27 - 4.09 (m, 2H), 4.00 - 3.91 (m, 1H), 3.78 (s, 3H) °

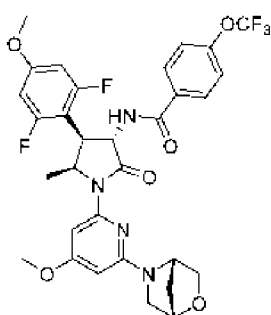
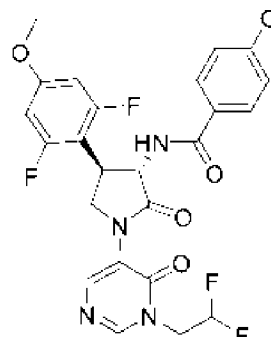
542		559.1	方法D， RT = 1.574 min，95%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.07 (d, <i>J</i> = 8.5 Hz, 1H), 8.60 (s, 1H), 8.13 (s, 1H), 7.88 - 7.74 (m, 2H), 7.60 - 7.46 (m, 2H), 6.77 (d, <i>J</i> = 10.8 Hz, 2H), 5.11 (dd, <i>J</i> = 11.0, 8.5 Hz, 1H), 4.78 (t, <i>J</i> = 12.2, 3.8 Hz, 1H), 4.19 - 4.05 (m, 1H), 4.03 - 3.92 (m, 4H), 3.76 (s, 3H), 3.48 - 3.44 (m, 2H), 2.14 - 1.96 (m, 2H), 1.83 - 1.78 (m, 2H)。
543		559.2	方法D， RT = 1.7 min，99%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.12 (d, <i>J</i> = 8.5 Hz, 1H), 8.74 (s, 1H), 8.63 (s, 1H), 7.90 - 7.76 (m, 2H), 7.62 - 7.44 (m, 2H), 6.80 (d, <i>J</i> = 10.8 Hz, 2H), 5.43 (t, <i>J</i> = 7.5 Hz, 1H), 5.09 (d, <i>J</i> = 10.9 Hz, 1H), 4.18 (q, <i>J</i> = 10.0 Hz, 1H), 4.03 - 3.95 (m, 2H), 3.82 (d, <i>J</i> = 11.3 Hz, 2H), 3.77 (s, 3H), 3.64 - 3.52 (m, 2H), 2.10 - 1.92 (m, 2H), 1.80 - 1.61 (m, 2H)。

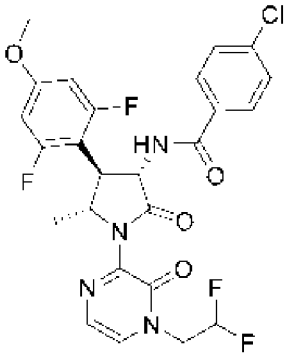
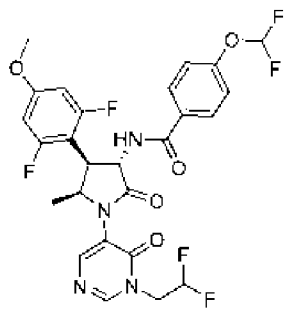
544		476.2	方法D， RT = 2.282 min，99%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.12 (d, <i>J</i> = 8.4 Hz, 1H), 8.47 (s, 1H), 7.87 - 7.79 (m, <i>J</i> = 8.6 Hz, 2H), 7.62 - 7.54 (m, 2H), 6.80 (s, 1H), 6.77 (s, 1H), 4.98 (dd, <i>J</i> = 10.4, 8.4 Hz, 1H), 4.24 - 4.10 (m, 4H), 4.00 - 3.87 (m, 1H), 3.78 (s, 3H), 1.40 (t, <i>J</i> = 7.3 Hz, 3H)。
545		557.1	方法D， RT = 1.798 min，96%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.13 (d, <i>J</i> = 8.5 Hz, 1H), 7.92 - 7.74 (m, 2H), 7.64 - 7.46 (m, 3H), 7.15 (d, <i>J</i> = 7.5 Hz, 1H), 6.82 (d, <i>J</i> = 11.3 Hz, 2H), 6.26 (d, <i>J</i> = 8.3 Hz, 1H), 5.00 (dd, <i>J</i> = 10.8, 8.5 Hz, 1H), 4.92 (d, <i>J</i> = 3.0 Hz, 1H), 4.62 - 4.48 (m, 1H), 4.37 (d, <i>J</i> = 1.3 Hz, 1H), 3.79 (s, 3H), 3.64 (t, <i>J</i> = 9.9 Hz, 1H), 3.50 - 3.30 (m, 4H), 2.06 - 1.96 (m, 1H), 1.91 - 1.79 (m, 1H), 1.38 (d, <i>J</i> = 6.0 Hz, 3H)。

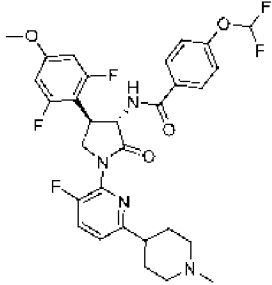
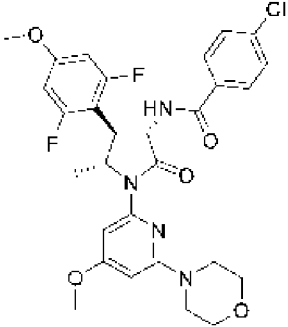
546		515.1	方法D， RT = 1.597 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.11 (d, <i>J</i> = 8.8 Hz, 1H), 7.90 - 7.73 (m, 2H), 7.66 - 7.50 (m, 3H), 7.25 - 7.12 (m, 1H), 6.77 (d, <i>J</i> = 10.8 Hz, 2H), 5.16 (dd, <i>J</i> = 10.3, 9.0 Hz, 1H), 4.21 - 4.02 (m, 2H), 3.99 - 3.88 (m, 1H), 3.76 (s, 3H), 3.52 - 3.41 (m, 1H), 1.09 - 1.01 (m, 2H), 0.99 - 0.89 (m, 2H) °
547		573.2	方法D， RT = 1.604 min，96%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.08 (d, <i>J</i> = 8.8 Hz, 1H), 8.50 (s, 1H), 8.15 (s, 1H), 7.86 - 7.81 (m, 2H), 7.60 - 7.54 (m, 2H), 6.78 (d, <i>J</i> = 10.8 Hz, 2H), 5.13 (dd, <i>J</i> = 11.2, 8.6 Hz, 1H), 4.16 - 4.04 (m, 1H), 4.03 - 3.92 (m, 2H), 3.90 - 3.81 (m, 4H), 3.77 (s, 3H), 3.24 (t, <i>J</i> = 11.5 Hz, 2H), 2.10 - 1.95 (m, 1H), 1.47 - 1.42 (m, 2H), 1.34 - 1.21 (m, 2H) °

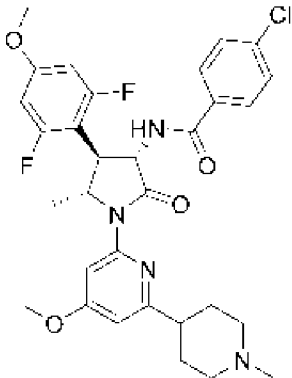
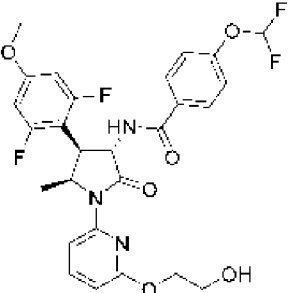
548		699.2	方法D , RT = 2.434 min , 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 8.93 - 8.87 (m, 1H), 7.90 (d, <i>J</i> = 8.6 Hz, 2H), 7.84 - 7.81 (m, 1H), 7.34 (t, <i>J</i> = 76.0 Hz, 1H), 7.28 (d, <i>J</i> = 8.6 Hz, 2H), 6.80 (d, <i>J</i> = 11.0 Hz, 2H), 6.73 - 6.70 (m, 1H), 5.67 (dd, <i>J</i> = 12.7, 8.3 Hz, 1H), 5.02 - 4.92 (m, 1H), 4.30 (dd, <i>J</i> = 12.7, 8.1 Hz, 1H), 3.86 (s, 3H), 3.79 (s, 3H), 3.18 (q, <i>J</i> = 10.2 Hz, 2H), 3.01 (br d, <i>J</i> = 11.5 Hz, 2H), 2.65 - 2.54 (m, 1H), 2.46 -2.42 (m, 2H), 1.86 - 1.67 (m, 4H), 1.21 (d, <i>J</i> = 6.6 Hz, 3H) °
549		655.2	方法D , RT = 2.089 min , 95%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.10 (d, <i>J</i> = 8.6 Hz, 1H), 7.90 (d, <i>J</i> = 8.6 Hz, 2H), 7.80 (t, <i>J</i> = 9.0 Hz, 1H), 7.34 (t, <i>J</i> = 76.0 Hz, 1H), 7.34 (t, <i>J</i> = 71.7 Hz, 1H), 7.28 (d, <i>J</i> = 8.6 Hz, 2H), 6.79 (d, <i>J</i> = 11.0 Hz, 2H), 6.15 (tt, <i>J</i> = 54.3, 11.5 Hz, 1H), 5.13 (br t, <i>J</i> = 9.4 Hz, 1H), 4.31 - 4.15 (m, 2H), 4.12 - 4.01 (m, 1H), 3.78 (s, 3H), 3.00 (br d, <i>J</i> = 11.5 Hz, 2H), 2.80 - 2.62 (m, 3H), 2.32 - 2.19 (m, 2H), 1.86 - 1.64 (m, 4H) °

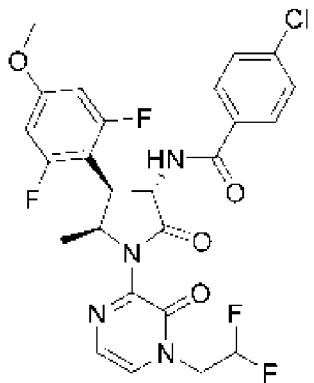
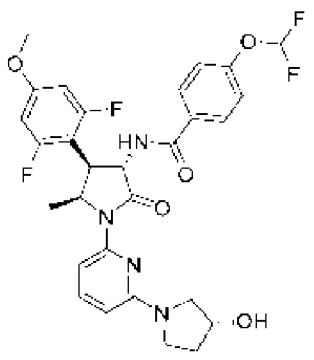
550	<chem>COC1=CC=C(C(=C1F)[C@H]2CN(C(=O)NC3=CC=C(C=C3)OC(F)=F)C(=O)N2)c4cc(F)n(cc4)C5CC[N+](C)(C)CC5</chem>	673.2	方法D， RT = 2.24 min，96%	¹H NMR (400 MHz, DMSO-d₆) δ = 9.10 (d, J = 8.6 Hz, 1H), 7.90 (d, J = 8.6 Hz, 2H), 7.80 (dd, J = 8.6, 9.8 Hz, 1H), 7.39 - 7.33 (m, 1H), 7.35 (t, J = 73.6 Hz, 1H), 7.28 (d, J = 8.6 Hz, 2H), 6.79 (d, J = 10.8 Hz, 2H), 5.20 - 5.04 (m, 1H), 4.30 - 4.16 (m, 2H), 4.13 - 4.00 (m, 1H), 3.78 (s, 3H), 3.19 (q, J = 10.3 Hz, 2H), 3.02 (br d, J = 11.2 Hz, 2H), 2.74 - 2.66 (m, 1H), 2.48 - 2.41 (m, 2H), 1.88 - 1.66 (m, 4H)。
551	<chem>COC1=CC=C(C(=C1F)[C@H]2CN(C(=O)NC3=CC=C(C=C3)OC(F)(F)F)C(=O)N2)c4cc(F)n(cc4)C5=CC=C(C(=C5)N#N)C(F)(F)F</chem>	601.1	方法D， RT = 2.257 min，98.7%	¹H NMR (400 MHz, DMSO-d₆) δ = 9.28 (d, J = 8.3 Hz, 1H), 8.78 (d, J = 7.8 Hz, 1H), 8.06 (d, J = 8.1 Hz, 1H), 8.01 - 7.88 (m, 2H), 7.51 (d, J = 8.3 Hz, 2H), 6.81 (d, J = 10.8 Hz, 2H), 5.11 (dd, J = 10.5, 8.3 Hz, 1H), 4.51 - 4.39 (m, 1H), 4.36 - 4.24 (m, 1H), 4.22 - 4.12 (m, 1H), 3.78 (s, 3H)。

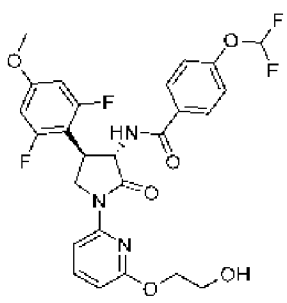
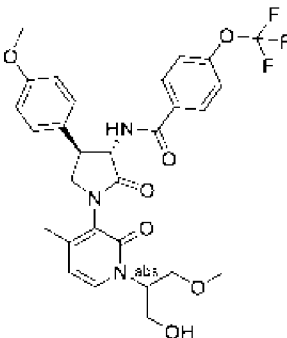
552		649.3	方法C， RT = 1.916 min， 82.51%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.99 - 8.91 (m, 1H), 7.97 - 7.92 (m, 2H), 7.51 - 7.45 (m, 2H), 7.29 (d, <i>J</i> = 2.0 Hz, 1H), 6.83 - 6.75 (m, 2H), 5.87 (d, <i>J</i> = 1.5 Hz, 1H), 5.71 - 5.63 (m, 1H), 4.92 - 4.82 (m, 1H), 4.79 - 4.75 (m, 1H), 4.65 - 4.61 (m, 1H), 4.28 - 4.20 (m, 1H), 3.80 (s, 3H), 3.78 (s, 3H), 3.70 - 3.63 (m, 1H), 3.47 - 3.41 (m, 1H), 3.25 - 3.15 (m, 2H), 1.90 - 1.80 (m, 2H), 1.21 (br d, <i>J</i> = 6.4 Hz, 3H)。
553		539.2	方法D， RT = 2.426 min，99%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.09 (d, <i>J</i> = 8.6 Hz, 1H), 8.51 (s, 1H), 8.19 (s, 1H), 7.86 - 7.81 (m, 2H), 7.60 - 7.54 (m, 2H), 6.77 (d, <i>J</i> = 10.8 Hz, 2H), 6.40 (tt, <i>J</i> = 56.0, 9.2 Hz, 1H), 5.12 (dd, <i>J</i> = 11.0, 8.6 Hz, 1H), 4.58 - 4.42 (m, 2H), 4.17 - 4.06 (m, 1H), 4.05 - 3.92 (m, 2H), 3.77 (s, 3H)。

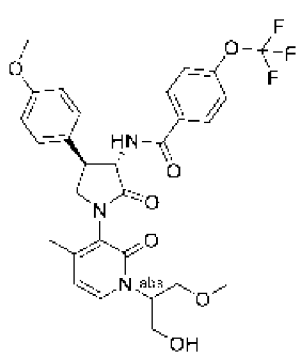
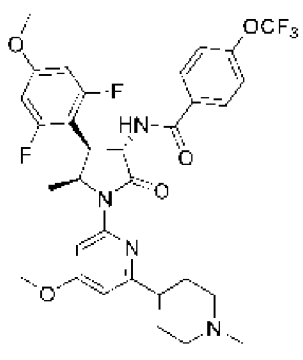
554		553.1	方法D， RT = 1.76 min，98%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.15 (d, <i>J</i> = 8.8 Hz, 1H), 7.90 - 7.79 (m, 2H), 7.76 (d, <i>J</i> = 4.4 Hz, 1H), 7.62 - 7.50 (m, 2H), 7.38 (d, <i>J</i> = 4.4 Hz, 1H), 6.80 (d, <i>J</i> = 11.2 Hz, 2H), 6.41 (tt, <i>J</i> = 54.8, 4.3 Hz, 1H), 5.24 (dd, <i>J</i> = 11.2, 8.8 Hz, 1H), 4.56 - 4.42 (m, 3H), 3.78 (s, 3H), 3.69 (t, <i>J</i> = 10.4 Hz, 1H), 1.09 (d, <i>J</i> = 6.1 Hz, 3H)。
555		585.1	方法D， RT = 1.793 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.96 - 8.87 (m, 1H), 8.52 (s, 1H), 7.90 (d, <i>J</i> = 9.9 Hz, 2H), 7.34 (t, <i>J</i> = 72.0 Hz, 1H), 7.27 (m, 3H), 6.80 (d, <i>J</i> = 9.9 Hz, 2H), 6.35 (tt, <i>J</i> = 54.8, 4.3 Hz, 1H), 5.69 - 5.57 (m, 1H), 4.84 (m, 1H), 4.48 - 4.26 (m, 3H), 3.78 (s, 3H), 1.19 (d, <i>J</i> = 6.8 Hz, 3H)。

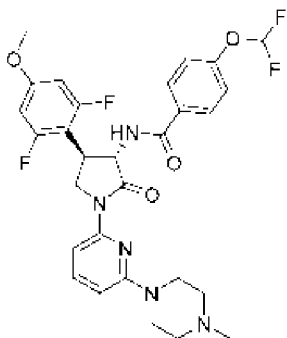
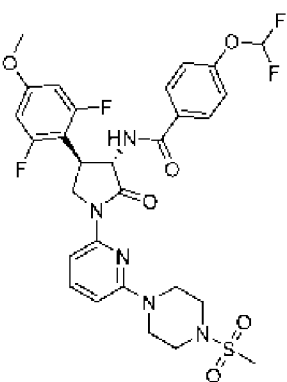
556		605.2	方法D， RT = 1.43 min，93%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.10 (d, <i>J</i> = 8.6 Hz, 1H), 7.96 - 7.86 (m, 2H), 7.80 (dd, <i>J</i> = 9.8, 8.6 Hz, 1H), 7.34 (t, <i>J</i> = 74.0 Hz, 1H), 7.32 - 7.27 (m, 3H), 6.79 (d, <i>J</i> = 10.8 Hz, 2H), 5.18 - 5.09 (m, 1H), 4.28 - 4.17 (m, 2H), 4.10 - 4.04 (m, 1H), 3.78 (s, 3H), 2.88 - 2.80 (m, 2H), 2.70 - 2.60 (m, 1H), 2.21 (s, 3H), 2.05 - 1.96 (m, 2H), 1.86 - 1.69 (m, 4H)。
557		588.1	方法D， RT = 2.076 min， 94.45%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.18 - 9.12 (m, 1H), 7.87 - 7.82 (m, 2H), 7.60 - 7.55 (m, 2H), 6.99 - 6.92 (m, 1H), 6.85 - 6.78 (m, 2H), 6.21 - 6.16 (m, 1H), 5.06 - 4.94 (m, 1H), 4.57 - 4.48 (m, 1H), 3.82 (s, 3H), 3.78 (s, 3H), 3.73 - 3.57 (m, 5H), 3.44 - 3.35 (m, 4H), 1.35 (d, <i>J</i> = 5.9 Hz, 3H)。

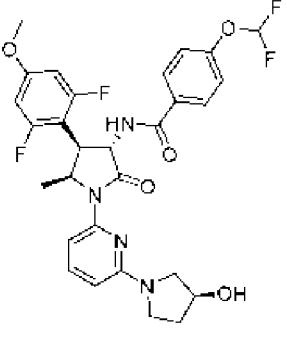
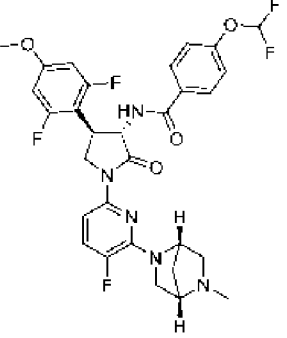
558		600.2	方法D , RT = 1.712 min , 98.72%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.18 - 9.12 (m, 1H), 7.86 (d, <i>J</i> = 8.6 Hz, 2H), 7.59 (d, <i>J</i> = 8.6 Hz, 2H), 7.36 (d, <i>J</i> = 2.0 Hz, 1H), 6.85 - 6.79 (m, 2H), 6.76 - 6.73 (m, 1H), 5.04 - 4.97 (m, 1H), 4.65 - 4.57 (m, 1H), 3.84 (s, 3H), 3.79 (s, 3H), 3.72 - 3.63 (m, 1H), 2.90 - 2.81 (m, 2H), 2.63 - 2.54 (m, 1H), 2.19 (s, 3H), 2.03 - 1.92 (m, 2H), 1.82 - 1.69 (m, 4H), 1.34 (d, <i>J</i> = 5.6 Hz, 3H) 。
559		564.1	方法D , RT = 1.744 min , 95%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 8.90 (d, <i>J</i> = 8.3 Hz, 1H), 7.97 - 7.87 (m, 3H), 7.78 (t, <i>J</i> = 7.8 Hz, 1H), 7.34 (t, <i>J</i> = 72.9 Hz, 1H), 7.27 (d, <i>J</i> = 8.6 Hz, 2H), 6.81 (d, <i>J</i> = 11.5 Hz, 2H), 6.61 (d, <i>J</i> = 7.8 Hz, 1H), 5.68 (dd, <i>J</i> = 12.6, 8.2 Hz, 1H), 4.97 - 4.86 (m, 1H), 4.81 (t, <i>J</i> = 5.5 Hz, 1H), 4.39 - 4.18 (m, 3H), 3.79 (s, 3H), 3.71 (q, <i>J</i> = 5.1 Hz, 2H), 1.24 (d, <i>J</i> = 6.6 Hz, 3H) 。

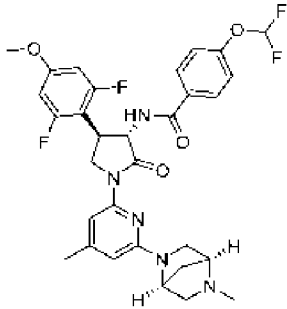
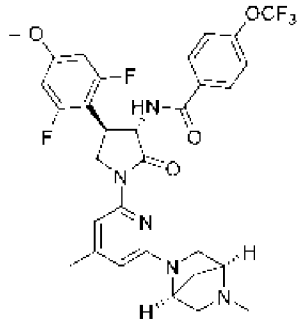
560		553.1	方法D , RT = 1.727 min , 96%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 8.96 (d, <i>J</i> = 8.6 Hz, 1H), 7.85 (d, <i>J</i> = 8.6 Hz, 2H), 7.73 (d, <i>J</i> = 4.4 Hz, 1H), 7.57 - 7.50 (m, 2H), 7.35 (d, <i>J</i> = 4.4 Hz, 1H), 6.85 - 6.75 (m, 2H), 6.41 (tt, <i>J</i> = 55.5, 4.5 Hz, 1H), 5.60 (dd, <i>J</i> = 11.7, 8.6 Hz, 1H), 4.73 - 4.60 (m, 1H), 4.49 (tt, <i>J</i> = 14.7, 4.4 Hz, 2H), 4.37 (dd, <i>J</i> = 12.0, 8.3 Hz, 1H), 3.78 (s, 3H), 0.98 (d, <i>J</i> = 6.6 Hz, 3H) 。
561		589.2	方法C , RT = 1.536 min , 94%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 8.86 (d, <i>J</i> = 8.1 Hz, 1H), 7.90 (d, <i>J</i> = 9.0 Hz, 2H), 7.57 - 7.49 (m, 2H), 7.35 (t, <i>J</i> = 73.0 Hz, 1H), 7.26 (d, <i>J</i> = 9.0 Hz, 2H), 6.80 (d, <i>J</i> = 9.0 Hz, 2H), 6.24 - 6.19 (m, 1H), 5.68 (m, 1H), 4.93 (t, <i>J</i> = 7.2 Hz, 2H), 4.38 (s, 1H), 4.28 - 4.24 (m, 1H), 3.78 (s, 3H), 3.53 - 3.34 (m, 3H), 3.30 - 3.22 (m, 1H), 2.06 - 1.97 (m, 1H), 1.92 - 1.87 (m, 1H), 1.24 (d, <i>J</i> = 6.1 Hz, 3H) 。

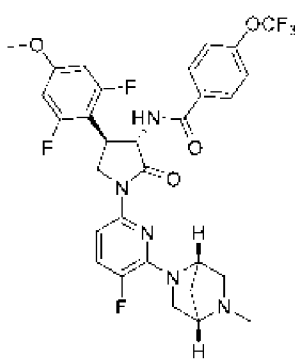
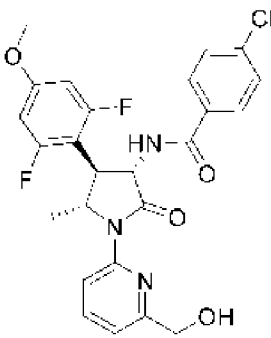
562		550.1	方法C， RT = 1.687 min，96%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.09 (d, <i>J</i> = 8.3 Hz, 1H), 7.92 - 7.88 (m, 3H), 7.78 (t, <i>J</i> = 8.1 Hz, 1H), 7.34 (t, <i>J</i> = 72.9 Hz, 1H), 7.27 (d, <i>J</i> = 8.6 Hz, 2H), 6.80 (d, <i>J</i> = 9.0 Hz, 2H), 6.61 (d, <i>J</i> = 8.1 Hz, 1H), 5.11 - 5.07 (m, 1H), 4.78 (t, <i>J</i> = 5.5 Hz, 1H), 4.48 (t, <i>J</i> = 9.8 Hz, 1H), 4.33 - 4.22 (m, 2H), 4.12 (q, <i>J</i> = 10.1 Hz, 1H), 4.01 - 3.94 (m, 1H), 3.80 - 3.77 (m, 3H), 3.77 - 3.64 (m, 2H)。
563		590.1	方法D， RT = 1.729 min，100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.07 - 9.00 (dd, <i>J</i> = 13.8, 8.8 Hz, 1H), 8.03 - 7.97 (m, 2H), 7.60 (d, <i>J</i> = 7.0 Hz, 1H), 7.53 - 7.44 (m, 2H), 7.39 (d, <i>J</i> = 8.5 Hz, 1H), 7.35 - 7.31 (m, 1H), 6.96 - 6.87 (m, 2H), 6.22 (dd, <i>J</i> = 7.0, 2.5 Hz, 1H), 5.27 - 4.67 (m, 3H), 4.15 - 3.81 (m, 2H), 3.79 - 3.58 (m, 8H), 3.24 (d, <i>J</i> = 1.0 Hz, 3H), 2.22 - 2.09 (m, 3H)。(可互相轉化之阻轉異構物之混合物)

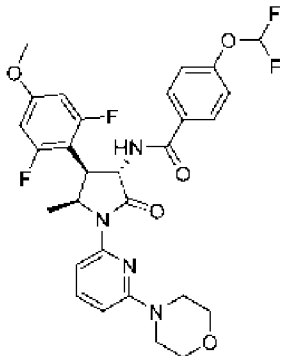
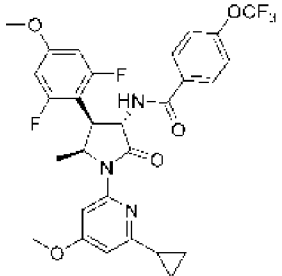
564		590.1	方法D， RT = 1.675 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.07 - 9.00 (dd, <i>J</i> = 13.8, 8.8 Hz, 1H), 8.06 - 7.97 (m, 2H), 7.60 (dd, <i>J</i> = 7.0, 6.0 Hz, 1H), 7.56 - 7.44 (m, 2H), 7.42 - 7.30 (m, 2H), 6.98 - 6.88 (m, 2H), 6.22 (d, <i>J</i> = 7.5 Hz, 1H), 5.29 - 4.67 (m, 3H), 4.15 - 3.82 (m, 2H), 3.80 - 3.58 (m, 8H), 3.23 (d, <i>J</i> = 1.0 Hz, 3H), 2.23 - 2.08 (m, 3H)。(可互相轉化之阻轉異構物之混合物)
565		649.2	方法D， RT = 1.792 min， 96.9%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.01 (d, <i>J</i> = 8.3 Hz, 1H), 7.95 (d, <i>J</i> = 11.5 Hz, 2H), 7.86 (d, <i>J</i> = 2.0 Hz, 1H), 7.48 (br d, <i>J</i> = 8.0 Hz, 2H), 6.82 (d, <i>J</i> = 11.5 Hz, 2H), 6.73 (d, <i>J</i> = 2.0 Hz, 1H), 5.66 (dd, <i>J</i> = 12.8, 8.3 Hz, 1H), 4.97 (quin, <i>J</i> = 7.0 Hz, 1H), 4.33 (dd, <i>J</i> = 12.8, 8.0 Hz, 1H), 3.84 (s, 3H), 3.79 (s, 3H), 2.95 - 2.76 (m, 3H), 2.74 - 2.62 (m, 4H), 2.33 (td, <i>J</i> = 3.7, 1.8 Hz, 1H), 2.05 - 1.83 (m, 4H), 1.20 (br d, <i>J</i> = 6.5 Hz, 3H)。

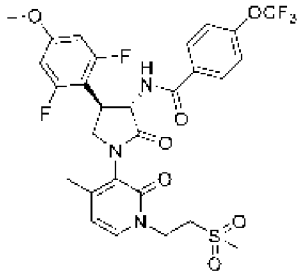
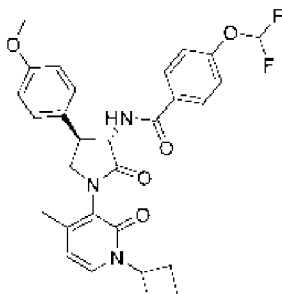
566		588.2	方法D , RT = 1.775 min , 93%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.06 (d, <i>J</i> = 8.3 Hz, 1H), 7.89 (d, <i>J</i> = 8.8 Hz, 2H), 7.62 - 7.57 (m, 2H), 7.35 (t, <i>J</i> = 73.0 Hz, 1H), 7.26 (d, <i>J</i> = 8.8 Hz, 2H), 6.80 (d, <i>J</i> = 8.8 Hz, 2H), 6.65 - 6.58 (m, 1H), 5.14 - 5.04 (m, 1H), 4.48 - 4.38 (m, 1H), 4.12 - 4.01 (m, 1H), 3.95 - 3.90 (m, 1H), 3.78 (s, 3H), 3.46 (m, 4H), 2.40 - 2.34 (m, 4H), 2.21 (s, 3H) 。
567		652.1	方法D , RT = 1.866 min , 97%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.07 (d, <i>J</i> = 8.0 Hz, 1H), 7.89 (d, <i>J</i> = 9.0 Hz, 2H), 7.67 - 7.62 (m, 2H), 7.35 (t, <i>J</i> = 73.0 Hz, 1H), 7.26 (d, <i>J</i> = 8.8 Hz, 2H), 6.80 (d, <i>J</i> = 8.8 Hz, 2H), 6.71 - 6.65 (m, 1H), 5.12 - 5.05 (m, 1H), 4.48 - 4.44 (m, 1H), 4.09 (d, <i>J</i> = 10.0 Hz, 1H), 3.95 (d, <i>J</i> = 10.5 Hz, 1H), 3.78 (s, 3H), 3.65 - 3.60 (m, 4H), 3.20 - 3.16 (m, 4H), 2.89 (s, 3H) 。

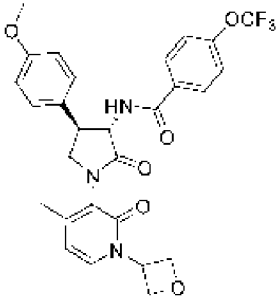
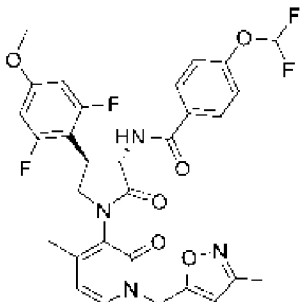
568		589.2	方法D， RT = 1.829 min，96%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.86 (d, <i>J</i> = 8.3 Hz, 1H), 7.89 (d, <i>J</i> = 9.0 Hz, 2H), 7.56 - 7.50 (m, 2H), 7.35 (t, <i>J</i> = 73.0 Hz, 1H), 7.26 (d, <i>J</i> = 8.8 Hz, 2H), 6.80 (d, <i>J</i> = 8.8 Hz, 2H), 6.21 (m, 1H), 5.68 (m, 1H), 4.98 - 4.85 (m, 1H), 4.41 - 4.35 (m, 2H), 4.31 - 4.22 (m, 1H), 3.78 (s, 3H), 3.51 - 3.38 (m, 3H), 3.34 - 3.26 (m, 1H), 2.07 - 1.83 (m, 2H), 1.24 (d, <i>J</i> = 6.1 Hz, 3H)。
569		618.2	方法D， RT = 1.59 min，95%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.06 (d, <i>J</i> = 8.3 Hz, 1H), 7.93 - 7.84 (m, 2H), 7.57 - 7.41 (m, 2H), 7.35 (t, <i>J</i> = 73.6 Hz, 1H), 7.28 (d, <i>J</i> = 8.6 Hz, 2H), 6.79 (d, <i>J</i> = 10.8 Hz, 2H), 5.07 (dd, <i>J</i> = 10.9, 8.4 Hz, 1H), 4.63 - 4.60 (m, 1H), 4.44 (br t, <i>J</i> = 9.9 Hz, 1H), 4.12 - 3.96 (m, 1H), 3.92 - 3.83 (m, 1H), 3.78 (s, 3H), 3.62 (br dd, <i>J</i> = 9.7, 3.5 Hz, 1H), 3.47 - 3.42 (m, 1H), 3.42 - 3.33 (m, 1H), 2.80 (dd, <i>J</i> = 9.4, 1.8 Hz, 1H), 2.60 (br d, <i>J</i> = 10.0 Hz, 1H), 2.29 (s, 3H), 1.85 - 1.80 (m, 1H), 1.74 - 1.70 (m, 1H)。

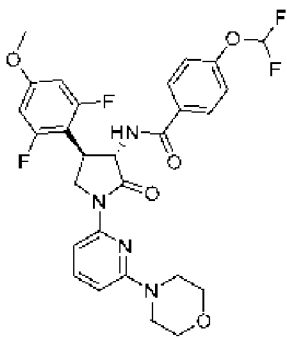
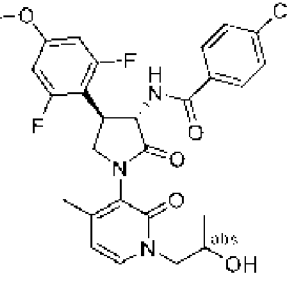
570		614.2	方法D， RT = 1.55 min，98%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.05 (d, <i>J</i> = 8.6 Hz, 1H), 7.93 - 7.83 (m, 2H), 7.40 (s, 1H), 7.35 (t, <i>J</i> = 73.6 Hz, 1H), 7.28 (d, <i>J</i> = 8.6 Hz, 2H), 6.79 (d, <i>J</i> = 10.8 Hz, 2H), 6.12 (s, 1H), 5.05 (dd, <i>J</i> = 11.1, 8.2 Hz, 1H), 4.58 - 4.54 (m, 1H), 4.47 - 4.42 (m, 1H), 4.07 - 4.01 (m, 1H), 3.89 - 3.80 (m, 2H), 3.78 (s, 3H), 3.45 - 3.40 (m, 1H), 3.26 - 3.19 (m, 1H), 2.79 - 2.77 (m, 1H), 2.45 - 2.41 (m, 1H),), 2.26 (s, 3H), 2.23 (s, 3H), 1.84 - 1.80 (m, 1H), 1.73 - 1.62 (m, 1H)。
571		632.2	方法D， RT = 1.77 min，98%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.15 (d, <i>J</i> = 8.3 Hz, 1H), 7.99 - 7.90 (m, 2H), 7.54 - 7.44 (m, 2H), 7.40 (s, 1H), 6.84 - 6.71 (m, 2H), 6.12 (s, 1H), 5.06 (dd, <i>J</i> = 11.0, 8.3 Hz, 1H), 4.58 - 4.54 (m, 1H), 4.50 - 4.42 (m, 1H), 4.11 - 4.02 (m, 1H), 3.91 - 3.85 (m, 1H), 3.78 (s, 3H), 3.43 - 3.39 (m, 2H), 3.25 - 3.22 (m, 1H), 2.80 (dd, <i>J</i> = 9.4, 2.1 Hz, 1H), 2.43 (d, <i>J</i> = 9.5 Hz, 1H), 2.26 (s, 3H), 2.23 (s, 3H), 1.84 - 1.80 (m, 1H), 1.73 - 1.62 (m, 1H)。

572		636.2	方法D， RT = 1.77 min，95%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.16 (d, <i>J</i> = 8.3 Hz, 1H), 7.98 - 7.92 (m, 2H), 7.57 - 7.41 (m, 4H), 6.86 - 6.73 (m, 2H), 5.08 (dd, <i>J</i> = 11.0, 8.1 Hz, 1H), 4.63 - 4.60 (m, 1H), 4.45 (br t, <i>J</i> = 9.7 Hz, 1H), 4.12 - 4.03 (m, 1H), 3.92 - 3.86 (m, 1H), 3.78 (s, 3H), 3.65 - 3.58 (m, 1H), 3.45 - 3.42 (m, 1H), 3.40 - 3.36 (m, 1H), 2.79 (dd, <i>J</i> = 9.5, 2.0 Hz, 1H), 2.58 (dd, <i>J</i> = 9.5, 2.0 Hz, 1H), 2.28 (s, 3H), 1.85 - 1.77 (m, 1H), 1.74 - 1.66 (m, 1H)。
573		502	方法D， RT = 1.695 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.16 (d, <i>J</i> = 7.8 Hz, 1H), 7.94 - 7.81 (m, 3H), 7.78 (d, <i>J</i> = 7.8 Hz, 1H), 7.62 - 7.52 (m, 2H), 7.32 (d, <i>J</i> = 7.6 Hz, 1H), 6.82 (d, <i>J</i> = 11.2 Hz, 2H), 5.03 - 4.99 (m, 1H), 4.68 - 4.46 (m, 3H), 3.79 (s, 3H), 3.74 - 3.67 (m, 1H), 3.51 - 3.15 (m, 1H), 1.30 (d, <i>J</i> = 5.9 Hz, 3H)。

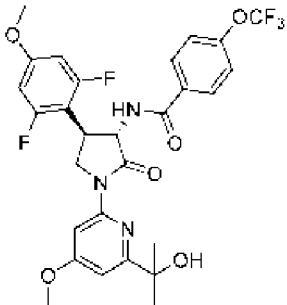
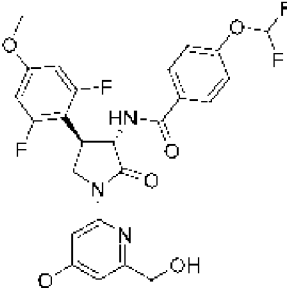
574		589.2	方法D , RT = 1.994 min , 97%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 8.88 (d, <i>J</i> = 8.3 Hz, 1H), 7.90 (d, <i>J</i> = 8.8 Hz, 2H), 7.70 - 7.60 (m, 2H), 7.35 (t, <i>J</i> = 76.0 Hz, 1H), 7.26 (d, <i>J</i> = 8.8 Hz, 2H), 6.79 (d, <i>J</i> = 8.8 Hz, 2H), 6.61 (d, <i>J</i> = 8.1 Hz, 1H), 5.68 - 5.65 (m, 1H), 4.94 - 4.85 (m, 1H), 4.29 - 4.24 (m, 1H), 3.78 (s, 3H), 3.74 - 3.71 - 3.65 (m, 4H), 3.49 - 3.39 (m, 4H), 1.21 (d, <i>J</i> = 6.4 Hz, 3H) 。
575		592.1	方法D , RT = 2.416 min , 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 8.98 (d, <i>J</i> = 8.3 Hz, 1H), 7.98 - 7.92 (m, 2H), 7.74 (d, <i>J</i> = 2.0 Hz, 1H), 7.48 (br d, <i>J</i> = 8.9 Hz, 2H), 6.83 - 6.81 (m, 1H), 6.80 - 6.77 (m, 2H), 5.66 (dd, <i>J</i> = 12.6, 8.4 Hz, 1H), 4.92 - 4.80 (m, 1H), 4.26 (dd, <i>J</i> = 12.8, 8.0 Hz, 1H), 3.82 (s, 3H), 3.78 (s, 3H), 1.77 - 1.57 (m, 1H), 1.16 (d, <i>J</i> = 6.6 Hz, 3H), 1.00 - 0.88 (m, 3H), 0.87 - 0.80 (m, 1H) 。

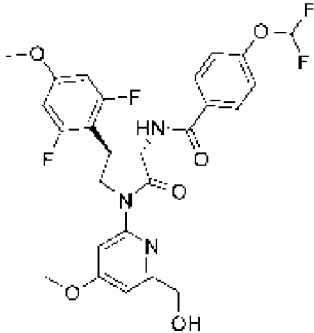
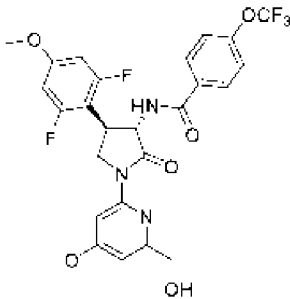
576		644.2	方法F， RT = 2.488 min，99%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.23 - 9.04 (m, 1H), 8.00 - 7.92 (m, 2H), 7.74 - 7.64 (m, 1H), 7.53 - 7.44 (m, 2H), 6.81 - 6.76 (m, 2H), 6.32 - 6.24 (m, 1H), 5.37 - 4.86 (m, 1H), 4.36 - 4.26 (m, 2H), 4.26 - 4.14 (m, 1H), 4.26 - 4.07 (m, 2H), 3.79 - 3.74 (2s, 3H), 3.61 - 3.53 (m, 2H), 3.07 - 3.04 (2s, 3H), 2.22 - 2.06 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)
577		538.2	方法D， RT = 2.596 min，100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.95 - 8.88 (m, 1H), 7.92 - 7.88 (m, 2H), 7.75 - 7.70 (m, 1H), 7.47 - 7.07 (m, 5H), 6.96 - 6.85 (m, 2H), 6.33 - 6.27 (m, 1H), 5.22 - 4.68 (m, 2H), 4.06 - 3.80 (m, 2H), 3.73 - 3.68 (2s, 3H), 3.60 - 3.39 (m, 1H), 2.37 - 2.21 (m, 4H), 2.19 - 2.07 (2s, 3H), 1.82 - 1.77 (m, 2H)。(可互相轉化之阻轉異構物之混合物)

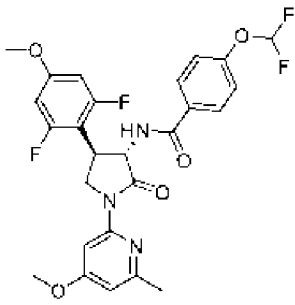
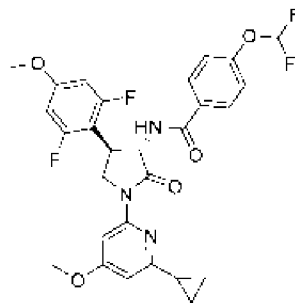
578		558.3	方法D， RT = 2.358 min，99%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.06 - 9.02 (m, 1H), 8.02 - 7.98 (m, 2H), 7.76 - 7.72 (m, 1H), 7.54 - 7.44 (m, 2H), 7.41 - 7.28 (m, 2H), 6.93 - 6.88 (m, 2H), 6.36 - 6.32 (m, 1H), 5.58 - 5.17 (m, 1H), 4.95 - 4.65 (m, 4H), 4.09 - 4.01 (m, 1H), 3.96 - 3.77 (m, 2H), 3.75 - 3.70 (m, 3H), 3.69 - 3.42 (m, 1H), 2.26 - 2.10 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)
579		615.1	方法D， RT = 1.693 min，94%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.11 - 8.92 (m, 1H), 7.93 - 7.85 (m, 2H), 7.82 - 7.73 (m, 1H), 7.54 - 7.11 (m, 3H), 6.82 - 6.72 (m, 2H), 6.36 - 6.24 (m, 2H), 5.37 - 4.83 (m, 3H), 4.32 - 4.04 (m, 2H), 3.79 - 3.74 (2s, 3H), 3.57 - 3.48 (m, 1H), 2.25 - 2.20 (2s, 3H), 2.21 - 2.08 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)

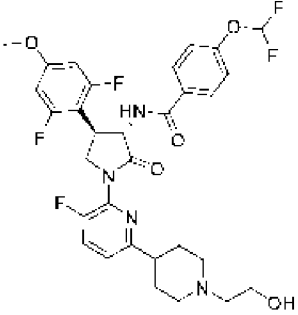
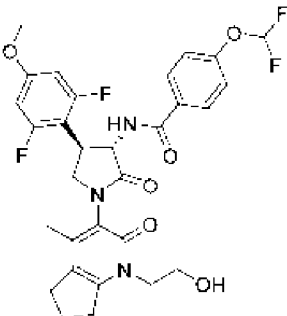
580		575.1	方法D， RT = 1.977 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.07 (d, <i>J</i> = 8.3 Hz, 1H), 7.90 (d, <i>J</i> = 8.6 Hz, 2H), 7.68 - 7.60 (m, 2H), 7.35 (t, <i>J</i> = 73.6 Hz, 1H), 7.28 (d, <i>J</i> = 8.6 Hz, 2H), 6.79 (d, <i>J</i> = 10.8 Hz, 2H), 6.65 - 6.57 (m, 1H), 5.10 (dd, <i>J</i> = 10.9, 8.4 Hz, 1H), 4.50 - 4.39 (m, 1H), 4.15 - 4.01 (m, 1H), 3.98 - 3.87 (m, 1H), 3.78 (s, 3H), 3.74 - 3.63 (m, 4H), 3.48 - 3.39 (m, 4H)。
581		546.2	方法F， RT = 2.40 min，99%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.20 - 8.90 (m, 1H), 7.91 - 7.74 (m, 2H), 7.64 - 7.36 (m, 3H), 6.82 - 6.64 (m, 2H), 6.27 - 6.07 (m, 1H), 5.36 - 4.81 (m, 2H), 4.28 - 3.82 (m, 4H), 3.80 - 3.73 (2s, 3H), 3.69 - 3.46 (m, 2H), 2.23 - 2.04 (2s, 3H), 1.16 - 0.98 (m, 3H)。(可互相轉化之阻轉異構物之混合物)

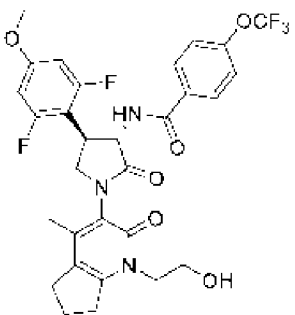
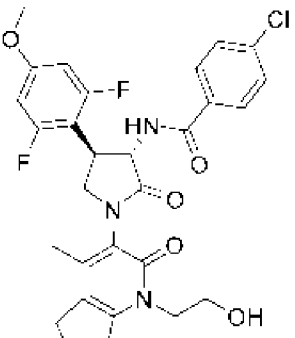
582		618.2	方法D， RT = 1.757 min， 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.01 (br d, <i>J</i> = 8.5 Hz, 1H), 7.89 (d, <i>J</i> = 8.5 Hz, 2H), 7.74 - 7.61 (m, 2H), 7.35 (t, <i>J</i> = 76.4 Hz, 1H), 7.27 (d, <i>J</i> = 8.5 Hz, 2H), 6.82 - 6.74 (m, 1H), 6.77 (br d, <i>J</i> = 11.0 Hz, 1H), 6.38 (t, <i>J</i> = 7.0 Hz, 1H), 5.09 (br t, <i>J</i> = 9.3 Hz, 1H), 4.49 - 4.42 (m, 1H), 4.37 - 4.33 (m, 1H), 4.15 - 4.01 (m, 3H), 3.99 - 3.90 (m, 1H), 3.87 - 3.84 (m, 1H), 3.77 (s, 3H) °
583		618.2	方法D， RT = 1.744 min， 97.2%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.01 (br d, <i>J</i> = 8.5 Hz, 1H), 7.89 (d, <i>J</i> = 8.5 Hz, 2H), 7.74 - 7.61 (m, 2H), 7.35 (t, <i>J</i> = 76.4 Hz, 1H), 7.27 (d, <i>J</i> = 8.5 Hz, 2H), 6.82 - 6.74 (m, 1H), 6.77 (br d, <i>J</i> = 11.0 Hz, 1H), 6.38 (t, <i>J</i> = 7.0 Hz, 1H), 5.09 (br t, <i>J</i> = 9.3 Hz, 1H), 4.49 - 4.42 (m, 1H), 4.37 - 4.33 (m, 1H), 4.15 - 4.01 (m, 3H), 3.99 - 3.90 (m, 1H), 3.87 - 3.84 (m, 1H), 3.77 (s, 3H) °

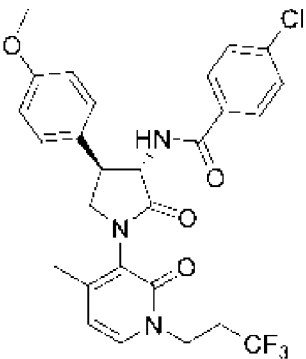
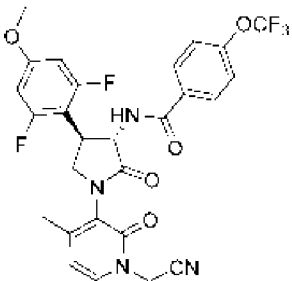
584		596.1	方法D， RT = 2.103 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.18 (d, <i>J</i> = 8.3 Hz, 1H), 7.95 (d, <i>J</i> = 8.8 Hz, 2H), 7.79 (d, <i>J</i> = 2.0 Hz, 1H), 7.51 (d, <i>J</i> = 8.8 Hz, 2H), 7.04 - 7.02 (d, <i>J</i> = 2.0 Hz, 1H), 6.80 (d, <i>J</i> = 10.8 Hz, 2H), 5.33 - 5.13 (m, 1H), 5.09 (dd, <i>J</i> = 11.0, 8.3 Hz, 1H), 4.50 (br t, <i>J</i> = 9.9 Hz, 1H), 4.16 - 4.07 (m, 1H), 3.98 - 3.91 (m, 1H), 3.85 (s, 3H), 3.78 (s, 3H), 1.42 (s, 3H), 1.41 (s, 3H)。
585		578.1	方法D， RT = 1.924 min， 93.8%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.08 (d, <i>J</i> = 8.3 Hz, 1H), 7.89 (d, <i>J</i> = 8.8 Hz, 2H), 7.80 (d, <i>J</i> = 2.2 Hz, 1H), 7.34 (t, <i>J</i> = 76.0 Hz, 1H), 7.29 (d, <i>J</i> = 8.8 Hz, 2H), 7.02 (d, <i>J</i> = 2.2 Hz, 1H), 6.80 (d, <i>J</i> = 10.8 Hz, 2H), 5.33 - 5.13 (m, 1H), 5.07 (dd, <i>J</i> = 11.0, 8.1 Hz, 1H), 4.54 - 4.44 (m, 1H), 4.17 - 4.05 (m, 1H), 3.99 - 3.90 (m, 1H), 3.85 (s, 3H), 3.78 (s, 3H), 1.42 (s, 3H), 1.41 (s, 3H)。

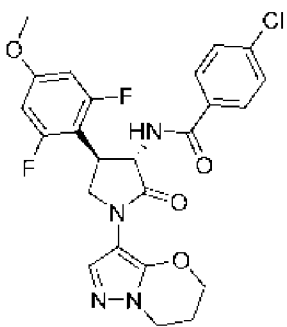
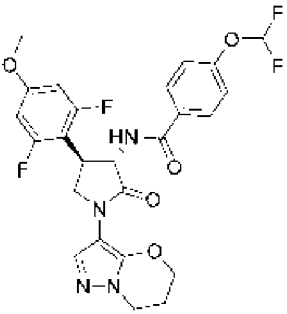
586		550.1	方法C , RT = 1.508 min , 98.1%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.09 (d, <i>J</i> = 8.3 Hz, 1H), 7.89 (d, <i>J</i> = 8.8 Hz, 2H), 7.82 (d, <i>J</i> = 2.2 Hz, 1H), 7.34 (t, <i>J</i> = 76.0 Hz, 1H), 7.29 (d, <i>J</i> = 8.8 Hz, 2H), 6.88 (d, <i>J</i> = 2.2 Hz, 1H), 6.79 (d, <i>J</i> = 10.8 Hz, 2H), 5.43 - 5.39 (m, 1H), 5.08 (dd, <i>J</i> = 11.1, 8.2 Hz, 1H), 4.46 (d, <i>J</i> = 5.9 Hz, 2H), 4.43 - 4.38 (m, 1H), 4.10 (q, <i>J</i> = 10.1 Hz, 1H), 3.98 - 3.91 (m, 1H), 3.86 (s, 3H), 3.78 (s, 3H) °
587		568.1	方法D , RT = 1.895 min , 98.4%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.19 (d, <i>J</i> = 8.1 Hz, 1H), 7.95 (d, <i>J</i> = 8.8 Hz, 2H), 7.81 (d, <i>J</i> = 2.0 Hz, 1H), 7.51 (d, <i>J</i> = 8.1 Hz, 2H), 6.88 (d, <i>J</i> = 2.0 Hz, 1H), 6.80 (d, <i>J</i> = 10.8 Hz, 2H), 5.48 - 5.35 (m, 1H), 5.09 (dd, <i>J</i> = 10.8, 8.3 Hz, 1H), 4.46 (d, <i>J</i> = 5.9 Hz, 2H), 4.44 - 4.39 (m, 1H), 4.15 - 4.04 (m, 1H), 3.98 - 3.90 (m, 1H), 3.87 - 3.84 (m, 3H), 3.78 (s, 3H) °

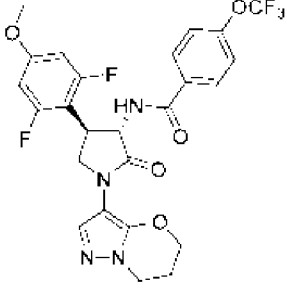
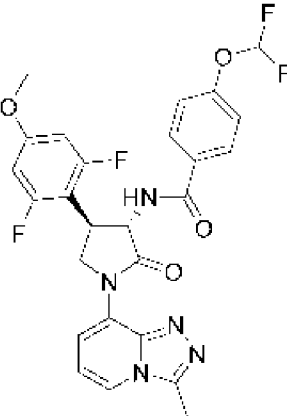
588		534.1	方法D , RT = 2.060 min , 96.8%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.09 (d, <i>J</i> = 8.1 Hz, 1H), 7.89 (d, <i>J</i> = 8.8 Hz, 2H), 7.78 (d, <i>J</i> = 2.2 Hz, 1H), 7.34 (t, <i>J</i> = 76.0 Hz, 1H), 7.29 (d, <i>J</i> = 8.8 Hz, 2H), 6.79 (d, <i>J</i> = 11.0 Hz, 2H), 6.72 (d, <i>J</i> = 2.2 Hz, 1H), 5.07 (dd, <i>J</i> = 11.0, 8.3 Hz, 1H), 4.46 - 4.39 (m, 1H), 4.14 - 4.04 (m, 1H), 3.99 - 3.92 (m, 1H), 3.83 (s, 3H), 3.78 (s, 3H), 2.39 (s, 3H) 。
589		560.2	方法D , RT = 2.253 min , 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.06 (d, <i>J</i> = 8.3 Hz, 1H), 7.92 - 7.84 (m, 2H), 7.72 (d, <i>J</i> = 2.0 Hz, 1H), 7.34 (t, <i>J</i> = 76.0 Hz, 1H), 7.28 (d, <i>J</i> = 9.0 Hz, 2H), 6.78 (d, <i>J</i> = 2.0 Hz, 2H), 6.72 (d, <i>J</i> = 2.2 Hz, 1H), 5.06 (dd, <i>J</i> = 11.1, 8.4 Hz, 1H), 4.40 (t, <i>J</i> = 9.9 Hz, 1H), 4.07 (q, <i>J</i> = 10.0 Hz, 1H), 3.91 - 3.84 (m, 1H), 3.83 (s, 3H), 3.78 (s, 3H), 2.07 - 1.97 (m, 1H), 0.99 - 0.92 (m, 2H), 0.91 - 0.85 (m, 2H) 。

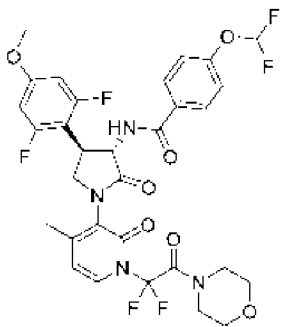
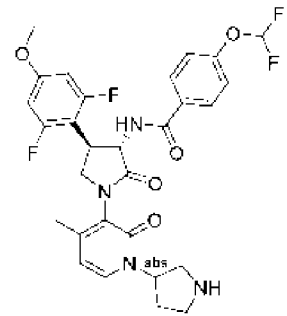
590		635.2	方法D， RT = 1.43 min，98%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.09 (d, <i>J</i> = 9.0 Hz, 1H), 7.95 - 7.84 (m, 2H), 7.78 (dd, <i>J</i> = 9.8, 8.5 Hz, 1H), 7.34 (t, <i>J</i> = 74.0 Hz, 1H), 7.32 - 7.27 (m, 3H), 6.79 (d, <i>J</i> = 10.8 Hz, 2H), 5.12 -5.10 (m, 1H), 4.35 (t, <i>J</i> = 5.4 Hz, 1H), 4.28 - 4.16 (m, 2H), 4.13 - 3.99 (m, 1H), 3.77 (s, 3H), 3.50 (q, <i>J</i> = 6.4 Hz, 2H), 3.17 (d, <i>J</i> = 5.3 Hz, 1H), 2.99 - 2.89 (m, 2H), 2.71 - 2.64 (m, 1H), 2.40 (t, <i>J</i> = 6.4 Hz, 2H), 2.10 - 2.00 (m, 2H), 1.85 - 1.64 (m, 3H)。
591		604.1	方法D， RT = 1.656 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.18 - 8.84 (m, 1H), 7.99 - 7.82 (m, 2H), 7.55 - 7.15 (2t, <i>J</i> = 74.3 Hz, 1H), 7.28 - 7.24 (m, 2H), 6.80 - 6.74 (m, 2H), 5.41 - 4.85 (m, 2H), 4.30 - 3.88 (m, 4H), 3.80 - 3.72 (2s, 3H), 3.63 (quin, <i>J</i> = 5.1 Hz, 2H), 3.50 - 3.41 (m, 1H), 3.06 (br t, <i>J</i> = 7.2 Hz, 2H), 2.83 - 2.68 (m, 2H), 2.18 - 1.94 (m, 5H)。(可互相轉化之阻轉異構物之混合物)

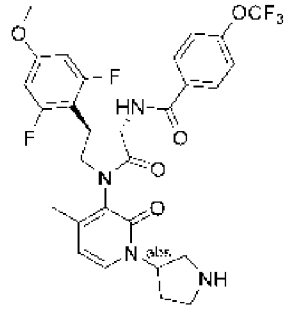
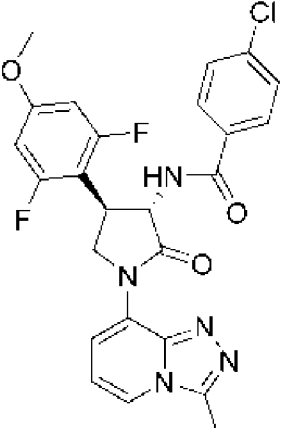
592		622.1	方法D， RT = 1.788 min， 98.6%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.33 - 8.91 (m, 1H), 8.04 - 7.82 (m, 2H), 7.60 - 7.33 (m, 2H), 6.81 - 6.75 (m, 2H), 5.41 - 4.85 (m, 2H), 4.30 - 3.88 (m, 4H), 3.80 - 3.72 (2s, 3H), 3.64 - 3.61 (m, 2H), 3.50 - 3.41 (m, 1H), 3.08 - 3.04 (m, 2H), 2.83 - 2.68 (m, 2H), 2.18 - 1.94 (m, 5H)。 (可互相轉化之阻轉異構物之混合物)
593		572.1	方法D， RT = 1.649 min， 99.9%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.25 - 8.91 (m, 1H), 7.91 - 7.70 (m, 2H), 7.64 - 7.42 (m, 2H), 6.81 - 6.75 (m, 2H), 5.41 - 4.81 (m, 2H), 4.29 - 3.84 (m, 4H), 3.80 - 3.71 (2s, 3H), 3.65 - 3.61 (m, 2H), 3.52 - 3.39 (m, 1H), 3.12 - 2.99 (m, 2H), 2.80 - 2.67 (m, 2H), 2.15 - 1.90 (m, 5H)。 (可互相轉化之阻轉異構物之混合物)

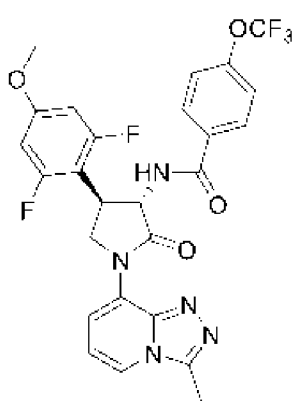
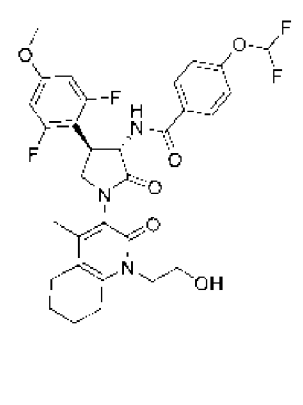
594		548.2	方法D， RT = 2.609 min，99%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.02 - 8.95 (m, 1H), 7.83 (d, <i>J</i> = 8.5 Hz, 2H), 7.64 - 7.59 (m, 1H), 7.56 - 7.49 (m, 2H), 7.38 - 7.29 (m, 2H), 6.93 - 6.84 (m, 2H), 6.30 - 6.26 (m, 1H), 5.21 - 4.74 (m, 1H), 4.18 - 4.10 (m, 1H), 4.21 - 3.98 (m, 1H), 3.96 - 3.81 (m, 2H), 3.72 - 3.68 (2s, 3H), 3.63 - 3.42 (m, 1H), 2.78 - 2.63 (m, 2H), 2.21 - 2.06 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)
595		577.2	方法D， RT = 2.167 min，99%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.35 - 8.94 (m, 1H), 8.02 - 7.91 (m, 2H), 7.78 - 7.71 (m, 1H), 7.54 - 7.44 (m, 2H), 6.85 - 6.73 (m, 2H), 6.43 - 6.32 (m, 1H), 5.39 - 4.82 (m, 3H), 4.33 - 4.22 (m, 1H), 4.20 - 4.05 (m, 1H), 3.81 - 3.74 (2s, 3H), 3.63 - 3.52 (m, 1H), 2.27 - 2.05 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)

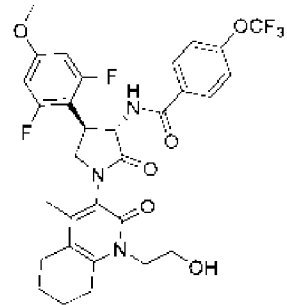
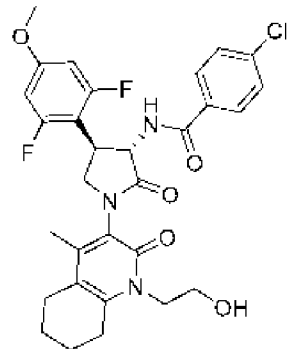
596		503.1	方法D , RT = 1.319 min , 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.05 (d, <i>J</i> = 8.6 Hz, 1H), 8.03 (s, 1H), 7.82 (d, <i>J</i> = 8.8 Hz, 2H), 7.56 (d, <i>J</i> = 8.6 Hz, 2H), 6.77 (d, <i>J</i> = 10.8 Hz, 2H), 5.00 (dd, <i>J</i> = 10.6, 8.7 Hz, 1H), 4.28 - 4.20 (m, 1H), 4.02 (q, <i>J</i> = 9.6 Hz, 1H), 3.91 - 3.84 (m, 1H), 3.79 (t, <i>J</i> = 7.0 Hz, 2H), 3.76 (s, 3H), 3.75 - 3.71 (m, 2H), 2.55 - 2.52 (m, 1H), 2.49 - 2.46 (m, 1H) °
597		535.2	方法D , RT = 1.308 min , 93.5%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.03 - 8.94 (m, 1H), 8.03 (s, 1H), 7.88 (d, <i>J</i> = 8.6 Hz, 2H), 7.34 (t, <i>J</i> = 76.0 Hz, 1H), 7.27 (d, <i>J</i> = 8.6 Hz, 2H), 6.77 (d, <i>J</i> = 10.8 Hz, 2H), 5.00 (dd, <i>J</i> = 10.6, 8.7 Hz, 1H), 4.28 - 4.20 (m, 1H), 4.02 (q, <i>J</i> = 9.6 Hz, 1H), 3.91 - 3.84 (m, 1H), 3.79 (t, <i>J</i> = 7.0 Hz, 2H), 3.76 (s, 3H), 3.75 - 3.71 (m, 2H), 2.55 - 2.52 (m, 1H), 2.49 - 2.46 (m, 1H) °

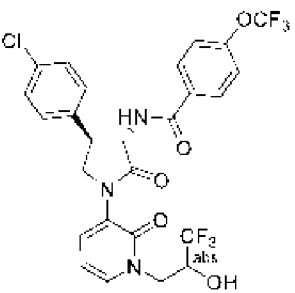
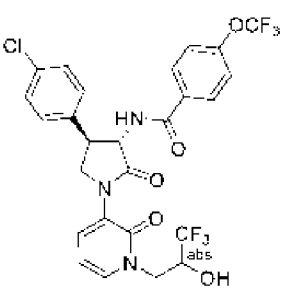
598		553.1	方法D , RT = 1.412 min , 97%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.09 (d, <i>J</i> = 8.6 Hz, 1H), 8.03 (s, 1H), 7.94 (d, <i>J</i> = 8.8 Hz, 2H), 7.49 (d, <i>J</i> = 8.8 Hz, 2H), 6.77 (d, <i>J</i> = 10.8 Hz, 2H), 5.00 (dd, <i>J</i> = 10.6, 8.7 Hz, 1H), 4.28 - 4.20 (m, 1H), 4.02 (q, <i>J</i> = 9.6 Hz, 1H), 3.91 - 3.84 (m, 1H), 3.79 (t, <i>J</i> = 7.0 Hz, 2H), 3.76 (s, 3H), 3.75 - 3.71 (m, 2H), 2.55 - 2.52 (m, 1H), 2.49 - 2.46 (m, 1H) 。
599		544.1	方法C , RT = 1.557 min , 99.1%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.09 (d, <i>J</i> = 8.5 Hz, 1H), 8.30 (dd, <i>J</i> = 6.9, 0.9 Hz, 1H), 7.90 (d, <i>J</i> = 8.8 Hz, 2H), 7.67 (dd, <i>J</i> = 7.3, 0.9 Hz, 1H), 7.35 (t, <i>J</i> = 72.8 Hz, 1H), 7.28 (d, <i>J</i> = 8.8 Hz, 2H), 7.06 (t, <i>J</i> = 7.0 Hz, 1H), 6.80 (d, <i>J</i> = 10.8 Hz, 2H), 5.16 (dd, <i>J</i> = 11.1, 8.4 Hz, 1H), 4.67 - 4.57 (m, 1H), 4.42 (t, <i>J</i> = 10.3 Hz, 1H), 4.24 (q, <i>J</i> = 10.3 Hz, 1H), 3.78 (s, 3H), 2.71 (s, 3H) 。

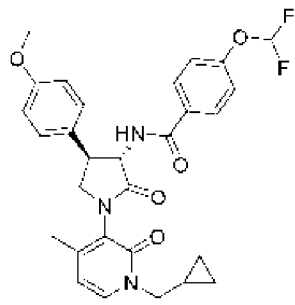
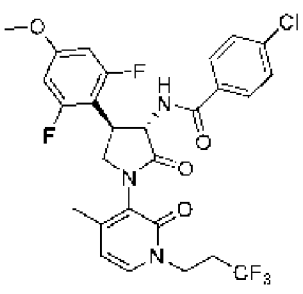
600		683.1	方法D， RT = 1.644 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.12 - 8.94 (m, 1H), 7.96 - 7.82 (m, 3H), 7.55 - 7.11 (m, 3H), 6.83 - 6.68 (m, 2H), 6.57 - 6.46 (m, 1H), 5.31 - 4.76 (m, 1H), 4.32 - 3.96 (m, 2H), 3.78 - 3.74 (2s, 3H), 3.65 - 3.46 (m, 6H), 3.37 - 3.34 (m, 1H), 2.30 - 2.10 (2s, 3H), 1.66 - 1.60 (m, 1H), 1.31 - 1.16 (m, 1H)。(可互相轉化之阻轉異構物之混合物)
601		589.2	方法D， RT = 1.422 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.13 - 8.89 (m, 1H), 7.96 - 7.83 (m, 2H), 7.77 - 7.67 (m, 1H), 7.54 - 7.10 (m, 3H), 6.84 - 6.70 (m, 2H), 6.33 - 6.22 (m, 1H), 5.36 - 4.84 (m, 2H), 4.27 - 4.10 (m, 2H), 3.78 - 3.75 (2s, 3H), 3.52 - 3.49 (m, 3H), 3.15 - 3.05 (m, 2H), 2.88 - 2.77 (m, 2H), 2.27 - 2.02 (2s, 3H), 1.80 - 1.68 (m, 1H)。(可互相轉化之阻轉異構物之混合物)

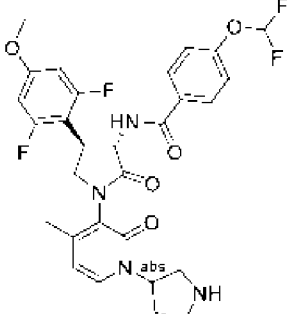
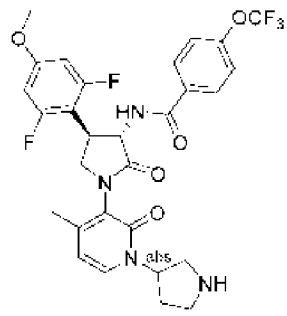
602		607.1	方法D， RT = 1.586 min，95%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.25 - 8.96 (m, 1H), 8.05 - 7.87 (m, 2H), 7.77 - 7.65 (m, 1H), 7.57 - 7.38 (m, 2H), 6.77 (m, 2H), 6.27 (m, 1H), 5.40 - 5.14 (m, 1H), 4.93 - 4.07 (m, 3H), 3.80 - 3.72 (2s, 3H), 3.53 - 3.49 (m, 3H), 3.13 - 2.99 (m, 2H), 2.90 - 2.74 (m, 2H), 2.27 - 2.00 (2s, 3H), 1.81 - 1.60 (m, 1H)。(可互相轉化之阻轉異構物之混合物)
603		512.1	方法C， RT = 1.625 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.16 (d, <i>J</i> = 8.5 Hz, 1H), 8.30 (dd, <i>J</i> = 6.8, 0.8 Hz, 1H), 7.94 - 7.80 (m, 2H), 7.68 (dd, <i>J</i> = 7.3, 0.8 Hz, 1H), 7.62 - 7.51 (m, 2H), 7.07 (t, <i>J</i> = 7.0 Hz, 1H), 6.81 (d, <i>J</i> = 10.8 Hz, 2H), 5.18 (dd, <i>J</i> = 11.1, 8.4 Hz, 1H), 4.70 - 4.55 (m, 1H), 4.42 (t, <i>J</i> = 10.1 Hz, 1H), 4.24 (q, <i>J</i> = 10.1 Hz, 1H), 3.78 (s, 3H), 2.72 (s, 3H)。

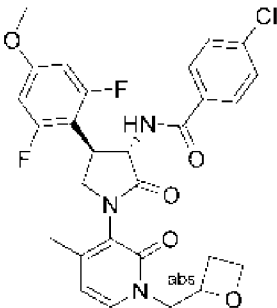
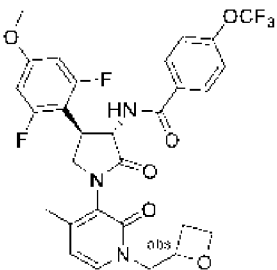
604		562.1	方法C， RT = 1.728 min， 99.7%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.20 (d, <i>J</i> = 8.3 Hz, 1H), 8.31 (dd, <i>J</i> = 6.8, 0.8 Hz, 1H), 8.04 - 7.87 (m, 2H), 7.68 (dd, <i>J</i> = 7.3, 0.8 Hz, 1H), 7.57 - 7.41 (m, 2H), 7.07 (t, <i>J</i> = 7.0 Hz, 1H), 6.81 (d, <i>J</i> = 10.8 Hz, 2H), 5.19 (dd, <i>J</i> = 11.1, 8.4 Hz, 1H), 4.68 - 4.55 (m, 1H), 4.42 (t, <i>J</i> = 10.0 Hz, 1H), 4.25 (q, <i>J</i> = 10.1 Hz, 1H), 3.79 (s, 3H), 2.72 (s, 3H)。
605		618.2	方法D， RT = 1.791 min， 99.9%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.14 - 8.90 (m, 1H), 7.96 - 7.77 (m, 2H), 7.54 - 7.14 (2t, <i>J</i> = 74.3 Hz, 1H), 7.28 - 7.24 (m, 2H), 6.82 - 6.68 (m, 2H), 5.40 - 4.82 (m, 2H), 4.30 - 4.00 (m, 4H), 3.78 - 3.72 (2s, 3H), 3.61 (quin, <i>J</i> = 5.8 Hz, 2H), 3.51 - 3.41 (m, 1H), 2.85 - 2.80 (m, 2H), 2.47 - 2.40 (m, 2H), 2.14 - 1.93 (2s, 3H), 1.81 - 1.61 (m, 4H)。(可互相轉化之 阻轉異構物之混合物)

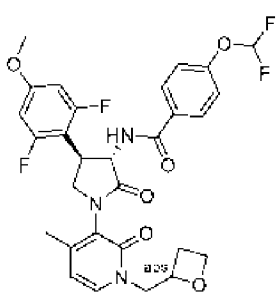
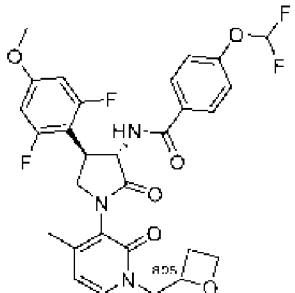
606		636.1	方法D， RT = 1.766 min， 94.5%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.26 - 8.98 (m, 1H), 8.02 - 7.84 (m, 2H), 7.56 - 7.37 (m, 2H), 6.84 - 6.66 (m, 2H), 5.41 - 4.80 (m, 2H), 4.28 - 3.99 (m, 4H), 3.81 - 3.73 (2s, 3H), 3.61 (quin, <i>J</i> = 5.8 Hz, 2H), 3.50 - 3.42 (m, 1H), 2.89 - 2.77 (m, 2H), 2.47 - 2.38 (m, 2H), 2.14 - 1.91 (2s, 3H), 1.80 - 1.57 (m, 4H)。 (可互相轉化之阻轉 異構物之混合物)
607		586.1	方法D， RT = 1.629 min， 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.21 - 8.93 (m, 1H), 7.92 - 7.76 (m, 2H), 7.67 - 7.46 (m, 2H), 6.83 - 6.69 (m, 2H), 5.41 - 4.87 (m, 2H), 4.29 - 3.99 (m, 4H), 3.79 - 3.72 (2s, 3H), 3.60 (quin, <i>J</i> = 5.8 Hz, 2H), 3.49 - 3.42 (m, 1H), 2.90 - 2.75 (m, 2H), 2.47 - 2.39 (m, 2H), 2.14 - 1.91 (2s, 3H), 1.81 - 1.54 (m, 4H)。 (可互相轉化之阻轉 異構物之混合物)

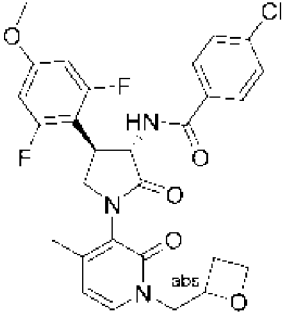
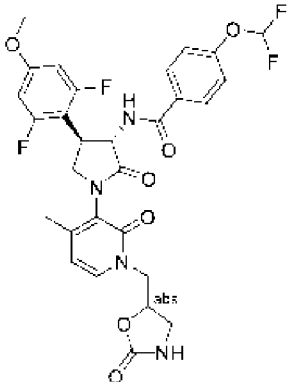
608		604.2	方法D , RT = 2.015 min , 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.08 (d, <i>J</i> = 8.5 Hz, 1H), 8.03 - 7.96 (m, 2H), 7.72 - 7.64 (m, 2H), 7.49 (d, <i>J</i> = 9.0 Hz, 4H), 7.46 - 7.39 (m, 2H), 6.38 (t, <i>J</i> = 7.0 Hz, 1H), 5.04 (dd, <i>J</i> = 11.0, 8.5 Hz, 1H), 4.45 (dd, <i>J</i> = 13.1, 2.5 Hz, 1H), 4.40 - 4.28 (m, 1H), 4.19 - 4.09 (m, 1H), 3.92 - 3.79 (m, 3H), 3.51 - 3.40 (m, 1H) °
609		604.2	方法D , RT = 2.029 min , 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.08 (d, <i>J</i> = 8.5 Hz, 1H), 8.03 - 7.96 (m, 2H), 7.72 - 7.64 (m, 2H), 7.49 (d, <i>J</i> = 9.0 Hz, 4H), 7.46 - 7.39 (m, 2H), 6.38 (t, <i>J</i> = 7.0 Hz, 1H), 5.04 (dd, <i>J</i> = 11.0, 8.5 Hz, 1H), 4.45 (dd, <i>J</i> = 13.1, 2.5 Hz, 1H), 4.40 - 4.28 (m, 1H), 4.19 - 4.09 (m, 1H), 3.92 - 3.79 (m, 3H), 3.51 - 3.40 (m, 1H) °

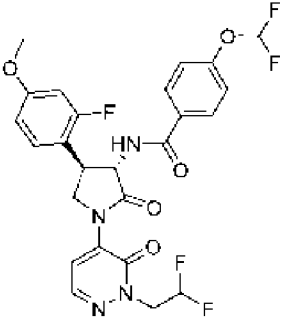
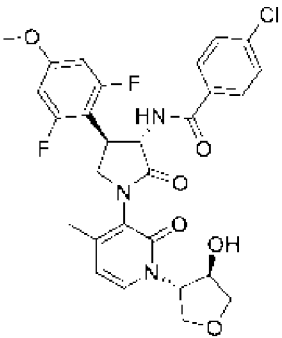
610		538.2	方法F， RT = 2.51 min，99%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.03 (m, 1H), 7.99 - 7.89 (m, 2H), 7.72 - 7.64 (m, 1H), 7.55 - 7.06 (m, 5H), 6.93 - 6.89 (m, 2H), 6.22 (d, <i>J</i> = 6.8 Hz, 1H), 5.29 - 4.62 (m, 1H), 4.13 - 3.81 (m, 2H), 3.79 - 3.75 (2s, 3H) 3.69 - 3.59 (m, 2H), 3.46-3.40 (m, 1H), 2.25 - 2.04 (2s, 3H), 1.22-1.20 (m, 1H), 0.49 - 0.47 (m, 4H)。(可互相轉化之阻轉異構物之混合物)
611		584.2	方法F， RT = 2.65 min，99%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.21 - 9.00 (m, 1H), 7.91 - 7.79 (m, 2H), 7.69 (d, <i>J</i> = 7.0 Hz, 1H), 7.61, - 7.51 (m, 2H), 6.78 (br d, <i>J</i> = 10.5 Hz, 2H), 6.27 (d, <i>J</i> = 7.0 Hz, 1H), 5.40 - 4.85 (m, 1H), 4.33 - 4.06 (m, 4H), 3.80 - 3.74 (2s, 3H), 3.56 - 3.47 (m, 1H), 2.83 - 2.68 (m, 2H), 2.25 - 2.04 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)

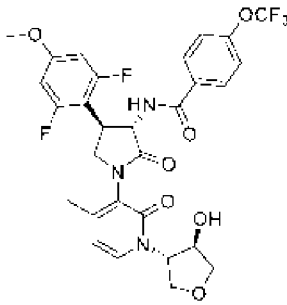
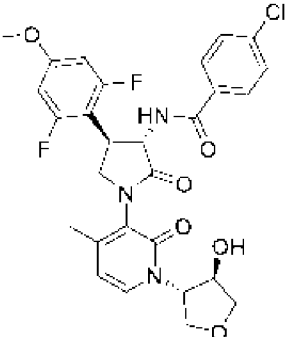
612		589.1	方法D， RT = 1.34 min，93%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.13 - 8.86 (m, 1H), 7.95 - 7.80 (m, 2H), 7.78 - 7.66 (m, 1H), 7.56 - 7.12 (m, 3H), 6.82 - 6.65 (m, 2H), 6.32 - 6.17 (m, 1H), 5.36 - 4.89 (m, 2H), 4.30 - 4.07 (m, 3H), 3.80 - 3.72 (2s, 3H), 3.49 (t, <i>J</i> = 8.4 Hz, 1H), 3.14 - 3.01 (m, 2H), 2.88 - 2.75 (m, 2H), 2.26 - 2.13 (m, 4H), 1.77 - 1.62 (m, 1H)。 (可互相轉化之阻轉異構物之混合物)
613		607.2	方法D， RT = 1.527 min，95%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.25 - 9.00 (m, 1H), 8.00 - 7.85 (m, 2H), 7.78 - 7.65 (m, 1H), 7.55 - 7.40 (m, 2H), 6.88 - 6.69 (m, 2H), 6.34 - 6.18 (m, 1H), 5.37 - 4.82 (m, 2H), 4.30 - 4.06 (m, 3H), 3.79 - 3.72 (2s, 3H), 3.50 (t, <i>J</i> = 8.1 Hz, 1H), 3.16 - 2.99 (m, 2H), 2.88 - 2.78 (m, 2H), 2.25 - 2.00 (m, 4H), 1.78 - 1.63 (m, 1H)。 (可互相轉化之阻轉異構物之混合物)

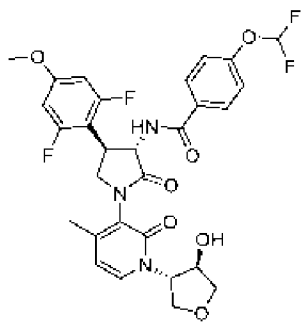
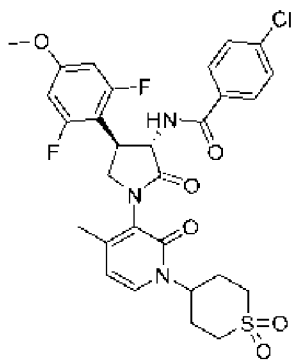
614		558.1	方法D , RT = 1.611 min , 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.21 - 8.94 (m, 1H), 7.90 - 7.78 (m, 2H), 7.71 - 7.48 (m, 3H), 6.83 - 6.70 (m, 2H), 6.31 - 6.15 (m, 1H), 5.35 - 4.83 (m, 2H), 4.53 - 4.45 (m, 1H), 4.39 (qd, J = 9.1, 5.7 Hz, 1H), 4.30 - 4.06 (m, 4H), 3.82 - 3.70 (2s, 3H), 3.55 - 3.48 (m, 1H), 2.69 - 2.61 (m, 1H), 2.40 - 2.34 (m, 1H), 2.26 - 2.04 (2s, 3H) 。 (可互相轉化之阻轉異構物之混合物)
615		608.1	方法D , RT = 1.759 min , 97.1%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.28 - 8.90 (m, 1H), 8.03 - 7.84 (m, 2H), 7.70 - 7.56 (m, 1H), 7.52 - 7.37 (m, 2H), 6.86 - 6.65 (m, 2H), 6.30 - 6.15 (m, 1H), 5.41 - 4.80 (m, 2H), 4.55 - 4.45 (m, 1H), 4.43 - 4.33 (m, 1H), 4.31 - 4.06 (m, 4H), 3.82 - 3.70 (2s, 3H), 3.60 - 3.44 (m, 1H), 2.72 - 2.61 (m, 1H), 2.39 - 2.30 (m, 1H), 2.24 - 1.96 (2s, 3H) 。 (可互相轉化之阻轉異構物之混合物)

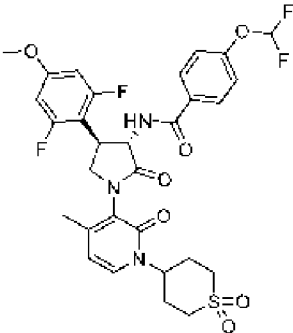
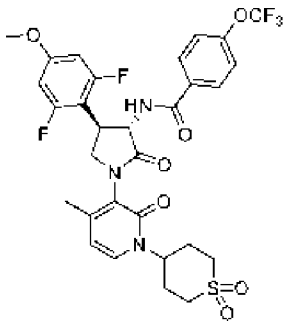
616		590.1	方法D， RT = 1.579 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.19 - 8.84 (m, 1H), 7.97 - 7.78 (m, 2H), 7.71 - 7.57 (m, 1H), 7.34 (t, J = 74.3 Hz, 1H), 7.28 - 7.24 (m, 2H), 6.81 - 6.75 (m, 2H), 6.31 - 6.16 (m, 1H), 5.39 - 4.78 (m, 2H), 4.55 - 4.45 (m, 1H), 4.41 - 4.36 (m, 1H), 4.30 - 4.04 (m, 4H), 3.80 - 3.68 (2s, 3H), 3.57 - 3.46 (m, 1H), 2.70 - 2.59 (m, 1H), 2.40 - 2.32 (m, 1H), 2.23 - 2.01 (2s, 3H)。 (可互相轉化之阻轉異構物之混合物)
617		590.1	方法D， RT = 1.597 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.16 - 8.86 (m, 1H), 7.97 - 7.81 (m, 2H), 7.69 - 7.57 (m, 1H), 7.34 (t, J = 74.3 Hz, 1H), 7.28 - 7.24 (m, 2H), 6.81 - 6.75 (m, 2H), 6.31 - 6.14 (m, 1H), 5.38 - 4.82 (m, 2H), 4.54 - 4.43 (m, 1H), 4.41 - 4.33 (m, 1H), 4.31 - 4.08 (m, 4H), 3.81 - 3.74 (2s, 3H), 3.56 - 3.45 (m, 1H), 2.68 - 2.62 (m, 1H), 2.40 - 2.32 (m, 1H), 2.22 - 2.01 (2s, 3H)。 (可互相轉化之阻轉異構物之混合物)

618		558.1	方法D， RT = 1.616 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.23 - 8.86 (m, 1H), 7.93 - 7.76 (m, 2H), 7.71 - 7.38 (m, 3H), 6.81 - 6.75 (m, 2H), 6.32 - 6.12 (m, 1H), 5.41 - 4.78 (m, 2H), 4.57 - 4.44 (m, 1H), 4.42 - 4.31 (m, 1H), 4.29 - 4.06 (m, 4H), 3.81 - 3.70 (2s, 3H), 3.54 - 3.44 (m, 1H), 2.70 - 2.62 (m, 1H), 2.38 - 2.30 (m, 1H), 2.25 - 1.96 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)
619		619.1	方法D， RT = 1.484 min， 94.4%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.15 - 8.87 (m, 1H), 7.99 - 7.84 (m, 2H), 7.71 - 7.56 (m, 2H), 7.34 (t, J = 74.3 Hz, 1H), 7.28 - 7.24 (m, 1H), 6.81 - 6.75 (m, 2H), 6.37 - 6.19 (m, 1H), 5.38 - 4.81 (m, 2H), 4.34 - 4.09 (m, 4H), 3.80 - 3.75 (2s, 3H), 3.64 - 3.50 (m, 3H), 3.27 - 3.19 (m, 1H), 2.25 - 2.06 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)

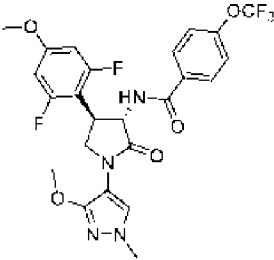
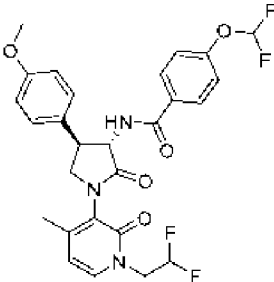
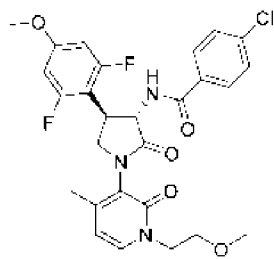
620		553.1	方法D , RT = 1.75min , 96%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.97 (d, <i>J</i> = 8.6 Hz, 1H), 8.05 (d, <i>J</i> = 4.9 Hz, 1H), 7.94 - 7.84 (m, 2H), 7.78 (d, <i>J</i> = 4.6 Hz, 1H), 7.56 - 7.52 (m, 2H), 7.39 (t, <i>J</i> = 74.0 Hz, 1H), 7.27 - 7.25 (m, 1H) 6.85 - 6.77 (m, 2H), 6.40 (tt, <i>J</i> = 52.6, 4.8 Hz, 1H), 5.12 - 5.09 (m, 1H), 4.56 - 4.50 (m, 2H), 4.46 (t, <i>J</i> = 8.3 Hz, 1H), 4.07 - 3.90 (m, 2H), 3.74 (s, 3H) °
621		574.1	方法D , RT = 1.59min , 97%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.21 - 8.94 (m, 1H), 7.90 - 7.75 (m, 2H), 7.63 - 7.35 (m, 3H), 6.86 - 6.69 (m, 2H), 6.35 - 6.22 (m, 1H), 5.36 - 4.84 (m, 2H), 4.37 - 4.04 (m, 5H), 3.91 - 3.83 (m, 1H), 3.86 - 3.82 (2s, 3H), 3.61 - 3.50 (m, 3H), 2.22 - 2.05 (2s, 3H) ° (可互相轉化之阻轉異構物之混合物)

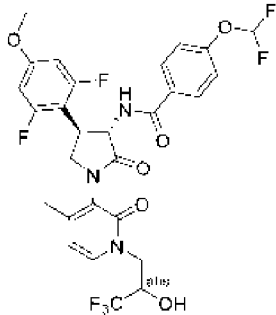
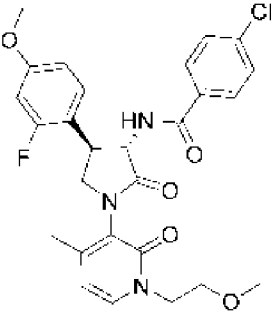
622		624.1	方法D , RT = 1.66min , 99%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.24 - 8.94 (m, 1H), 8.04 - 7.85 (m, 2H), 7.59 - 7.45 (m, 3H), 6.85 - 6.63 (m, 2H), 6.37 - 6.22 (m, 1H), 5.79 - 5.60 (m, 1H), 5.05 - 4.84 (m, 2H), 4.39 - 4.05 (m, 5H), 3.88 - 3.85 (m, 1H), 3.78 - 3.74 (2s, 3H), 3.59 - 3.50 (m, 2H), 2.24 - 2.00 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)
623		574.1	方法D , RT = 1.53min , 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.25 - 8.90 (m, 1H), 7.92 - 7.76 (m, 2H), 7.65 - 7.53 (m, 2H), 7.53 - 7.38 (m, 1H), 6.85 - 6.69 (m, 2H), 6.36 - 6.23 (m, 1H), 5.50 - 5.30 (m, 1H), 5.0-4.28 (m, 1H), 4.34 - 4.03 (m, 4H), 3.89 - 3.80 (m, 1H), 3.78 - 3.74 (2s, 3H), 3.58 - 3.51 (m, 2H), 3.17 (s, 2H), 2.21 - 2.01 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)

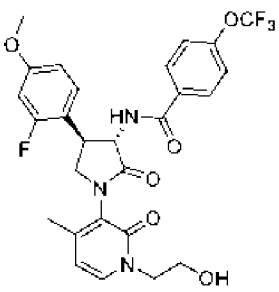
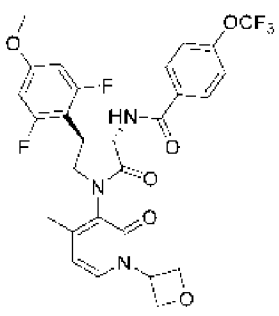
624		606.1	方法D , RT = 1.50min , 99%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.14 - 8.83 (m, 1H), 8.00 - 7.76 (m, 2H), 7.53 - 7.46 (m, 1H), 7.35 (t, <i>J</i> = 73.8 Hz, 1H), 7.28 - 7.24 (m, 2H), 6.86 - 6.67 (m, 2H), 6.36 - 6.22 (m, 1H), 5.75 - 5.59 (m, 1H), 5.38 - 4.76 (m, 2H), 4.38 - 4.00 (m, 5H), 3.93 - 3.85 (m, 1H), 3.78 - 3.74 (2s, 3H), 3.61 - 3.47 (m, 2H), 2.24 - 2.00 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)
625		621	方法D , RT = 1.59min , 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.18 - 8.86 (m, 1H), 7.92 - 7.76 (m, 2H), 7.74 - 7.66 (m, 1H), 7.59 - 7.43 (m, 2H), 6.85 - 6.65 (m, 2H), 6.32 - 6.19 (m, 1H), 5.36 - 4.82 (m, 2H), 4.28 - 4.04 (m, 2H), 3.78 - 3.75 (2s, 3H), 3.54 - 3.42 (m, 3H), 3.22 - 3.13 (m, 2H), 2.43 - 2.29 (m, 2H), 2.19 - 2.0 (2s, 3H), 2.15 - 2.05 (m, 2H)。(可互相轉化之阻轉異構物之混合物)

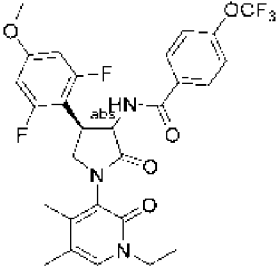
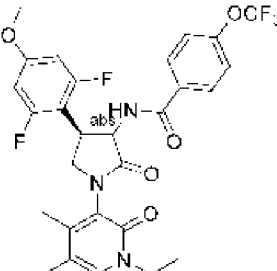
626		652.1	方法D， RT = 1.57min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.11 - 8.81 (m, 1H), 7.96 - 7.81 (m, 2H), 7.75 - 7.62 (m, 1H), 7.28 - 7.23 (m, 2H), 7.35 (t, <i>J</i> = 73.8 Hz, 1H), 6.81 - 6.74 (m, 2H), 6.38 - 6.20 (m, 1H), 5.37 - 4.77 (m, 2H), 4.32 - 4.04 (m, 2H), 3.78 - 3.75 (2s, 3H), 3.56 - 3.40 (m, 3H), 3.23 - 3.11 (m, 2H), 2.43 - 2.25 (m, 2H), 2.19 - 2.0 (2s, 3H), 2.15 - 2.05 (m, 2H)。 (可互相轉化之阻轉異構物之混合物)
627		670.1	方法D， RT = 1.74min， 98%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.24 - 8.96 (m, 1H), 8.04 - 7.85 (m, 2H), 7.77 - 7.64 (m, 1H), 7.56 - 7.38 (m, 2H), 6.88 - 6.65 (m, 2H), 6.34 - 6.20 (m, 1H), 5.36 - 4.79 (m, 2H), 4.33 - 4.00 (m, 2H), 3.82 - 3.68 (m, 3H), 3.57 - 3.39 (m, 3H), 3.22 - 3.09 (m, 2H), 2.45 - 2.28 (m, 2H), 2.19 - 2.0 (2s, 3H), 2.15 - 2.05 (m, 2H)。 (可互相轉化之阻轉異構物之混合物)

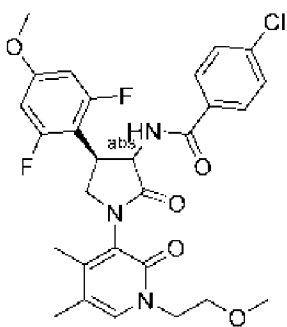
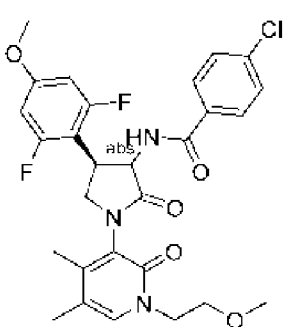
628		577.1	方法D， RT = 1.56min， 98%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.12 (d, <i>J</i> = 8.1 Hz, 1H), 7.95 - 7.82 (m, 2H), 7.28 (d, <i>J</i> = 8.6 Hz, 2H), 7.35 (t, <i>J</i> = 73.8 Hz, 1H), 6.96 (d, <i>J</i> = 1.2 Hz, 1H), 6.81 (d, <i>J</i> = 10.8 Hz, 2H), 5.77 (quin, <i>J</i> = 7.0 Hz, 1H), 4.91 (dd, <i>J</i> = 10.6, 8.2 Hz, 1H), 4.87 - 4.70 (m, 4H), 4.29 (q, <i>J</i> = 9.7 Hz, 1H), 4.15 - 3.97 (m, 2H), 3.77 (s, 3H), 2.24 (s, 3H)。
629		491.1	方法D， RT = 1.70min， 97%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.06 (d, <i>J</i> = 8.6 Hz, 1H), 7.85 (s, 1H), 7.82 (d, <i>J</i> = 8.3 Hz, 2H), 7.56 (d, <i>J</i> = 8.3 Hz, 2H), 6.77 (d, <i>J</i> = 10.8 Hz, 2H), 5.06 - 4.93 (m, 1H), 4.11 - 3.92 (m, 2H), 3.85 - 3.78 (m, 4H), 3.76 (s, 3H), 3.69 (s, 3H)。
630		523.1	方法D， RT = 1.67min， 98%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.00 (d, <i>J</i> = 8.8 Hz, 1H), 7.92 - 7.81 (m, 3H), 7.34 (t, <i>J</i> = 72.9 Hz, 1H), 7.27 (d, <i>J</i> = 8.8 Hz, 2H), 6.77 (d, <i>J</i> = 10.8 Hz, 2H), 5.00 (dd, <i>J</i> = 10.3, 8.8 Hz, 1H), 4.13 - 3.92 (m, 2H), 3.87 - 3.79 (m, 4H), 3.76 (s, 3H), 3.69 (s, 3H)。

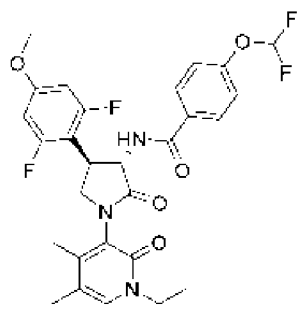
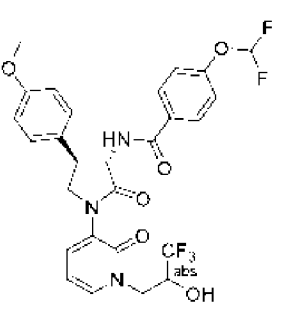
631		541.1	方法D， RT = 1.84min， 98%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.10 (d, <i>J</i> = 8.6 Hz, 1H), 7.93 (d, <i>J</i> = 8.8 Hz, 2H), 7.86 (s, 1H), 7.48 (d, <i>J</i> = 8.6 Hz, 2H), 6.77 (d, <i>J</i> = 10.8 Hz, 2H), 5.01 (t, <i>J</i> = 9.4 Hz, 1H), 4.12 - 3.94 (m, 2H), 3.87 - 3.79 (m, 4H), 3.76 (s, 3H), 3.69 (s, 3H)。
632		548.3	方法D， RT = 2.482 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.01 - 8.95 (m, 1H), 7.97 - 7.90 (m, 2H), 7.67 - 7.61 (m, 1H), 7.55 - 7.13 (m, 5H), 6.96 - 6.86 (m, 2H), 6.48 - 6.16 (m, 2H), 5.28 - 4.63 (m, 1H), 4.50 - 4.34 (m, 2H), 4.11 - 3.79 (m, 2H), 3.72 - 3.67 (2s, 3H), 3.52 - 3.44 (m, 1H), 2.25 - 2.10 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)
633		546.3	方法D， RT = 1.68min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.14 - 8.85 (m, 1H), 7.86 - 7.81 (m, 2H), 7.57 - 7.54 (m, 3H), 6.78 - 6.74 (m, 2H), 6.23 - 6.18 (m, 1H), 5.38 - 4.87 (m, 1H), 4.44 - 4.07 (m, 4H), 3.78 - 3.74 (2s, 3H), 3.52 - 3.50 (m, 3H), 3.24 (s, 3H), 2.23 - 2.05 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)

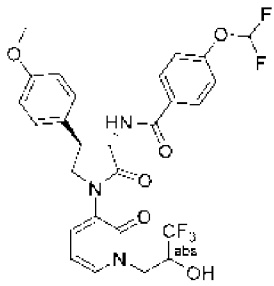
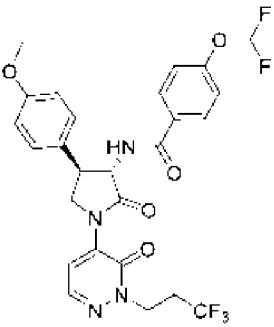
634		632.2	方法D , RT = 1.82min , 98%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.14 - 8.85 (m, 1H), 7.97 - 7.81 (m, 2H), 7.67 - 7.54 (m, 1H), 7.34 (t, J = 74.0 Hz, 1H), 7.28 - 7.24 (m, 2H), 6.83 - 6.61 (m, 3H), 6.33 - 6.18 (m, 1H), 5.38 - 4.81 (m, 1H), 4.44 - 4.07 (m, 4H), 3.86 - 3.71 (m, 4H), 3.52 - 3.50 (m, 1H), 2.23 - 2.05 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)
635		528.2	方法F , RT = 1.991 min , 99.1%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.08 - 9.03 (m, 1H), 7.91 - 7.83 (m, 2H), 7.61 - 7.50 (m, 3H), 7.44 (t, J = 9.0 Hz, 1H), 6.87 - 6.77 (m, 2H), 6.21 (d, J = 7.0 Hz, 1H), 5.40 - 5.31 (m, 1H), 4.82 (dd, J = 11.0, 8.5 Hz, 1H), 4.20 - 3.91 (m, 4H), 3.77 - 3.72 (2s, 3H), 3.63 - 3.55 (m, 2H), 3.25 (s, 3H), 2.22 - 2.07 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)

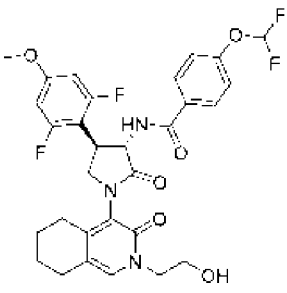
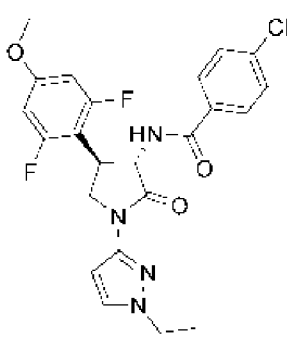
636		564.2	方法F， RT = 2.338 min， 99.7%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.12 - 9.07 (m, 1H), 8.01 - 7.95 (m, 2H), 7.60 - 7.38 (m, 4H), 6.87 - 6.75 (m, 2H), 6.20 (d, <i>J</i> = 7.0 Hz, 1H), 5.38 (dd, <i>J</i> = 11.5, 9.5 Hz, 1H), 4.94 (br t, <i>J</i> = 4.5 Hz, 1H), 4.83 - 4.80 (m, 1H), 4.19 - 3.87 (m, 4H), 3.80 - 3.70 (2s, 3H), 3.68 - 3.54 (m, 2H), 2.22 - 2.07 (2s, 3H)。 (可互相轉化之阻轉異構物之混合物)
637		594.2	方法F， RT = 2.526 min， 99.5%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.23 - 9.05 (m, 1H), 8.00 - 7.91 (m, 2H), 7.76 (d, <i>J</i> = 7.1 Hz, 1H), 7.53 - 7.45 (m, 2H), 6.83 - 6.73 (m, 2H), 6.39 - 6.32 (m, 1H), 5.51 (t, <i>J</i> = 7.3 Hz, 1H), 4.93 - 4.83 (m, 3H), 4.82 - 4.70 (m, 2H), 4.32 - 4.20 (m, 1H), 4.20 - 4.01 (m, 2H), 3.79 - 3.74 (2s, 3H), 2.25 - 2.07 (2s, 3H)。 (可互相轉化之阻轉異構物之混合物)

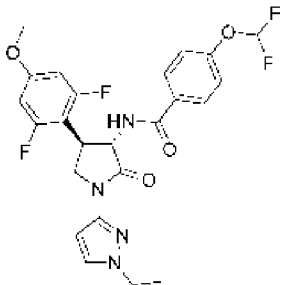
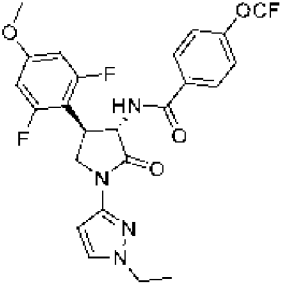
638		580.2	方法D， RT = 1.890 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.23 - 9.03 (m, 1H), 7.97 - 7.90 (m, 2H), 7.58 - 7.42 (m, 3H), 6.80 - 6.72 (m, 2H), 5.38 - 4.84 (m, 1H), 4.29 - 4.02 (m, 2H), 3.99 - 3.80 (m, 2H), 3.76 - 3.71 (2s, 3H), 3.51 - 3.40 (m, 1H), 2.12 (s, 3H), 2.02 - 1.96 (2s, 3H), 1.24 - 1.16 (m, 3H)。 (可互相轉化之阻轉異構物之混合物)
639		580.1	方法D， RT = 1.891 min， 98.5%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.25 - 9.04 (m, 1H), 7.99 - 7.90 (m, 2H), 7.60 - 7.43 (m, 3H), 6.81 - 6.73 (m, 2H), 5.40 - 4.83 (m, 1H), 4.30 - 4.05 (m, 2H), 4.00 - 3.82 (m, 2H), 3.77 - 3.74 (2s, 3H), 3.53 - 3.42 (m, 1H), 2.13 (s, 3H), 2.03 - 1.97 (2s, 3H), 1.25 - 1.17 (m, 3H)。 (可互相轉化之阻轉異構物之混合物)

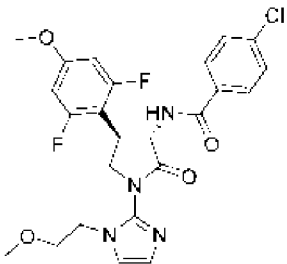
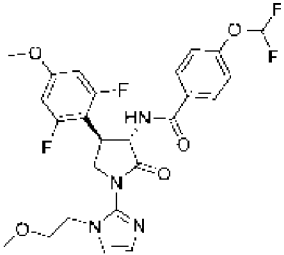
640		560.1	方法D , RT = 1.737min , 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.20 - 8.98 (m, 1H), 7.88 - 7.80 (m, 2H), 7.60 7.43 (m, 3H), 6.81 - 6.73 (m, 2H), 5.39 - 4.88 (m, 1H), 4.30 - 3.96 (m, 4H), 3.77 - 3.75 (2s, 3H), 3.60 - 3.54 (m, 2H), 3.52 - 3.43 (m, 1H), 3.24 (2s, 3H), 2.15 (s, 3H), 2.03 - 1.98 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)
641		560.1	方法D , RT = 1.739 min , 98.5%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.19 - 8.99 (m, 1H), 7.87 - 7.80 (m, 2H), 7.58 - 7.42 (m, 3H), 6.81 - 6.73 (m, 2H), 5.37 - 4.86 (m, 1H), 4.28 - 3.94 (m, 4H), 3.76 - 3.74 (2s, 3H), 3.60 - 3.54 (m, 2H), 3.51 - 3.40 (m, 1H), 3.23 (2s, 3H), 2.13 (s, 3H), 2.02 - 1.97 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)

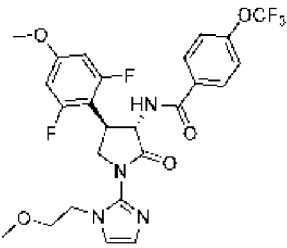
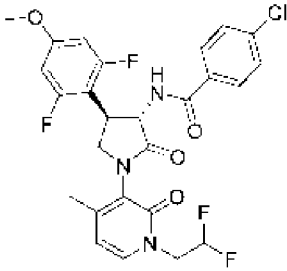
642		562.1	方法D， RT = 1.725 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.14 - 8.96 (m, 1H), 7.94 - 7.86 (m, 2H), 7.60 - 7.50 (m, 1H), 7.51 - 7.13 (m, 3H), 6.81 - 6.72 (m, 2H), 5.40 - 4.86 (m, 1H), 4.31 - 4.05 (m, 2H), 4.01 - 3.82 (m, 2H), 3.78 - 3.73 (2s, 3H), 3.53 - 3.40 (m, 1H), 2.14 - 2.04 (2s, 3H), 2.04 - 1.98 (2s, 3H), 1.26 - 1.17 (m, 3H)。 (可互相轉化之阻轉異構物之混合物)
643		582.1	方法D， RT = 1.603 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.92 (d, <i>J</i> = 9.0 Hz, 1H), 7.97 - 7.87 (m, 2H), 7.69 (dd, <i>J</i> = 6.8, 2.0 Hz, 1H), 7.64 (dd, <i>J</i> = 7.3, 2.0 Hz, 1H), 7.35 (t, <i>J</i> = 74.6 Hz, 1H), 7.35 - 7.33 (m, 2H), 7.26 (d, <i>J</i> = 8.8 Hz, 2H), 6.94 - 6.84 (m, 2H), 6.37 (t, <i>J</i> = 7.1 Hz, 1H), 5.01 (dd, <i>J</i> = 11.2, 8.8 Hz, 1H), 4.46 - 4.42 (m, 1H), 4.33 - 4.29 (m, 1H), 4.16 (t, <i>J</i> = 8.4 Hz, 1H), 3.88 - 3.73 (m, 3H), 3.72 (s, 3H), 3.69 - 3.64 (m, 1H)。

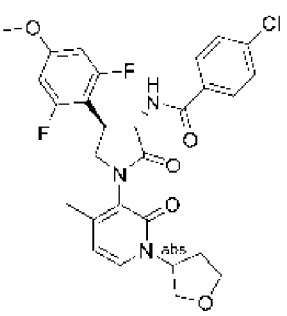
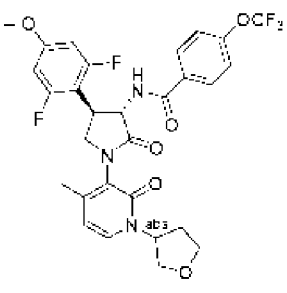
644		582.1	方法D , RT = 1.59 min , 100%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 8.94 (d, <i>J</i> = 8.8 Hz, 1H), 7.92 (d, <i>J</i> = 8.6 Hz, 2H), 7.68 (dd, <i>J</i> = 6.6, 1.7 Hz, 1H), 7.64 (dd, <i>J</i> = 7.6, 1.7 Hz, 1H), 7.35 (t, <i>J</i> = 74.6 Hz, 1H), 7.35 - 7.33 (m, 2H), 7.26 (d, <i>J</i> = 8.8 Hz, 2H), 6.90 (d, <i>J</i> = 8.6 Hz, 2H), 6.37 (t, <i>J</i> = 7.0 Hz, 1H), 5.04 - 4.95 (m, 1H), 4.44 (dd, <i>J</i> = 12.8, 2.6 Hz, 1H), 4.38 - 4.29 (m, 1H), 4.12 - 4.04 (m, 1H), 3.91 - 3.72 (m, 4H), 3.72 (s, 3H) 。
645		567.1	方法D , RT = 1.81min , 95%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 8.65 - 8.53 (m, 1H), 8.07 (d, <i>J</i> = 4.8 Hz, 1H), 7.77 (d, <i>J</i> = 4.8 Hz, 1H), 7.74 - 7.62 (m, 4H), 7.32 (t, <i>J</i> = 76.0 Hz, 1H), 7.19 (dd, <i>J</i> = 8.5, 2.5 Hz, 2H), 6.82 (d, <i>J</i> = 8.3 Hz, 2H), 5.08 - 4.99 (m, 1H), 4.48 - 4.32 (m, 4H), 4.00 - 3.88 (m, 1H), 3.70 (s, 3H), 2.89 - 2.74 (m, 2H) 。

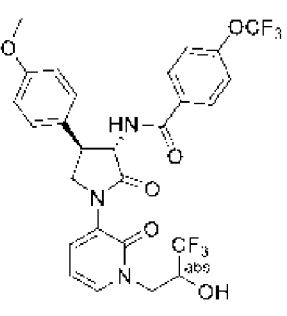
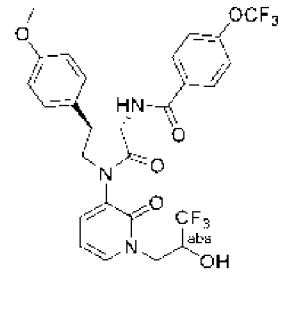
646		604.2	方法D， RT = 1.649 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.13 - 8.87 (m, 1H), 8.01 - 7.81 (m, 2H), 7.47 - 7.43 (m, 1H), 7.34 (t, <i>J</i> = 74.3 Hz, 1H), 7.28 - 7.24 (m, 2H), 6.83 - 6.69 (m, 2H), 5.38 - 4.87 (m, 2H), 4.26 - 3.87 (m, 5H), 3.78 - 3.74 (2s, 3H), 3.67 - 3.59 (m, 2H), 3.53 - 3.43 (m, 1H), 2.71 - 2.65 (m, 1H), 2.55 - 2.50 (m, 1H), 1.83 - 1.49 (m, 5H)。
647		475.1	方法C， RT = 1.824 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.10 (d, <i>J</i> = 8.3 Hz, 1H), 7.80 (d, <i>J</i> = 9.0 Hz, 2H), 7.72 (d, <i>J</i> = 2.4 Hz, 1H), 7.60 - 7.48 (m, 2H), 6.78 (d, <i>J</i> = 10.8 Hz, 2H), 6.64 (d, <i>J</i> = 2.2 Hz, 1H), 4.97 (dd, <i>J</i> = 10.1, 8.7 Hz, 1H), 4.25 - 4.16 (m, 1H), 4.15 - 4.03 (m, 3H), 3.92 - 3.81 (m, 1H), 3.77 (s, 3H), 1.35 (t, <i>J</i> = 7.2 Hz, 3H)。

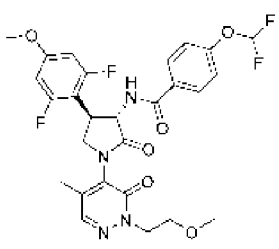
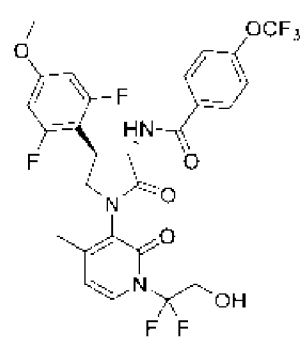
648		507.1	方法C， RT = 1.780 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.04 (d, <i>J</i> = 8.6 Hz, 1H), 7.90 (d, <i>J</i> = 9.0 Hz, 2H), 7.72 (d, <i>J</i> = 2.4 Hz, 1H), 7.34 (t, <i>J</i> = 72.6 Hz, 1H), 7.28 (d, <i>J</i> = 9.0 Hz, 2H), 6.78 (d, <i>J</i> = 10.8 Hz, 2H), 6.65 (d, <i>J</i> = 2.4 Hz, 1H), 4.97 (dd, <i>J</i> = 10.3, 8.6 Hz, 1H), 4.27 - 4.16 (m, 1H), 4.16 - 4.01 (m, 3H), 3.90 - 3.81 (m, 1H), 3.77 (s, 3H), 1.35 (t, <i>J</i> = 7.2 Hz, 3H)。
649		525.1	方法C， RT = 1.961 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.14 (d, <i>J</i> = 8.3 Hz, 1H), 7.91 (d, <i>J</i> = 8.8 Hz, 2H), 7.73 (d, <i>J</i> = 2.4 Hz, 1H), 7.49 (d, <i>J</i> = 8.8 Hz, 2H), 6.78 (d, <i>J</i> = 10.8 Hz, 2H), 6.65 (d, <i>J</i> = 2.4 Hz, 1H), 4.98 (dd, <i>J</i> = 10.3, 8.3 Hz, 1H), 4.28 - 4.16 (m, 1H), 4.16 - 3.98 (m, 3H), 3.86 (t, <i>J</i> = 9.7 Hz, 1H), 3.77 (s, 3H), 1.35 (t, <i>J</i> = 7.2 Hz, 3H)。

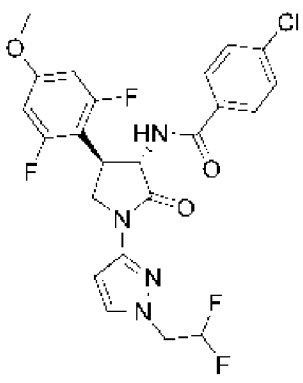
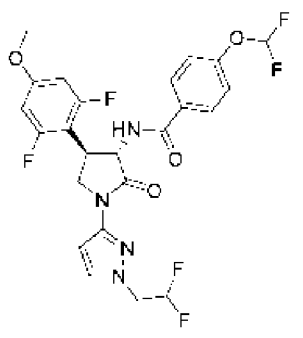
650		505.1	方法D， RT = 1.658 min， 97.5%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.14 (d, <i>J</i> = 8.3 Hz, 1H), 7.89 - 7.75 (m, 2H), 7.64 - 7.47 (m, 2H), 7.19 (d, <i>J</i> = 1.2 Hz, 1H), 6.88 (d, <i>J</i> = 1.2 Hz, 1H), 6.80 (d, <i>J</i> = 10.8 Hz, 2H), 4.87 (dd, <i>J</i> = 10.8, 8.1 Hz, 1H), 4.32 - 4.21 (m, 1H), 4.17 - 4.00 (m, 2H), 3.95 (br d, <i>J</i> = 10.0 Hz, 2H), 3.77 (s, 3H), 3.67 - 3.58 (m, 2H), 3.27 (s, 3H)。
651		537.2	方法D， RT = 1.622 min， 95.9%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.08 (d, <i>J</i> = 8.1 Hz, 1H), 7.94 - 7.81 (m, 2H), 7.34 (t, <i>J</i> = 73.4 Hz, 1H), 7.28 (d, <i>J</i> = 8.8 Hz, 2H), 7.19 (d, <i>J</i> = 1.5 Hz, 1H), 6.88 (d, <i>J</i> = 1.5 Hz, 1H), 6.80 (d, <i>J</i> = 10.8 Hz, 2H), 4.86 (dd, <i>J</i> = 10.8, 8.1 Hz, 1H), 4.32 - 4.20 (m, 1H), 4.17 - 4.00 (m, 2H), 3.98 - 3.89 (m, 2H), 3.77 (s, 3H), 3.67 - 3.56 (m, 2H), 3.27 (s, 3H)。

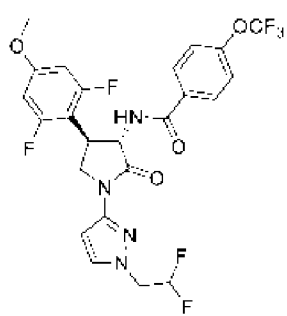
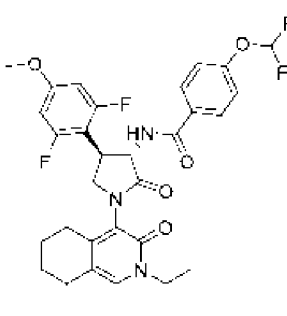
652		555.1	方法D， RT = 1.809 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.18 (d, <i>J</i> = 8.1 Hz, 1H), 7.99 - 7.77 (m, 2H), 7.55 - 7.39 (m, 2H), 7.19 (d, <i>J</i> = 1.2 Hz, 1H), 6.88 (d, <i>J</i> = 1.2 Hz, 1H), 6.80 (d, <i>J</i> = 10.8 Hz, 2H), 4.88 (dd, <i>J</i> = 10.8, 8.1 Hz, 1H), 4.33 - 4.21 (m, 1H), 4.18 - 3.90 (m, 4H), 3.77 (s, 3H), 3.69 - 3.54 (m, 2H), 3.27 (s, 3H)。
653		552.2	方法D， RT = 1.77min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.15 - 9.02 (m, 1H), 7.89 - 7.79 (m, 2H), 7.68 - 7.51 (m, 3H), 6.83 - 6.70 (m, 2H), 6.32 - 6.31(m, 1H), 6.29 (tt, <i>J</i> = 54.8, 5.1 Hz, 1H), 5.32 - 4.85 (m, 1H), 4.40 - 4.05 (m, 4H), 3.78 - 3.74 (2s, 3H), 3.51 - 3.50 (m, 1H), 2.49 - 2.07 (2s, 3H)。 (可互相轉化之阻轉異構物之混合物)

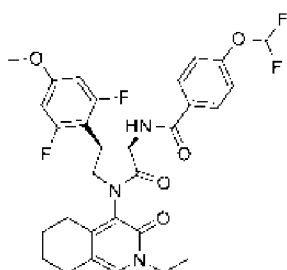
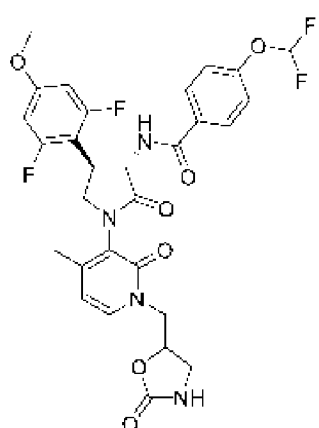
654		558.2	方法D， RT = 1.69min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.04 - 8.98 (m, 1H), 7.87 - 7.82 (m, 2H), 7.59 - 7.52 (m, 3H), 6.81 - 6.57 (m, 2H), 6.32 - 6.27 (m, 1H), 5.41 - 5.32 (m, 1H), 4.90 (dd, J = 10.5, 8.5 Hz, 1H), 4.21 - 4.02 (m, 3H), 3.90 - 3.72 (m, 6H), 3.53 - 3.48 (m, 1H), 2.54 - 2.52 (m, 1H), 2.24 - 2.20 (2s, 3H), 2.01 - 1.94 (m, 1H)。 (可互相轉化之阻轉異構物之混合物)
655		608.2	方法D， RT = 1.846 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.25 - 9.05 (m, 1H), 8.02 - 7.91 (m, 2H), 7.60 - 7.45 (m, 3H), 6.84 - 6.73 (m, 2H), 6.35 - 6.26 (m, 1H), 5.43 - 4.86 (m, 2H), 4.32 - 4.01 (m, 3H), 3.91 - 3.71 (m, 6H), 3.53 - 3.48 (m, 1H), 2.46 - 2.38 (m, 1H), 2.23 - 2.04 (2s, 3H), 2.01 - 1.90 (m, 1H)。 (可互相轉化之阻轉異構物之混合物)

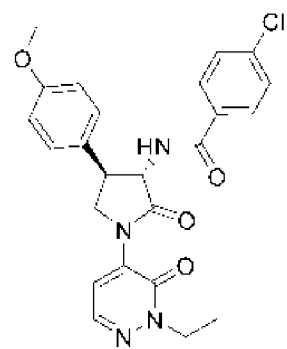
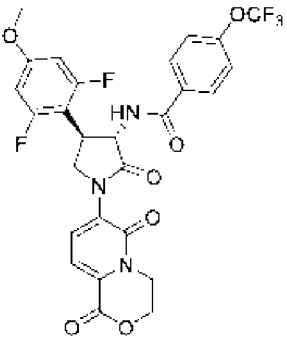
656		600.2	方法D , RT = 1.813 min , 98.2%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.05 (d, <i>J</i> = 9.0 Hz, 1H), 7.99 (d, <i>J</i> = 9.0 Hz, 2H), 7.69 - 7.65 (m, 2H), 7.49 (d, <i>J</i> = 8.5 Hz, 2H), 7.36 (d, <i>J</i> = 8.5 Hz, 2H), 6.91 (d, <i>J</i> = 9.0 Hz, 2H), 6.38 (t, <i>J</i> = 7.0 Hz, 1H), 5.06 - 4.98 (m, 1H), 4.45 (dd, <i>J</i> = 12.8, 2.8 Hz, 1H), 4.40 - 4.28 (m, 1H), 4.16 - 4.03 (m, 1H), 3.91 - 3.70 (m, 4H), 3.73 (s, 3H) °
657		600.2	方法D , RT = 1.828 min , 98.4%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.03 (d, <i>J</i> = 8.5 Hz, 1H), 7.99 (d, <i>J</i> = 8.5 Hz, 2H), 7.69 - 7.65 (m, 2H), 7.49 (d, <i>J</i> = 8.5 Hz, 2H), 7.36 (d, <i>J</i> = 9.0 Hz, 2H), 6.91 (d, <i>J</i> = 9.0 Hz, 2H), 6.38 (t, <i>J</i> = 7.0 Hz, 1H), 5.02 (dd, <i>J</i> = 11.3, 8.8 Hz, 1H), 4.46 (dd, <i>J</i> = 13.1, 2.5 Hz, 1H), 4.39 - 4.28 (m, 1H), 4.17 (t, <i>J</i> = 8.3 Hz, 1H), 3.91 - 3.70 (m, 4H), 3.73 (s, 3H) °

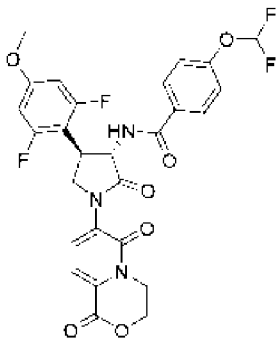
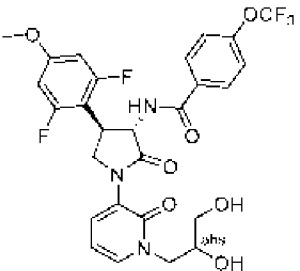
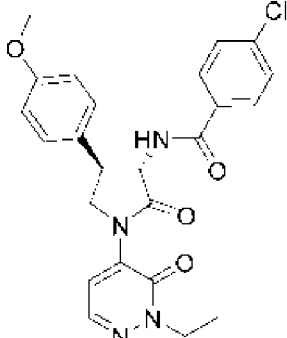
658		579.2	方法D， RT = 1.89min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.16 - 8.93 (m, 1H), 8.05 - 7.93 (m, 1H), 7.93 - 7.77 (m, 2H), 7.34 (t, J = 74.0 Hz, 1H), 7.27 (d, J = 8.8 Hz, 2H), 6.88 - 6.66 (m, 2H), 5.36 - 4.74 (m, 1H), 4.45 - 4.12 (m, 4H), 3.82 - 3.72 (2s, 3H), 3.72 - 3.51 (2s, 3H), 3.23 - 3.18 (2s, 3H), 2.26 - 2.02 (2s, 3H)。 (可互相轉化之阻轉異構物之混合物)
659		618.2	方法D， RT = 2.709 min，99%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.23 - 9.04 (m, 1H), 8.00 - 7.91 (m, 2H), 7.72 - 7.61 (m, 1H), 7.53 - 7.44 (m, 2H), 6.83 - 6.73 (m, 2H), 6.39 - 6.32 (m, 1H), 5.98 - 5.91 (m, 1H), 5.37 - 4.82 (m, 1H), 4.34 - 4.00 (m, 4H), 3.80 - 3.75 (2s, 3H), 3.63 - 3.52 (m, 1H), 2.28 - 2.07 (2s, 3H)。 (可互相轉化之阻轉異構物之混合物)

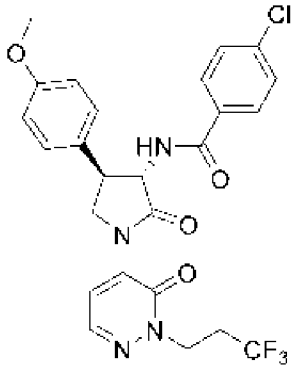
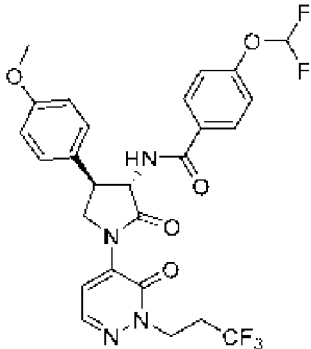
660		511.1	方法C， RT = 1.895min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.13 (d, <i>J</i> = 8.3 Hz, 1H), 7.83 (d, <i>J</i> = 8.8 Hz, 2H), 7.80 (d, <i>J</i> = 2.4 Hz, 1H), 7.56 (d, <i>J</i> = 8.8 Hz, 2H), 6.79 (d, <i>J</i> = 10.8 Hz, 2H), 6.75 (d, <i>J</i> = 2.4 Hz, 1H), 6.34 (tt, <i>J</i> = 55.0, 8.6 Hz, 1H), 4.96 (dd, <i>J</i> = 10.1, 8.4 Hz, 1H), 4.62 - 4.56 (m, 2H), 4.26 - 4.03 (m, 2H), 3.86 (t, <i>J</i> = 9.3 Hz, 1H), 3.77 (s, 3H)。
661		543.1	方法C， RT = 1.852min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.06 (d, <i>J</i> = 8.3 Hz, 1H), 7.88 (d, <i>J</i> = 8.8 Hz, 2H), 7.80 (d, <i>J</i> = 2.4 Hz, 1H), 7.35 (t, <i>J</i> = 74.6 Hz, 1H), 7.26 (d, <i>J</i> = 8.8 Hz, 2H), 6.79 (d, <i>J</i> = 10.8 Hz, 2H), 6.75 (d, <i>J</i> = 2.2 Hz, 1H), 6.34 (tt, <i>J</i> = 55.0, 8.6 Hz, 1H), 4.95 (dd, <i>J</i> = 10.0, 8.6 Hz, 1H), 4.62 - 4.56 (m, 2H), 4.27 - 4.07 (m, 2H), 3.86 (t, <i>J</i> = 9.3 Hz, 1H), 3.77 (s, 3H)。

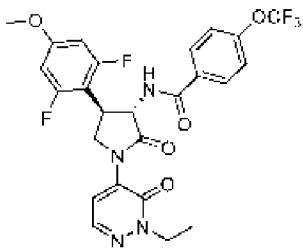
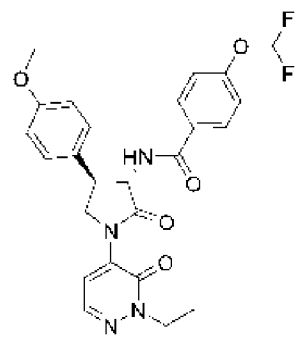
662		561.1	方法C， RT = 2.041min， 97.1%	¹ H NMR (400 MHz, DMSO-d ₆) δ =9.16 (d, <i>J</i> = 8.3 Hz, 1H), 7.93 (d, <i>J</i> = 8.8 Hz, 2H), 7.80 (d, <i>J</i> = 2.4 Hz, 1H), 7.50 (d, <i>J</i> = 8.8 Hz, 2H), 6.79 (d, <i>J</i> = 10.8 Hz, 2H), 6.75 (d, <i>J</i> = 2.4 Hz, 1H), 6.34 (tt, <i>J</i> = 58.2, 11.0 Hz, 1H), 4.97 (dd, <i>J</i> = 10.0, 8.6 Hz, 1H), 4.62 - 4.56 (m, 2H), 4.28 - 4.06 (m, 2H), 3.86 (t, <i>J</i> = 9.5 Hz, 1H), 3.77 (s, 3H)。
663		588.1	方法D， RT = 1.849 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.15 - 8.91 (m, 1H), 7.94 - 7.85 (m, 2H), 7.61 - 7.54 (m, 1H), 7.34 (t, <i>J</i> = 73.4 Hz, 1H), 7.30 - 7.22 (m, 2H), 6.78 - 6.74 (m, 2H), 5.40 - 4.92 (m, 1H), 4.25 - 3.84 (m, 4H), 3.78 - 3.74 (m, 3H), 3.53 - 3.43 (m, 1H), 2.71 - 2.52 (m, 3H), 1.82 - 1.53 (m, 5H), 1.22 (2t, <i>J</i> = 6.8 Hz, 3H)。(可互相轉化之阻轉異構物之混合物)

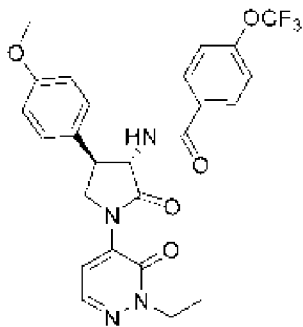
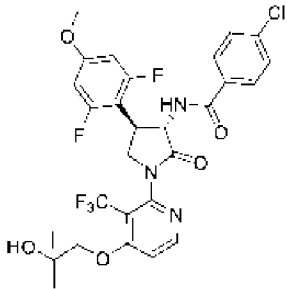
664		588.1	方法D， RT = 1.849 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.15 - 8.91 (m, 1H), 7.94 - 7.85 (m, 2H), 7.61 - 7.54 (m, 1H), 7.34 (t, <i>J</i> = 73.4 Hz, 1H), 7.30 - 7.22 (m, 2H), 6.78 - 6.74 (m, 2H), 5.40 - 4.92 (m, 1H), 4.25 - 3.84 (m, 4H), 3.78 - 3.74 (m, 3H), 3.53 - 3.43 (m, 1H), 2.71 - 2.52 (m, 3H), 1.82 - 1.53 (m, 5H), 1.22 (2t, <i>J</i> = 6.8 Hz, 3H)。 (可互相轉化之阻轉異構物之混合物)
665		619.1	方法D， RT = 1.485 min， 95.7%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.14 - 8.87 (m, 1H), 8.01 - 7.81 (m, 2H), 7.73 - 7.58 (m, 1H), 7.55 - 7.11 (m, 4H), 6.87 - 6.66 (m, 2H), 6.35 - 6.20 (m, 1H), 5.37 - 4.79 (m, 2H), 4.33 - 4.05 (m, 3H), 3.81 - 3.78 (2s, 3H), 3.63 - 3.51 (m, 2H), 3.26 - 3.22 (m, 2H), 2.23 - 2.06 (2s, 3H)。 (可互相轉化之阻轉異構物之混合物)

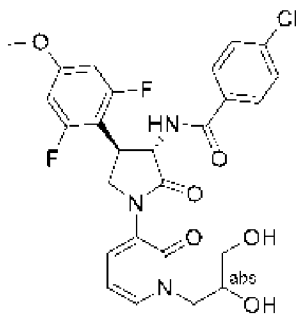
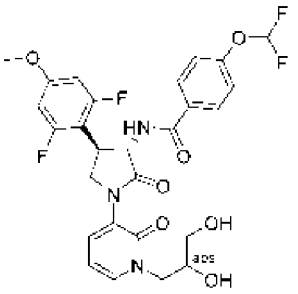
666		467.1	方法D， RT = 1.62min， 97%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.07 - 8.63 (m, 1H), 8.09 - 7.96 (m, 1H), 7.91 - 7.61 (m, 3H), 7.60 - 7.44 (m, 2H), 7.39 - 7.16 (m, 2H), 6.96 - 6.75 (m, 2H), 5.12 - 4.97 (m, 1H), 4.53 - 4.27 (m, 1H), 4.24 - 4.08 (m, 2H), 3.98 - 3.87 (m, 1H), 3.77 (s, 3H), 3.80 - 3.74 (m, 1H), 1.30 (t, <i>J</i> = 7.2 Hz, 3H)。
667		594	方法D， RT = 1.751 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.12 (d, <i>J</i> = 8.3 Hz, 1H), 7.94 (d, <i>J</i> = 9.0 Hz, 2H), 7.83 (d, <i>J</i> = 7.8 Hz, 1H), 7.49 (d, <i>J</i> = 9.0 Hz, 2H), 7.25 (d, <i>J</i> = 7.8 Hz, 1H), 6.78 (d, <i>J</i> = 10.8 Hz, 2H), 5.11 - 5.00 (m, 1H), 4.68 (t, <i>J</i> = 5.3 Hz, 2H), 4.28 - 4.19 (m, 2H), 4.14 - 4.10 (m, 3H), 3.77 (s, 3H)。

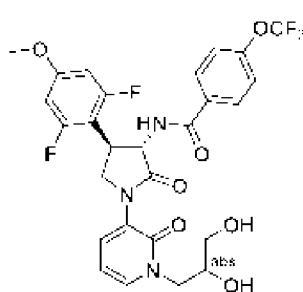
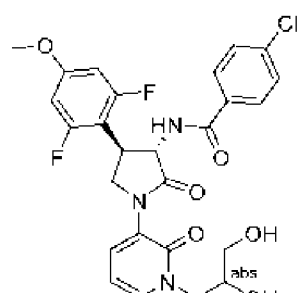
668		576.1	方法D， RT = 1.568 min， 97.9%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.04 (d, <i>J</i> = 8.5 Hz, 1H), 7.99 - 7.85 (m, 2H), 7.83 (d, <i>J</i> = 7.6 Hz, 1H), 7.35 (t, <i>J</i> = 74.8 Hz, 1H), 7.27 (t, <i>J</i> = 7.9 Hz, 3H), 6.79 (d, <i>J</i> = 10.8 Hz, 2H), 5.12 - 4.98 (m, 1H), 4.68 (t, <i>J</i> = 5.2 Hz, 2H), 4.32 - 4.19 (m, 2H), 4.17 - 4.04 (m, 3H), 3.77 (s, 3H)。
669		598.2	方法D， RT = 1.57min， 98%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.11 (d, <i>J</i> = 8.5 Hz, 1H), 7.95 (d, <i>J</i> = 8.8 Hz, 2H), 7.62 - 7.58 (m, 2H), 7.49 (d, <i>J</i> = 8.8 Hz, 2H), 6.77 (d, <i>J</i> = 10.8 Hz, 2H), 6.32 (t, <i>J</i> = 6.9 Hz, 1H), 5.13 (dd, <i>J</i> = 10.8, 8.5 Hz, 1H), 4.30 (dd, <i>J</i> = 12.9, 3.4 Hz, 1H), 4.16 - 3.91 (m, 4H), 3.77 (s, 3H), 3.63 - 3.59 (m, 2H), 3.41 - 3.33 (m, 3H)。
670		467.1	方法D， RT = 1.62min， 97%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.07 - 8.63 (m, 1H), 8.09 - 7.96 (m, 1H), 7.91 - 7.61 (m, 3H), 7.60 - 7.44 (m, 2H), 7.39 - 7.16 (m, 2H), 6.96 - 6.75 (m, 2H), 5.12 - 4.97 (m, 1H), 4.53 - 4.27 (m, 2H), 4.24 - 4.08 (m, 2H), 3.96 - 3.89 (m, 1H), 3.77 (s, 3H), 1.36 - 1.20 (t, <i>J</i> = 7.2 Hz, 3H)。

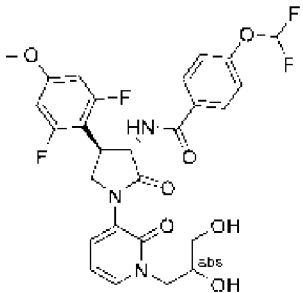
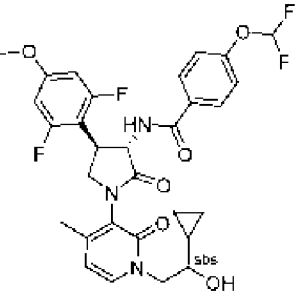
671		535.1	方法D , RT = 1.84min , 92%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.07 - 8.61 (m, 1H), 8.04 (dd, J = 13.4, 4.9 Hz, 1H), 7.86 (d, J = 8.8 Hz, 2H), 7.78 (d, J = 8.8 Hz, 1H), 7.56 (d, J = 8.6 Hz, 2H), 7.36 (d, J = 8.6 Hz, 2H), 6.91 (d, J = 8.6 Hz, 2H), 5.08 - 4.99 (m, 1H), 4.48 - 4.32 (m, 3H), 4.00 - 3.88 (m, 1H), 3.77 (s, 3H), 3.80 - 3.72 (m, 1H), 2.89 - 2.74 (m, 2H) °
672		567.1	方法D , RT = 1.81min , 95%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.95 (d, J = 8.5 Hz, 1H), 8.04 (d, J = 4.6 Hz, 1H), 7.97 - 7.86 (m, 2H), 7.77 (d, J = 4.6 Hz, 1H), 7.59 - 7.14 (m, 5H), 7.01 - 6.79 (m, 2H), 5.04 (dd, J = 11.7, 8.4 Hz, 1H), 4.54 - 4.42 (m, 1H), 4.37 (t, J = 6.8 Hz, 2H), 3.97 (t, J = 10.4 Hz, 1H), 3.84 - 3.75 (m, 1H), 3.73 (s, 3H), 2.88 - 2.72 (m, 2H) °

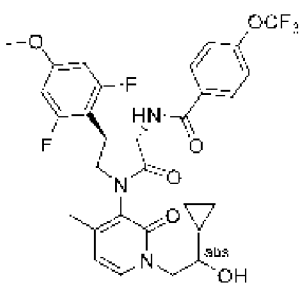
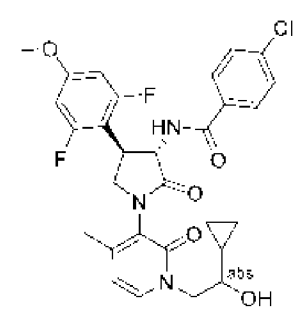
673		553.2	方法D , RT = 1.95min , 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.13 (d, <i>J</i> = 8.1 Hz, 1H), 8.01 (d, <i>J</i> = 4.6 Hz, 1H), 7.99 - 7.82 (m, 2H), 7.70 (d, <i>J</i> = 4.4 Hz, 1H), 7.49 (d, <i>J</i> = 8.1 Hz, 2H), 6.78 (d, <i>J</i> = 10.8 Hz, 2H), 5.07 (dd, <i>J</i> = 10.8, 8.4 Hz, 1H), 4.42 - 4.27 (m, 1H), 4.25 - 4.05 (m, 4H), 3.77 (s, 3H), 1.28 (t, <i>J</i> = 7.2 Hz, 3H) °
674		499.2	方法D , RT = 1.66min , 96%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.94 (br d, <i>J</i> = 8.6 Hz, 1H), 8.00 (d, <i>J</i> = 4.6 Hz, 1H), 7.95 - 7.85 (m, 2H), 7.72 (d, <i>J</i> = 4.6 Hz, 1H), 7.37 (t, <i>J</i> = 74.5 Hz, 1H), 7.36 - 7.34 (m, 2H), 7.26 - 7.16 (m, 2H), 6.91 (d, <i>J</i> = 8.6 Hz, 2H), 5.03 (dd, <i>J</i> = 11.5, 8.3 Hz, 1H), 4.46 (dd, <i>J</i> = 9.8, 8.3 Hz, 1H), 4.14 (q, <i>J</i> = 7.1 Hz, 2H), 3.96 (t, <i>J</i> = 10.4 Hz, 1H), 3.81 - 3.68 (m, 1H), 3.77 (s, 3H), 1.28 (t, <i>J</i> = 7.1 Hz, 3H) °

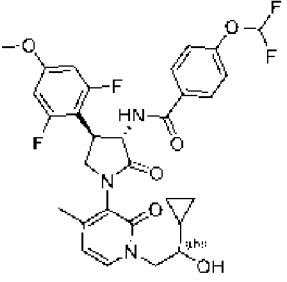
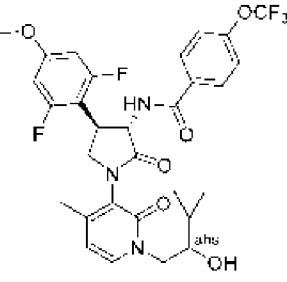
675		517.2	方法D , RT = 1.84min , 96%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.03 (d, <i>J</i> = 8.3 Hz, 1H), 8.06 - 7.89 (m, 3H), 7.72 (d, <i>J</i> = 4.6 Hz, 1H), 7.48 (d, <i>J</i> = 8.1 Hz, 2H), 7.36 (d, <i>J</i> = 8.8 Hz, 2H), 6.91 (d, <i>J</i> = 8.8 Hz, 2H), 5.04 (dd, <i>J</i> = 11.9, 8.4 Hz, 1H), 4.51 - 4.38 (m, 1H), 4.14 (q, <i>J</i> = 7.3 Hz, 2H), 3.97 (t, <i>J</i> = 10.3 Hz, 1H), 3.79 - 3.75 (m, 1H), 3.73 (s, 3H), 1.28 (t, <i>J</i> = 7.3 Hz, 3H) 。
676		614.2	方法D , RT = 2.004 min , 93.7%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.15 - 9.10 (m, 1H), 8.51 - 8.47 (m, 1H), 7.86 - 7.78 (m, 2H), 7.58 - 7.52 (m, 2H), 7.28 - 7.23 (m, 1H), 6.83 - 6.74 (m, 2H), 5.14 - 4.96 (m, 1H), 4.65 (s, 1H), 4.43 - 4.18 (m, 1H), 4.14 (s, 2H), 3.99 - 3.82 (m, 1H), 3.77 (s, 3H), 3.75 - 3.71 (m, 1H), 1.22 (s, 3H), 1.17 (s, 3H) 。

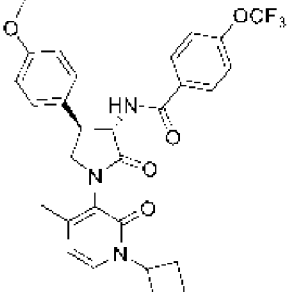
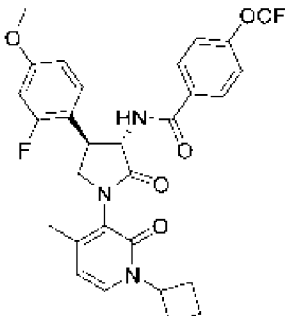
677		548.2	方法D , RT = 1.42min , 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.07 (d, <i>J</i> = 8.8 Hz, 1H), 7.84 (d, <i>J</i> = 8.5 Hz, 2H), 7.63 - 7.53 (m, 4H), 6.77 (d, <i>J</i> = 10.5 Hz, 2H), 6.32 (t, <i>J</i> = 6.9 Hz, 1H), 5.12 (dd, <i>J</i> = 10.5, 8.6 Hz, 1H), 5.00 (br s, 1H), 4.65 (br s, 1H), 4.30 - 4.27 (m, 1H), 4.15 - 3.92 (m, 4H), 3.77 (s, 3H), 3.67-3.61 (m, 1H), 3.38 - 3.35 (m, 2H) °
678		580.2	方法D , RT = 1.40min , 98%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.00 (d, <i>J</i> = 8.3 Hz, 1H), 7.89 (d, <i>J</i> = 8.8 Hz, 2H), 7.61 (dd, <i>J</i> = 13.0, 7.0 Hz, 2H), 7.34 (t, <i>J</i> = 74.0 Hz, 1H), 7.27 (d, <i>J</i> = 8.8 Hz, 2H), 6.77 (d, <i>J</i> = 10.8 Hz, 2H), 6.32 (t, <i>J</i> = 7.0 Hz, 1H), 5.11 (t, <i>J</i> = 9.6 Hz, 1H), 5.04 - 4.94 (m, 1H), 4.83 - 4.68 (m, 1H), 4.30 - 4.31(m, 1H), 4.15 - 3.87 (m, 4H), 3.77 (s, 3H), 3.65 - 3.63 (m, 1H), 3.38 - 3.35 (m, 2H) °

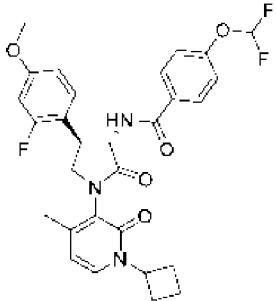
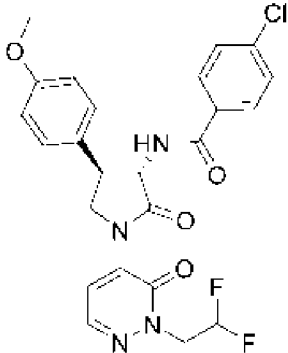
679		598.2	方法D , RT = 1.57min , 98%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.11 (d, <i>J</i> = 8.5 Hz, 1H), 8.02 - 7.89 (m, 2H), 7.63 (dd, <i>J</i> = 6.5, 1.9 Hz, 1H), 7.60 (dd, <i>J</i> = 7.1, 1.9 Hz, 1H), 7.49 (d, <i>J</i> = 8.5 Hz, 2H), 6.77 (d, <i>J</i> = 10.8 Hz, 2H), 6.32 (t, <i>J</i> = 7.1 Hz, 1H), 5.13 - 5.09 (dd, <i>J</i> = 10.8, 8.9 Hz, 1H), 5.00 (d, <i>J</i> = 5.8 Hz, 1H), 4.74 (t, <i>J</i> = 5.8 Hz, 1H), 4.30 (dd, <i>J</i> = 12.9, 2.9 Hz, 1H), 4.15 - 3.92 (m, 4H), 3.76 (s, 3H), 3.64 - 3.60 (m, 1H), 3.41 - 3.36 (m, 2H) °
680		548.2	方法D , RT = 1.42min , 98%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.06 (d, <i>J</i> = 8.5 Hz, 1H), 7.92 - 7.78 (m, 2H), 7.63 (dd, <i>J</i> = 6.6, 2.0 Hz, 1H), 7.59 (dd, <i>J</i> = 7.3, 2.0 Hz, 1H), 7.58 - 7.43 (m, 2H), 6.77 (d, <i>J</i> = 10.5 Hz, 2H), 6.32 (t, <i>J</i> = 7.3 Hz, 1H), 5.12 - 5.07 (m, 1H), 5.04 - 4.94 (m, 1H), 4.80 - 4.69 (m, 1H), 4.30 - 4.27 (m, 1H), 4.14 - 3.90 (m, 4H), 3.77 (s, 3H), 3.64 - 3.60 (m, 1H), 3.41 - 3.36 (m, 2H) °

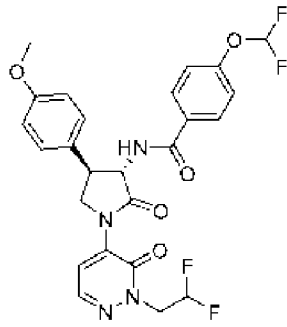
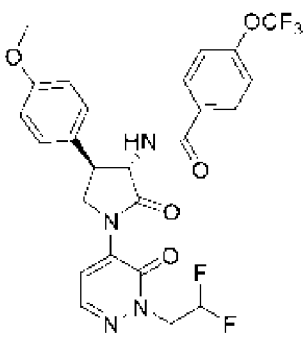
681		580.3	方法D , RT = 1.40min , 98%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.00 (d, <i>J</i> = 8.5 Hz, 1H), 7.90 (d, <i>J</i> = 8.8 Hz, 2H), 7.63 (dd, <i>J</i> = 6.8, 2.0 Hz, 2H), 7.34 (t, <i>J</i> = 74.0 Hz, 1H), 7.27 (d, <i>J</i> = 8.8 Hz, 2H), 6.78 - 6.75 (m, 2H), 6.32 (t, <i>J</i> = 7.0 Hz, 1H), 5.13 - 5.08 (m, 1H), 4.32 - 4.28 (m, 1H), 4.15 - 3.92 (m, 4H), 3.77 (s, 3H), 3.63 - 3.60 (m, 2H), 3.38 - 3.33 (m, 3H)。
682		604.3	方法D , RT = 1.69min , 98%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.14 - 8.87 (m, 1H), 7.96 - 7.84 (m, 2H), 7.62 - 7.50 (m, 1H), 7.28 (t, <i>J</i> = 75.1 Hz, 1H), 7.37 - 7.13 (m, 2H), 6.81 - 6.68 (m, 2H), 6.26 - 6.12 (m, 1H), 5.36 - 4.84 (m, 2H), 4.30 - 4.04 (m, 3H), 3.81 - 3.72 (2s, 3H), 3.66 - 3.62 (m, 1H), 3.51 - 3.45 (m, 1H), 3.12 - 3.10 (m, 1H), 2.22 - 2.05 (2s, 3H), 0.92 - 0.68 (m, 1H), 0.48 - 0.32 (m, 2H), 0.32 - 0.04 (m, 2H)。(可互相轉化之阻轉異構物之混合物)

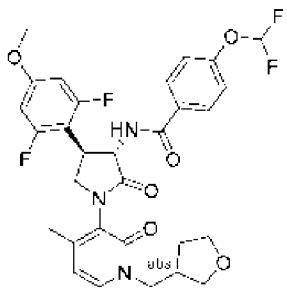
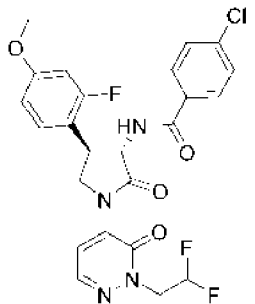
683		622.3	方法D , RT = 1.85min , 98%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.31 - 8.93 (m, 1H), 8.06 - 7.83 (m, 2H), 7.67 - 7.52 (m, 1H), 7.52 - 7.41 (m, 2H), 6.86 - 6.68 (m, 2H), 6.27 - 6.12 (m, 1H), 5.38 - 4.84 (m, 2H), 4.32 - 4.07 (m, 3H), 3.80 - 3.71 (2s, 3H), 3.66 - 3.60 (m, 1H), 3.51 - 3.45 (m, 1H), 3.18 - 3.10 (m, 2H), 2.21 - 1.96 (2s, 3H), 0.93 - 0.75 (m, 1H), 0.48 - 0.33 (m, 2H), 0.30 - 0.04 (m, 2H) 。 (可互相轉化之阻轉異構物之混合物)
684		573.2	方法D , RT = 1.67min , 98%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.21 - 8.85 (m, 1H), 7.92 - 7.79 (m, 2H), 7.69 - 7.45 (m, 3H), 6.81 - 6.68 (m, 2H), 6.28 - 6.08 (m, 1H), 5.38 - 4.82 (m, 2H), 4.32 - 4.04 (m, 3H), 3.80 - 3.75 (2s, 3H), 3.72 - 3.60 (m, 1H), 3.51 - 3.45 (m, 1H), 3.21 - 3.02 (m, 1H), 2.20 - 1.99 (2s, 3H), 0.91 - 0.74 (m, 1H), 0.47 - 0.33 (m, 2H), 0.29 - 0.20 (m, 1H), 0.20 - 0.07 (m, 1H) 。 (可互相轉化之阻轉異構物之混合物)

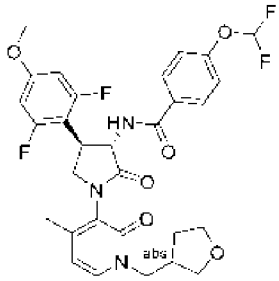
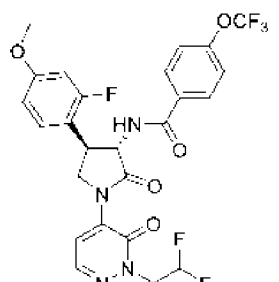
685		604.3	方法D , RT = 1.72min , 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.17 - 8.82 (m, 1H), 8.01 - 7.81 (m, 2H), 7.33 (t, <i>J</i> = 75.1 Hz, 1H), 7.58 - 7.16 (m, 3H), 6.77 (dd, <i>J</i> = 10.6, 4.9 Hz, 2H), 6.19 (dd, <i>J</i> = 12.3, Hz, 1H), 5.39 - 4.78 (m, 2H), 4.31 - 4.03 (m, 3H), 3.81 - 3.72 (2s, 3H), 3.67 - 3.60 (m, 1H), 3.51 - 3.45 (m, 1H), 3.20 - 3.06 (m, 1H), 2.23 - 1.99 (2s, 3H), 0.91 - 0.71 (m, 1H), 0.48 - 0.33 (m, 2H), 0.31 - 0.21 (m, 1H), 0.19 - 0.07 (m, 1H)。(可互相轉化之阻轉異構物之混合物)
686		622.3	方法D , RT = 1.87min , 98%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.22 - 8.95 (m, 1H), 8.03 - 7.86 (m, 2H), 7.58 - 7.54 (m, 1H), 7.53 - 7.37 (m, 2H), 6.79 - 6.75 (m, 2H), 6.22 - 6.17 (m, 1H), 5.37 - 4.95 (m, 1H), 4.94 - 4.84 (m, 1H), 4.29 - 4.04 (m, 3H), 3.77 - 3.76 (2s, 3H), 3.72 - 3.61 (m, 1H), 3.55 - 3.46 (m, 1H), 3.18 - 3.10 (m, 1H), 2.22 - 2.04 (2s, 3H), 0.88 - 0.78 (m, 1H), 0.46 - 0.33 (m, 2H), 0.30 - 0.22 (m, 1H), 0.19 - 0.09 (m, 1H)。(可互相轉化之阻轉異構物之混合物)

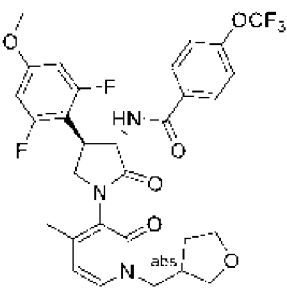
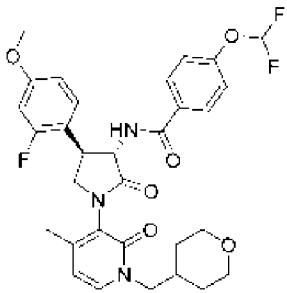
687		556.2	方法D , RT = 1.881 min , 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.14 - 8.91 (m, 1H), 8.08 - 7.92 (m, 2H), 7.79 - 7.62 (m, 1H), 7.50 - 7.46 (m, 2H), 7.42 - 7.23 (m, 2H), 6.93 - 6.89 (m, 2H), 6.34 - 6.14 (m, 1H), 5.28 - 4.65 (m, 2H), 4.12 - 3.82 (m, 3H), 3.78 - 3.48 (m, 4H), 2.36 - 2.24 (m, 3H), 2.21 - 2.08 (2s, 3H), 1.84 - 1.65 (m, 1H), 0.58 - 0.21 (m, 1H)。(可互相轉化之阻轉異構物之混合物)
688		574.2	方法D , RT = 2.072 min , 99%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.16 - 8.97 (m, 1H), 8.07 - 7.92 (m, 2H), 7.82 - 7.67 (m, 1H), 7.65 - 7.38 (m, 3H), 6.90 - 6.70 (m, 2H), 6.32 - 6.15 (m, 1H), 5.82 - 5.32 (m, 1H), 5.11 - 4.81 (m, 2H), 4.32 - 3.73 (m, 4H), 3.70 - 3.55 (m, 2H), 2.44 - 2.24 (m, 3H), 2.22 - 2.05 (2s, 3H), 1.99 - 1.72 (m, 1H), 0.54 - 0.22 (m, 1H)。(可互相轉化之阻轉異構物之混合物)

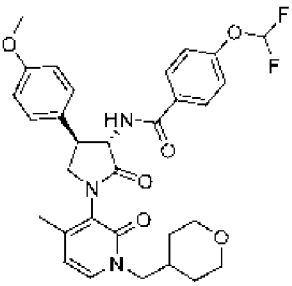
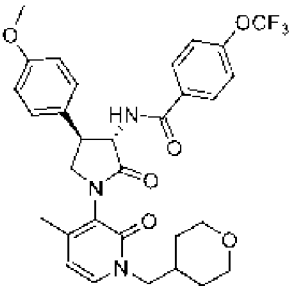
689		556.3	方法D， RT = 1.819 min，96%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.05 - 8.85 (m, 1H), 8.00 - 7.87 (m, 2H), 7.81 - 7.65 (m, 1H), 7.59 - 7.39 (m, 1H), 7.38 - 6.92 (m, 3H), 6.87 - 6.66 (m, 2H), 6.33 - 6.19 (m, 1H), 5.42 - 4.81 (m, 2H), 4.20 - 3.89 (m, 3H), 3.78 - 3.74 (2s, 3H), 3.63 - 3.54 (m, 1H), 2.39 - 2.23 (m, 3H), 2.22 - 2.08 (2s, 3H), 1.84 - 1.70 (m, 1H), 0.56 - 0.30 (m, 1H)。(可互相轉化之阻轉異構物之混合物)
690		503.1	方法D， RT = 1.71 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.99 (d, J = 8.6 Hz, 1H), 8.04 (d, J = 4.6 Hz, 1H), 7.91 - 7.83 (m, 2H), 7.78 (d, J = 4.6 Hz, 1H), 7.59 - 7.50 (m, 2H), 7.40 - 7.31 (m, 2H), 6.95 - 6.86 (m, 2H), 6.39 (tt, J = 54.8, 4.4 Hz, 1H), 5.04 (dd, J = 11.6, 8.4 Hz, 1H), 4.55 (dt, J = 14.5, 4.0 Hz, 2H), 4.46 (dd, J = 9.9, 8.2 Hz, 1H), 3.98 (t, J = 10.4 Hz, 1H), 3.82 - 3.74 (m, 1H), 3.73 (s, 3H)。

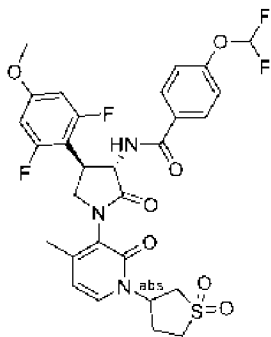
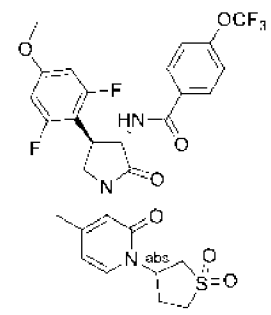
691		535.1	方法D , RT = 1.86 min , 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.93 (d, <i>J</i> = 8.6 Hz, 1H), 8.04 (d, <i>J</i> = 4.9 Hz, 1H), 7.94 - 7.86 (m, 2H), 7.79 (d, <i>J</i> = 4.6 Hz, 1H), 7.40 - 7.34 (m, 2H), 7.33 (t, <i>J</i> = 75.1 Hz, 1H), 7.26 (d, <i>J</i> = 8.8 Hz, 2H), 6.95 - 6.86 (m, 2H), 6.39 (tt, <i>J</i> = 55.8, 4.4 Hz, 1H), 5.03 (dd, <i>J</i> = 11.6, 8.4 Hz, 1H), 4.56 (dt, <i>J</i> = 14.4, 4.2 Hz, 2H), 4.46 (dd, <i>J</i> = 9.9, 8.2 Hz, 1H), 3.98 (t, <i>J</i> = 10.4 Hz, 1H), 3.82 - 3.74 (m, 1H), 3.73 (s, 3H) °
692		553.1	方法D , RT = 1.86 min , 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.04 (d, <i>J</i> = 8.3 Hz, 1H), 8.05 (d, <i>J</i> = 4.6 Hz, 1H), 8.01 - 7.92 (m, 2H), 7.79 (d, <i>J</i> = 4.6 Hz, 1H), 7.48 (d, <i>J</i> = 8.1 Hz, 2H), 7.41 - 7.29 (m, 2H), 6.96 - 6.85 (m, 2H), 6.40 (tt, <i>J</i> = 55.8, 4.3 Hz, 1H), 5.05 (dd, <i>J</i> = 11.6, 8.4 Hz, 1H), 4.56 (dt, <i>J</i> = 14.5, 4.3 Hz, 2H), 4.46 (dd, <i>J</i> = 9.9, 8.4 Hz, 1H), 3.98 (t, <i>J</i> = 10.4 Hz, 1H), 3.81 - 3.73 (m, 1H), 3.72 (s, 3H) °

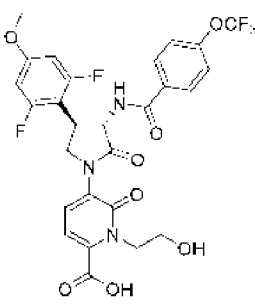
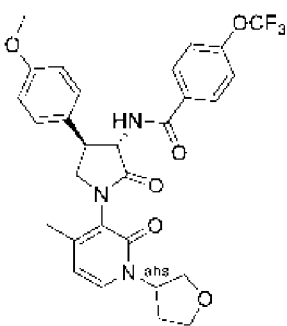
693		604.3	方法D， RT = 1.629 min，99%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.14 - 8.81 (m, 1H), 7.96 - 7.82 (m, 2H), 7.74 - 7.58 (m, 1H), 7.58 - 7.08 (m, 3H), 6.76 (m, 2H), 6.32 - 6.18 (m, 1H), 5.39 - 4.77 (m, 1H), 4.32 - 4.02 (m, 2H), 4.00 - 3.85 (m, 2H), 3.83 - 3.71 (m, 4H), 3.68 - 3.57 (m, 2H), 3.54 - 3.43 (m, 2H), 2.71 - 2.61 (m, 1H), 2.22 - 2.02 (2s, 3H), 1.93 - 1.78 (m, 1H), 1.68 - 1.51 (m, 1H)。(可互相轉化之阻轉異構物之混合物)
694		521	方法D， RT = 1.78 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.02 (d, <i>J</i> = 8.6 Hz, 1H), 8.05 (d, <i>J</i> = 4.6 Hz, 1H), 7.91 - 7.80 (m, 2H), 7.78 (d, <i>J</i> = 4.6 Hz, 1H), 7.61 - 7.43 (m, 3H), 6.90 - 6.75 (m, 2H), 6.39 (tt, <i>J</i> = 56.2, 5.1 Hz, 1H), 5.13 (dd, <i>J</i> = 11.1, 8.4 Hz, 1H), 4.55 (dt, <i>J</i> = 14.4, 4.3, Hz, 2H), 4.46 (t, <i>J</i> = 7.9 Hz, 1H), 4.09 - 3.88 (m, 2H), 3.75 (s, 3H)。

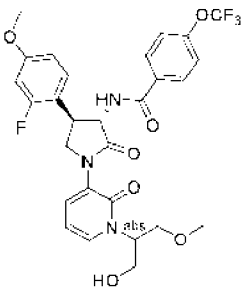
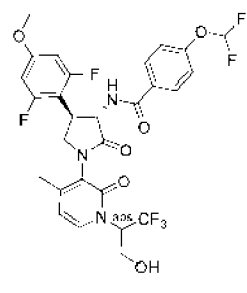
695		604.3	方法D， RT = 1.619 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.14 - 8.81 (m, 1H), 7.98 - 7.81 (m, 2H), 7.73 - 7.58 (m, 1H), 7.56 - 7.04 (m, 3H), 6.78 - 6.74 (m, 2H), 6.31 - 6.11 (m, 1H), 5.41 - 4.81 (m, 1H), 4.32 - 3.97 (m, 3H), 3.94 - 3.72 (m, 5H), 3.69 - 3.57 (m, 2H), 3.55 - 3.42 (m, 2H), 2.70 - 2.61 (m, 1H), 2.21 - 1.97 (2s, 3H), 1.93 - 1.80 (m, 1H), 1.71 - 1.54 (m, 1H)。(可互相轉化之阻轉異構物之混合物)
696		571.1	方法D， RT = 1.92 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.06 (d, J = 8.6 Hz, 1H), 8.05 (d, J = 4.9 Hz, 1H), 8.00 - 7.89 (m, 2H), 7.78 (d, J = 4.9 Hz, 1H), 7.54 (t, J = 8.8 Hz, 1H), 7.48 (d, J = 8.3 Hz, 2H), 6.86 - 6.75 (m, 2H), 6.39 (tt, J = 54.8, 5.1 Hz, 1H), 5.13 (dd, J = 11.0, 8.6 Hz, 1H), 4.55 (dt, J = 14.4, 4.2Hz, 2H), 4.47 (t, J = 7.9 Hz, 1H), 4.08 - 3.92 (m, 2H), 3.75 (s, 3H)。

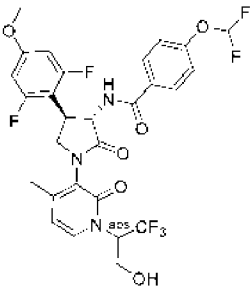
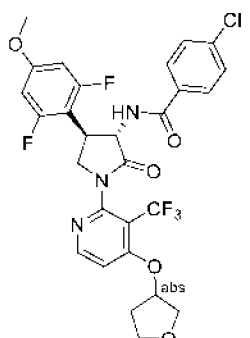
697		622.2	方法D , RT = 1.788 min , 97%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.23 - 8.92 (m, 1H), 8.05 - 7.87 (m, 2H), 7.78 - 7.61 (m, 1H), 7.55 - 7.37 (m, 2H), 6.78 - 6.73 (m, 2H), 6.30 - 6.13 (m, 1H), 5.38 - 4.81 (m, 1H), 4.31 - 3.95 (m, 3H), 3.93 - 3.83 (m, 2H), 3.75 - 3.70 (s, 3H), 3.67 - 3.58 (m, 2H), 3.53 - 3.43 (m, 2H), 2.72 - 2.64 (m, 1H), 2.24 - 2.02 (2s, 3H), 1.93 - 1.82 (m, 1H), 1.68 - 1.54 (m, 1H) 。 (可互相轉化之阻轉異構物之 混合物)
698		600.2	方法D , RT = 1.642 min , 96%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 8.97 - 8.92 (m, 1H), 7.98 - 7.83 (m, 2H), 7.60 - 7.58 (m, 1H), 7.56 - 7.13 (m, 2H), 7.10 (m, 2H), 6.87 - 6.70 (m, 2H), 6.22 - 6.19 (m, 1H), 5.43 - 4.74 (m, 1H), 4.19 - 3.87 (m, 3H), 3.87 - 3.70 (m, 5H), 3.62 - 3.37 (m, 1H), 3.26 - 3.15 (m, 3H), 2.23 - 2.06 (2s, 3H), 2.04 - 1.93 (m, 1H), 1.49 - 1.38 (m, 2H), 1.34 - 1.19 (m, 2H) 。(可 互相轉化之阻轉異構物之混 合物)

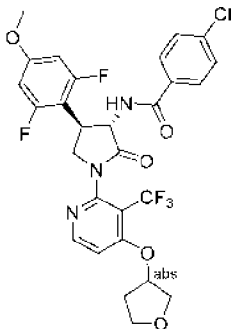
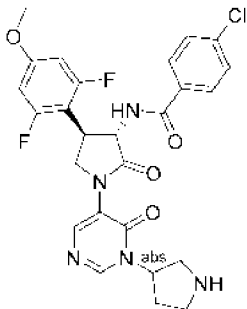
699		582.3	方法D， RT = 1.565 min，94%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.95 - 8.93 (m, 1H), 7.95 - 7.92 (m, 2H), 7.61 - 7.59 (m, 1H), 7.39 - 7.22 (m, 5H), 6.92 - 6.90 (m, 2H), 6.21 (d, <i>J</i> = 6.8 Hz, 1H), 5.32 - 4.58 (m, 1H), 3.94 - 3.69 (m, 9H), 3.67 - 3.38 (m, 1H), 3.30 - 3.18 (m, 2H), 2.23 - 2.06 (2s, 3H), 2.03 - 1.90 (m, 1H), 1.51 - 1.36 (m, 2H), 1.34 - 1.16 (m, 2H)。 (可互相轉化之阻轉異構物之混合物)
700		600.3	方法D， RT = 1.75 min，94%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.05 - 9.03 (m, 1H), 8.02 - 7.97 (m, 2H), 7.61 - 7.59 (m, 1H), 7.49 - 7.47 (m, 2H), 7.40 - 7.30 (m, 2H), 6.93 - 6.90 (m, 2H), 6.21 (d, <i>J</i> = 6.8 Hz, 1H), 5.31 - 4.63 (m, 1H), 3.93 - 3.69 (m, 10H), 3.23 (m, 2H), 2.18 - 2.06 (2s, 3H), 2.03 - 1.89 (m, 1H), 1.51 - 1.36 (m, 2H), 1.32 - 1.21 (m, 2H)。 (可互相轉化之阻轉異構物之混合物)

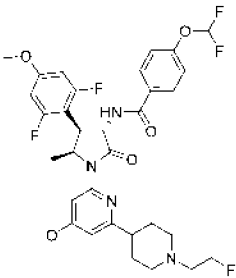
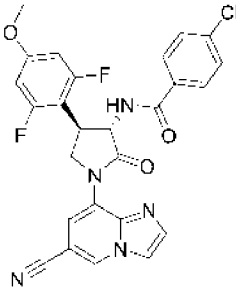
701		638.3	方法D， RT = 1.61 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.10 - 8.90 (m, 1H), 7.94 - 7.84 (m, 2H), 7.79 - 7.68 (m, 1H), 7.33 (t, J = 73.6 Hz, 1H), 7.26 - 7.24 (m, 2H), 6.81 - 6.68 (m, 2H), 6.40 - 6.29 (m, 1H), 5.49 - 4.75 (m, 2H), 4.31 - 4.04 (m, 3H), 3.78 - 3.74 (2s, 3H), 3.62 - 3.47 (m, 4H), 3.29 - 3.23 (m, 1H), 2.48 - 2.39 (m, 1H), 2.24 - 2.02 (2s, 3H)。 (可互相轉化之阻轉異構物之混合物)
702		656.2	方法D， RT = 1.78 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.19 - 9.00 (m, 1H), 8.00 - 7.88 (m, 2H), 7.77 - 7.67 (m, 1H), 7.52 - 7.41 (m, 2H), 6.82 - 6.70 (m, 2H), 6.40 - 6.28 (m, 1H), 5.46 - 4.81 (m, 2H), 4.29 - 4.05 (m, 3H), 3.78 - 3.74 (2s, 3H), 3.62 - 3.45 (m, 4H), 3.27 - 3.21 (m, 1H), 2.47 - 2.38 (m, 1H), 2.24 - 2.04 (2s, 3H)。 (可互相轉化之阻轉異構物之混合物)

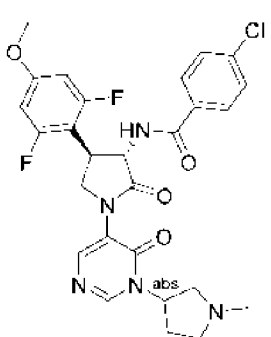
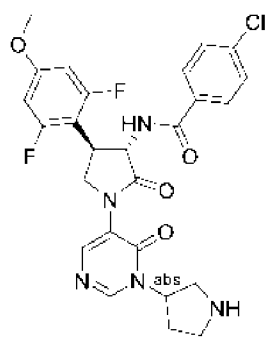
703		612.2	方法D， RT = 1.412 min， 95.6%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.12 (dd, <i>J</i> = 14.9, 8.4 Hz, 1H), 7.95 (d, <i>J</i> = 8.8 Hz, 2H), 7.84 - 7.67 (m, 1H), 7.49 (t, <i>J</i> = 7.3 Hz, 2H), 7.26 (d, <i>J</i> = 7.5 Hz, 1H), 6.78 (t, <i>J</i> = 10.1 Hz, 2H), 5.20 - 4.98 (m, 1H), 4.68 (t, <i>J</i> = 5.1 Hz, 1H), 4.26 - 4.21 (m, 1H), 4.17 - 4.03 (m, 2H), 4.01 - 3.90 (m, 1H), 3.77 (s, 3H), 3.75 - 3.70 (m, 1H), 3.34 - 3.30 (m, 1H)。
704		572.2	方法D， RT = 3.00 min，99%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.06 - 9.01 (m, 1H), 8.05 - 7.94 (m, 2H), 7.63 - 7.44 (m, 3H), 7.42 - 7.28 (m, 2H), 6.98 - 6.84 (m, 2H), 6.31 - 6.27 (m, 1H), 5.38 - 5.34 (m, 1H), 5.25 - 4.67 (m, 1H), 4.14 - 3.99 (m, 2H), 3.95 - 3.81 (m, 3H), 3.79 - 3.74 (m, 1H), 3.75 - 3.70 (2s, 3H), 3.67 - 3.45 (m, 1H), 2.48 - 2.39 (m, 1H), 2.26 - 2.08 (2s, 3H), 2.04 - 1.90 (m, 1H)。 (可互相轉化之阻轉異構物之 混合物)

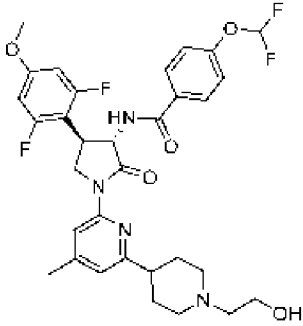
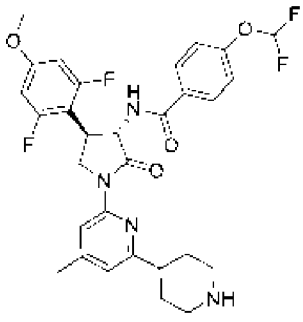
705		594.2	方法F， RT = 2.526 min， 99.9%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.06 (d, <i>J</i> = 8.8 Hz, 1H), 7.98 (d, <i>J</i> = 8.8 Hz, 2H), 7.69 (dd, <i>J</i> = 7.0, 1.6 Hz, 1H), 7.57 (dd, <i>J</i> = 7.3, 1.6 Hz, 1H), 7.54 - 7.46 (m, 3H), 6.85 - 6.78 (m, 2H), 6.35 (t, <i>J</i> = 7.0 Hz, 1H), 5.20 - 5.01 (m, 3H), 4.19 - 4.12 (m, 1H), 4.06 - 3.96 (m, 1H), 3.80 - 3.64 (m, 5H), 3.75 (s, 3H), 3.24 (s, 3H)。
706		632.2	方法D， RT = 1.765 min， 98.8%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.15 - 8.83 (m, 1H), 7.97 - 7.79 (m, 2H), 7.69 - 7.56 (m, 1H), 7.35 (t, <i>J</i> = 74.8 Hz, 1H), 7.31 - 7.27 (m, 2H), 6.84 - 6.66 (m, 3H), 6.34 - 6.19 (m, 1H), 5.36 - 4.80 (m, 1H), 4.46 - 4.08 (m, 4H), 3.91 - 3.69 (m, 4H), 3.52 - 3.49 (m, 1H), 2.26 - 1.97 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)

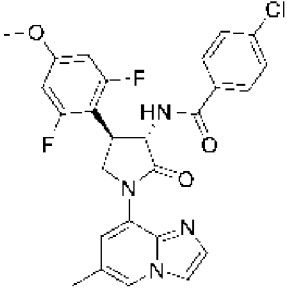
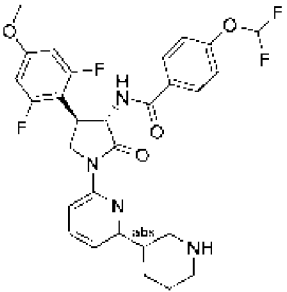
707		632.3	方法C， RT = 1.720 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.14 - 8.86 (m, 1H), 7.97 - 7.77 (m, 2H), 7.69 - 7.56 (m, 1H), 7.35 (t, J = 74.8 Hz, 1H), 7.31 - 7.27 (m, 2H), 6.85 - 6.53 (m, 3H), 6.34 - 6.15 (m, 1H), 5.38 - 4.78 (m, 1H), 4.47 - 4.01 (m, 4H), 3.91 - 3.69 (m, 4H), 3.56 - 3.47 (m, 1H), 2.25 - 2.04 (2s, 3H)。(可互相轉化之阻轉異構物之混合物)
708		612.2	方法D， RT = 1.918 min， 98.4%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.13 - 9.07 (m, 1H), 8.66 - 8.59 (m, 1H), 7.86 - 7.79 (m, 2H), 7.56 (d, J = 8.6 Hz, 2H), 7.39 - 7.32 (m, 1H), 6.78 (d, J = 11.5 Hz, 2H), 5.39 - 5.34 (m, 1H), 5.14 - 5.04 (m, 1H), 4.48 - 4.13 (m, 2H), 4.01 - 3.73 (m, 7H), 3.33 - 3.30 (m, 1H), 2.35 - 2.27 (m, 1H), 2.12 - 1.91 (m, 1H)。(可互相轉化之阻轉異構物之混合物)

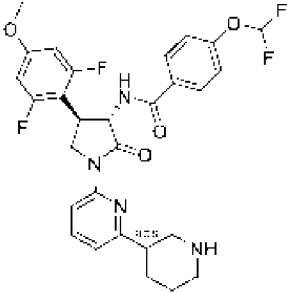
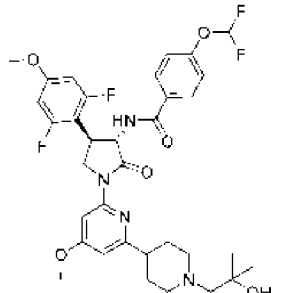
709		612.2	方法D， RT = 1.918 min， 97.4%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.14 - 9.07 (m, 1H), 8.67 - 8.58 (m, 1H), 7.87 - 7.76 (m, 2H), 7.56 (d, <i>J</i> = 8.6 Hz, 2H), 7.36 (br d, <i>J</i> = 5.6 Hz, 1H), 6.78 (d, <i>J</i> = 10.8 Hz, 2H), 5.39 - 5.31 (m, 1H), 5.13 - 5.02 (m, 1H), 4.47 - 4.13 (m, 2H), 4.01 - 3.73 (m, 7H), 3.33 - 3.30 (m, 1H), 2.37 - 2.22 (m, 1H), 2.09 - 1.94 (m, 1H)。 (可互相轉化之阻轉異構物之混合物)
710		544.2	方法D， RT = 1.207 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.07 (d, <i>J</i> = 8.8 Hz, 1H), 8.53 (s, 1H), 8.12 (s, 1H), 7.89 - 7.74 (m, 2H), 7.62 - 7.50 (m, 2H), 6.77 (d, <i>J</i> = 10.8 Hz, 2H), 5.17 - 5.04 (m, 2H), 4.17 - 4.06 (m, 1H), 4.00 - 3.92 (m, 2H), 3.76 (s, 3H), 3.19 - 3.06 (m, 3H), 2.97 (dd, <i>J</i> = 11.8, 3.8 Hz, 1H), 2.89 - 2.79 (m, 1H), 2.30 - 2.18 (m, 1H), 1.92 - 1.88 (m, 1H)。

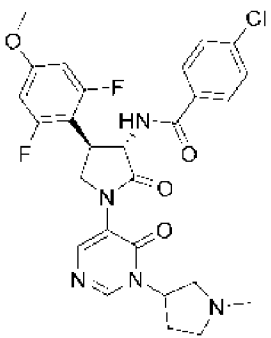
711		663.3	方法C， RT = 1.606 min， 97.14%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 8.88 (d, <i>J</i> = 8.3 Hz, 1H), 7.93 - 7.86 (m, 2H), 7.85 - 7.80 (m, 1H), 7.35 (t, <i>J</i> = 72 Hz, 1H), 7.30 - 7.23 (m, 2H), 6.84 - 6.76 (m, 2H), 6.72 - 6.68 (m, 1H), 5.67 (dd, <i>J</i> = 12.5, 8.3 Hz, 1H), 5.03 - 4.90 (m, 1H), 4.49 (dt, <i>J</i> = 47.2, 4.5 Hz, 2H), 4.35 - 4.26 (m, 1H), 3.82 (s, 3H), 3.78 (s, 3H), 2.98 (br d, <i>J</i> = 10.8 Hz, 2H), 2.69 - 2.63 (m, 1H), 2.62 - 2.55 (m, 2H), 2.15 - 2.05 (m, 2H), 1.84 - 1.68 (m, 4H), 1.21 (d, <i>J</i> = 6.2 Hz, 3H)。
712		522.1	方法C， RT = 1.594 min， 96.0%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.33 (d, <i>J</i> = 1.0 Hz, 1H), 9.15 (d, <i>J</i> = 8.3 Hz, 1H), 8.14 (s, 1H), 7.85 (d, <i>J</i> = 8.2 Hz, 2H), 7.77 (d, <i>J</i> = 6.5 Hz, 2H), 7.58 (d, <i>J</i> = 8.5 Hz, 2H), 6.80 (d, <i>J</i> = 10.8 Hz, 2H), 5.17 (dd, <i>J</i> = 11.1, 8.6 Hz, 1H), 4.64 - 4.54 (m, 1H), 4.41 (t, <i>J</i> = 10.1 Hz, 1H), 4.23 (q, <i>J</i> = 10.0 Hz, 1H), 3.78 (s, 3H)。

713		558.2	方法D , RT = 1.623 min , 99.7%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.08 (d, <i>J</i> = 8.5 Hz, 1H), 8.64 (s, 1H), 8.13 (s, 1H), 7.88 - 7.79 (m, 2H), 7.60 - 7.53 (m, 2H), 6.78 (d, <i>J</i> = 11.0 Hz, 2H), 5.26 - 5.17 (m, 1H), 5.12 (dd, <i>J</i> = 11.3, 8.8 Hz, 1H), 4.17 - 4.05 (m, 1H), 3.96 (d, <i>J</i> = 9.5 Hz, 2H), 3.77 (s, 3H), 3.06 (td, <i>J</i> = 8.8, 3.5 Hz, 1H), 2.92 (d, <i>J</i> = 9.0 Hz, 1H), 2.59 - 2.53 (m, 1H), 2.47 - 2.38 (m, 1H), 2.32 (s, 3H), 2.24 (m, 1H), 1.98 - 1.83 (m, 1H) °
714		544.1	方法D , RT = 1.204 min , 98%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.07 (d, <i>J</i> = 8.5 Hz, 1H), 8.53 (s, 1H), 8.13 (s, 1H), 7.89 - 7.76 (m, 2H), 7.64 - 7.46 (m, 2H), 6.77 (d, <i>J</i> = 10.8 Hz, 2H), 5.18 - 5.02 (m, 2H), 4.15 - 4.04 (m, 1H), 3.99 - 3.91 (m, 2H), 3.76 (s, 3H), 3.17 - 3.09 (m, 3H), 3.01 (dd, <i>J</i> = 12.0, 3.8 Hz, 1H), 2.91 - 2.82 (m, 1H), 2.30 - 2.20 (m, 1H), 1.94 - 1.86 (m, 1H) °

715		631.2	方法D， RT = 1.51 min，96%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.11 (d, <i>J</i> = 8.3 Hz, 1H), 8.05 (s, 1H), 7.90 (d, <i>J</i> = 8.8 Hz, 2H), 7.36 (t, <i>J</i> = 72.0 Hz, 1H), 7.27 (d, <i>J</i> = 8.8 Hz, 2H), 6.97 (s, 1H), 6.81 (d, <i>J</i> = 10.8 Hz, 2H), 5.34 (d, <i>J</i> = 3.5 Hz, 1H), 5.02 (dd, <i>J</i> = 8.0, 10.8 Hz, 1H), 4.46 (t, <i>J</i> = 10.0 Hz, 1H), 4.16 (q, <i>J</i> = 9.8 Hz, 1H), 4.03 - 3.93 (m, 1H), 3.78 (s, 3H), 3.78 - 3.66 (m, 2H), 3.59 (d, <i>J</i> = 12.0 Hz, 2H), 3.22 - 3.14 (m, 2H), 3.12 - 3.01 (m, 2H), 2.93 - 2.84 (m, 1H), 2.36 (s, 3H), 2.13 - 1.95 (m, 4H)。
716		587.2	方法D， RT = 1.485 min，99%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.11 (d, <i>J</i> = 8.1 Hz, 1H), 8.05 (s, 1H), 7.89 (d, <i>J</i> = 8.8 Hz, 2H), 7.36 (t, <i>J</i> = 72.0 Hz, 1H), 7.29 (d, <i>J</i> = 8.6 Hz, 2H), 6.96 (s, 1H), 6.81 (d, <i>J</i> = 10.8 Hz, 2H), 5.01 (dd, <i>J</i> = 10.8, 8.3 Hz, 1H), 4.45 (t, <i>J</i> = 9.7 Hz, 1H), 4.16 (q, <i>J</i> = 9.8 Hz, 1H), 4.04 - 3.87 (m, 1H), 3.79 (s, 3H), 3.39 - 3.31 (m, 3H), 3.09 - 2.89 (m, 3H), 2.36 (s, 3H), 2.05 - 1.80 (m, 4H)。

717		511.12	方法C， RT = 1.484 min， 100%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.14 (d, <i>J</i> = 8.5 Hz, 1H), 8.34 (s, 1H), 7.94 (d, <i>J</i> = 1.3 Hz, 1H), 7.91 - 7.79 (m, 2H), 7.63 - 7.48 (m, 3H), 7.37 (d, <i>J</i> = 1.0 Hz, 1H), 6.80 (d, <i>J</i> = 10.8 Hz, 2H), 5.17 (dd, <i>J</i> = 11.0, 8.5 Hz, 1H), 4.56 - 4.45 (m, 1H), 4.40 (t, <i>J</i> = 9.9 Hz, 1H), 4.22 (q, <i>J</i> = 10.0 Hz, 1H), 3.78 (s, 3H), 2.31 (s, 3H)。
718		573.2	方法D， RT = 1.429 min，96%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.08 (d, <i>J</i> = 8.0 Hz, 1H), 8.15 (d, <i>J</i> = 8.3 Hz, 1H), 7.89 (d, <i>J</i> = 8.8 Hz, 2H), 7.78 (t, <i>J</i> = 8.0 Hz, 1H), 7.35 (t, <i>J</i> = 73.5 Hz, 1H), 7.28 (d, <i>J</i> = 8.8 Hz, 2H), 7.08 (d, <i>J</i> = 7.3 Hz, 1H), 6.79 (d, <i>J</i> = 10.5 Hz, 2H), 5.12 - 5.03 (m, 1H), 4.52 - 4.41 (m, 1H), 4.16 - 4.08 (m, 1H), 3.98 (d, <i>J</i> = 10.0 Hz, 1H), 3.78 (s, 3H), 3.09 - 3.06 (m, 1H), 2.92 - 2.87 (m, 1H), 2.64 - 2.59 (m, 1H), 2.29 - 2.24 (m, 1H), 1.97 - 1.92 (m, 1H), 1.70 - 1.60 (m, 2H), 1.55 - 1.42 (m, 3H)。

719		573.2	方法D , RT = 1.439 min , 94%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.09 (d, <i>J</i> = 8.3 Hz, 1H), 8.14 (d, <i>J</i> = 8.3 Hz, 1H), 7.92 - 7.84 (m, 2H), 7.78 (t, <i>J</i> = 7.9 Hz, 1H), 7.35 (t, <i>J</i> = 73.3 Hz, 1H), 7.28 (d, <i>J</i> = 8.8 Hz, 2H), 7.07 (d, <i>J</i> = 7.5 Hz, 1H), 6.79 (d, <i>J</i> = 10.5 Hz, 2H), 5.07 (dd, <i>J</i> = 11.0, 8.3 Hz, 1H), 4.51 - 4.41 (m, 1H), 4.16 - 4.07 (m, 1H), 3.97 (t, <i>J</i> = 10.8 Hz, 1H), 3.78 (s, 3H), 3.10 - 3.07 (m, 1H), 2.92 - 2.87 (m, 1H), 2.65 - 2.58 (m, 1H), 1.97 - 1.90 (m, 1H), 1.76 (m, 1H), 1.69 - 1.58 (m, 2H), 1.55 - 1.34 (m, 3H) °
720		675.2	方法D , RT = 1.799min , 93.08%	¹ H NMR (400 MHz, DMSO-d ₆) δ = 9.08 (d, <i>J</i> = 8.5 Hz, 1H), 7.95 - 7.86 (m, 2H), 7.82 - 7.78 (m, 1H), 7.35 (t, <i>J</i> = 72 Hz, 1H), 7.32 - 7.24 (m, 2H), 6.83 - 6.75 (m, 2H), 6.71 - 6.67 (m, 1H), 5.07 (dd, <i>J</i> = 11.0, 8.5 Hz, 1H), 4.54 - 4.43 (m, 1H), 4.11 (q, <i>J</i> = 10.0 Hz, 1H), 3.99 - 3.92 (m, 1H), 3.83 (s, 3H), 3.78 (s, 3H), 3.07 - 2.99 (m, 2H), 2.57 - 2.53 (m, 1H), 2.25 - 2.13 (m, 4H), 1.80 - 1.72 (m, 4H), 1.07 (s, 6H) °

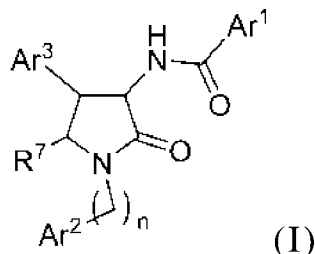
721		558.2	方法D， RT = 1.608 min，97%	¹ H NMR (400 MHz, DMSO- d ₆) δ = 9.08 (d, <i>J</i> = 8.5 Hz, 1H), 8.64 (s, 1H), 8.13 (s, 1H), 7.83 (d, <i>J</i> = 8.5 Hz, 2H), 7.57 (d, <i>J</i> = 8.5 Hz, 2H), 6.78 (d, <i>J</i> = 10.5 Hz, 2H), 5.25 - 5.16 (m, 1H), 5.12 (dd, <i>J</i> = 11.0, 8.5 Hz, 1H), 4.17 - 4.05 (m, 1H), 4.01 - 3.92 (m, 2H), 3.77 (s, 3H), 3.06 (td, <i>J</i> = 8.6, 3.3 Hz, 1H), 2.94 (d, <i>J</i> = 11.5 Hz, 1H), 2.58 - 2.53 (m, 1H), 2.47 - 2.38 (m, 1H), 2.32 (s, 3H), 2.28 - 2.19 (m, 1H), 1.94 - 1.79 (m, 1H)。
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【0129】熟習此項技術者應明瞭，本揭示內容並不限於前述說明性實例，且本揭示內容可在不背離其基本屬性之情形下以其他特定形式來體現。因此，期望將所有態樣中之實例視為說明性的而非限制性的，以隨附申請專利範圍而非前述實例為準，且因此本揭示內容意欲囊括屬申請專利範圍之等效內容之含義及範圍內之所有變化。

【發明申請專利範圍】

【請求項1】

一種式(I)化合物，



或其醫藥上可接受之鹽、立體異構物或互變異構物，其中：

Ar¹係芳基或吡啶基，各自經1至3個R¹取代；

Ar²係C₃₋₆環烷基、芳基，或包含1至4個選自O、S(O)_p、N及NR^{2a}之雜原子之5員至12員雜環基，且各自經0至3個R²取代；

Ar³係苯基或吡啶基，各自經1個R^{5a}、1個R^{5b}及1個R^{5c}取代；

R¹係鹵基、C₁₋₄鹵烷基、C₁₋₄烷氧基或C₁₋₄鹵烷氧基；

R²係側氧基(oxo)、氰基、鹵基、經0至5個R^e取代之C₁₋₆烷基、-OR^b、-NR³R⁴、-NR⁴C(O)R^b、-NR⁴(CR^dR^d)₀₋₁C(O)NR³R⁴、(C₁₋₄烷基)₂(O)P-、C₃₋₆環烷基、芳基，或包含1至4個選自O、S(O)_p、N及NR^a之雜原子之5員至6員雜環基；

R^{2a}係氫、經0至5個R^e取代之C₁₋₄烷基、-(CR^dR^d)₁₋₄-NR³R⁴、-(CR^dR^d)₁₋₄-OR^b、-(CR^dR^d)₁₋₄-C(O)NR³R⁴、經0至5個R^e取代之-(CR^dR^d)_r-C₃₋₆環烷基、經0至5個R^e取代之-(CR^dR^d)_r-芳基，或包含1至4個選自O、S(O)_p、N及NR^a之雜原子且經0至5個R^e取代之-(CR^dR^d)_r-雜環基；

R³係氫、經0至5個R^e取代之C₁₋₄烷基、經0至5個R^e取代之C₃₋₆環烷基，或包含1至4個選自O、S(O)_p、N及NR⁸之雜原子且經0至5個R^e取代之雜環基；

R^4 係氫或 C_{1-4} 烷基；

或者， R^3 及 R^4 與二者連接之氮一起形成包含1至4個選自O、 $S(O)_p$ 、N及 NR^8 之雜原子且經1至3個 R^6 取代之4員至9員雜環基；

R^{5a} 係氫或鹵基；

R^{5b} 係氫或鹵基；

R^{5c} 係鹵基、 C_{1-4} 烷基、 C_{1-4} 鹵烷基、 C_{1-4} 烷氧基或氘代烷氧基(deuteroalkoxy)；

R^6 係氫、鹵基、側氧基、羥基，或經0至5個 R^e 取代之 C_{1-4} 烷基；

R^7 係氫或 C_{1-4} 烷基；

R^8 係氫、 C_{1-4} 烷基或 $-S(O)_pR^c$ ；

R^a 係氫，或經0至5個 R^e 取代之 C_{1-6} 烷基、經0至5個 R^e 取代之 C_{3-6} 環烷基、經0至5個 R^e 取代之芳基，或包含1至4個選自O、 $S(O)_p$ 、 NR^d 之雜原子且經0至5個 R^e 取代之雜環基；

R^b 係氫、經0至5個 R^e 取代之 C_{1-6} 烷基、經0至5個 R^e 取代之 C_{3-6} 環烷基、經0至5個 R^e 取代之芳基，或包含1至4個選自O、 $S(O)_p$ 、 NR^d 之雜原子且經0至5個 R^e 取代之雜環基；

R^c 係經0至5個 R^e 取代之 C_{1-4} 烷基；

R^d 係氫，或經0至5個 R^e 取代之 C_{1-4} 烷基；

R^e 係鹵基、氰基、側氧基、 $-OR^g$ 、 $-NR^gR^g$ 、 $-C(O)NR^gR^g$ 、 $-S(O)_pC_{1-4}$ 烷基、經0至5個 R^f 取代之 C_{1-6} 烷基、經0至5個 R^f 取代之 $-(CH_2)_r$ - C_{3-6} 環烷基、經0至5個 R^f 取代之 $-(CH_2)_r$ -芳基，或包含1至4個選自O、 $S(O)_p$ 、N及 NR^g 之雜原子且經0至5個 R^f 取代之 $-(CH_2)_r$ -雜環基；

R^f 係鹵基、氰基、羥基、側氧基、 C_{1-5} 烷基、 C_{3-6} 環烷基或苯基；

R^g 係氫、 C_{1-5} 烷基、 C_{3-6} 環烷基、芳基或雜環基；或 R^g 及 R^g 與二者連接之氮原子一起形成雜環基；

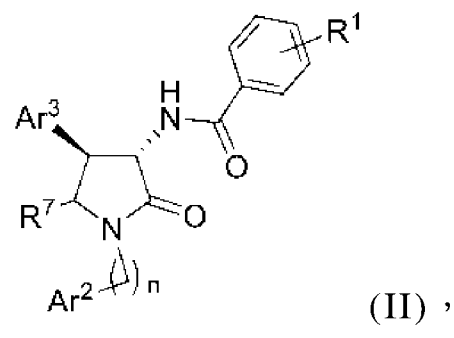
n 係0或1；

p 係0、1或2；且

r 係0、1、2、3或4。

【請求項2】

如請求項1之化合物或其醫藥上可接受之鹽、立體異構物或互變異構物，其中該化合物具有式(II)：



其中：

Ar^2 係 C_{3-6} 環烷基、苯基、包含1至2個N或 NR^{2a} 之5員至6員雜環基，各自經0至2個 R^2 取代；

Ar^3 係經1個 R^{5a} 、1個 R^{5b} 及1個 R^{5c} 取代之苯基；

R^1 係鹵基、 C_{1-4} 鹵烷基或 C_{1-4} 鹵烷氧基；

R^2 係側氧基、氰基、鹵基、經0至5個 R^e 取代之 C_{1-5} 烷基、 $-OR^b$ 、 $-NR^3R^4$ 、 $-NR^4C(O)R^b$ 、 $(C_{1-3}烷基)_2(O)P-$ 、 C_{3-6} 環烷基、芳基，或包含1至4個選自O、S、N及 NR^a 之雜原子之5員至6員雜環基；

R^{2a} 係氫、經0至4個 R^e 取代之 C_{1-4} 烷基、 $-(CHR^d)_{1-3}-C(O)NR^3R^4$ 、經0至4個 R^e 取代之 $-(CHR^d)_r-C_{3-6}$ 環烷基、經0至4個 R^e 取代之 $-(CHR^d)_r$ -芳基，或包含1至4個選自O、S、N及 NR^a 之雜原子且經0至4個 R^e 取代之-

(CHR^d)_r-雜環基；

R³係氫、經0至4個R^e取代之C₁₋₄烷基、C₃₋₆環烷基，或包含1至4個選自O、S、N及NR⁸之雜原子且經0至4個R^e取代之雜環基；

R⁴係氫或C₁₋₃烷基；

或者，R³及R⁴與二者連接之氮一起形成包含1至4個選自O、S、N及NR⁸之雜原子且經1至3個R⁶取代之4員至8員雜環基；

R^{5a}係氫或鹵基；

R^{5b}係氫或鹵基；

R^{5c}係鹵基、C₁₋₄烷基、C₁₋₄鹵烷基或C₁₋₄烷氧基；

R⁶係氫、鹵基、側氧基、羥基，或經0至4個R^e取代之C₁₋₄烷基；

R⁷係氫或C₁₋₃烷基；

R⁸係氫、C₁₋₃烷基或-S(O)_pR^c；

R^a係氫，或經0至5個R^e取代之C₁₋₆烷基；

R^b係氫、經0至5個R^e取代之C₁₋₆烷基，或包含1至4個選自O、S、N、NR^d之雜原子且經0至5個R^e取代之雜環基；

R^c係經0至5個R^e取代之C₁₋₃烷基；

R^d係氫，或經0至1個-OC₁₋₄烷基取代之C₁₋₄烷基；

R^e係鹵基、氰基、側氧基、-OR^g、-NR^gR^g、-C(O)NR^gR^g、-S(O)_pC₁₋₄烷基、經0至5個R^f取代之C₁₋₄烷基、經0至5個R^f取代之-(CH₂)_r-C₃₋₆環烷基、經0至5個R^f取代之-(CH₂)_r-芳基，或包含1至4個選自O、S、N及NR^g之雜原子且經0至5個R^f取代之-(CH₂)_r-雜環基；

R^f係鹵基、氰基、羥基、C₁₋₅烷基或C₃₋₆環烷基；

R^g係氫、C₁₋₅烷基或雜環基；

包含1至4個選自O、S、N及NR^a之雜原子且經0至3個R^e取代之-(CH₂)_r-雜環基；

R³係氫、經0至3個R^e取代之C₁₋₄烷基、C₃₋₆環烷基，或包含1至4個選自O、S、N及NR⁸之雜原子且經0至3個R^e取代之雜環基；

R⁴係氫或C₁₋₂烷基；

或者，R³及R⁴與二者連接之氮一起形成包含1至3個選自O、S、N及NR⁸之雜原子且經1至3個R⁶取代之4員至8員雜環基；

R^{5a}係氫或鹵基；

R^{5b}係氫或鹵基；

R^{5c}係鹵基或C₁₋₂烷氧基；

R⁶係氫、鹵基、側氧基、羥基，或經0至3個R^e取代之C₁₋₄烷基；

R⁷係氫或CH₃；

R⁸係氫、C₁₋₂烷基或-S(O)₂C₁₋₄烷基；

R^a係氫、經0至4個R^e取代之C₁₋₅烷基；

R^b係氫、經0至4個R^e取代之C₁₋₅烷基、包含1至4個選自O、S、N、NR^d之雜原子且經0至4個R^e取代之雜環基；

R^d係氫，或經0至1個-OC₁₋₄烷基取代之C₁₋₃烷基；

R^e係鹵基、氰基、側氧基、-OR^g、-NR^gR^g、C(O)NR^gR^g、-S(O)_pC₁₋₄烷基、經0至4個R^f取代之C₁₋₄烷基、經0至4個R^f取代之-(CH₂)_r-C₃₋₆環烷基、經0至4個R^f取代之-(CH₂)_r-芳基，或包含1至4個選自O、S、N及NR^g之雜原子且經0至4個R^f取代之-(CH₂)_r-雜環基；

R^f係鹵基、氰基、羥基或C₁₋₅烷基；

R^g係氫或C₁₋₄烷基；且

或者， R^3 及 R^4 與二者連接之氮一起形成包含1至3個選自O、S、N及NR⁸之雜原子且經1至3個 R^6 取代之4員至8員雜環基；

R^{5a} 係氫、F或Cl；

R^{5b} 係氫、F或Cl；

R^{5c} 係Cl或-OCH₃；

R^6 係氫、鹵基、側氧基、羥基，或經0至3個 R^e 取代之C₁₋₃烷基；

R^8 係氫、C₁₋₂烷基或S(O)₂C₁₋₃烷基；

R^a 係氫、經0至3個 R^e 取代之C₁₋₄烷基；

R^b 係氫、經0至3個 R^e 取代之C₁₋₄烷基、包含1至4個選自O、S、N及NR^d之雜原子且經0至3個 R^e 取代之雜環基；

R^d 係氫，或經0至1個-OC₁₋₄烷基取代之C₁₋₂烷基；

R^e 係鹵基、氰基、側氧基、-OR^g、-NR^gR^g、-C(O)NR^gR^g、-S(O)₂C₁₋₄烷基、經0至3個 R^f 取代之C₁₋₆烷基、經0至3個 R^f 取代之-(CH₂)_r-C₃₋₆環烷基，或包含1至4個選自O、S、N及NR^g之雜原子且經0至3個 R^f 取代之-(CH₂)_r-雜環基；

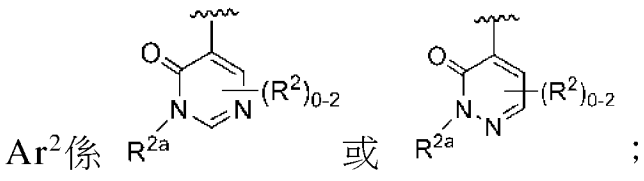
R^f 係鹵基、氰基、羥基或C₁₋₄烷基；

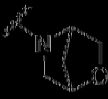
R^g 係氫或C₁₋₃烷基；且

r 係0或1。

【請求項5】

如請求項4之化合物或其醫藥上可接受之鹽、立體異構物或互變異構物，其中：



R^3 及 R^4 與二者連接之氮一起形成選自  及  之雜環基；

R^{5a} 係氫或H；

R^{5b} 係氫或H；

R^{5c} 係Cl或 $-OCH_3$ ；

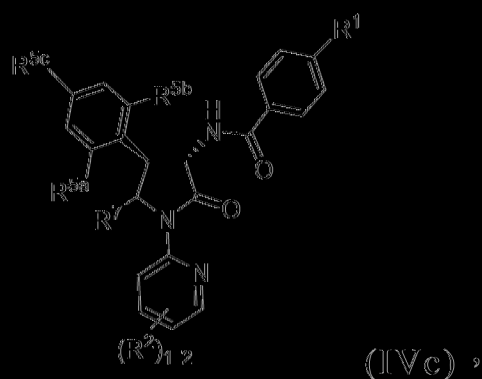
R^6 係氫、側氧基、鹵基、 $-CH_3$ 、 $-CH_2$ 、 $-CH_3$ 或 $-CH_2OH$ ；

R^8 係氫、 C_{1-2} 烷基或 $-S(O)_2C_{1-3}$ 烷基；且

R^d 係 $-CH_2OCH_3$ 。

[(請求項1)]

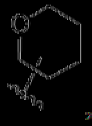
如請求項4之化合物或其醫藥上可接受之鹽、立體異構物或互變異構物，其中該化合物具有式(IVc)：

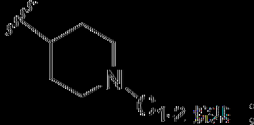


其中：

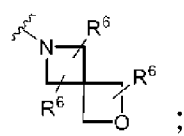
R^1 係Cl、 $-CH_3$ 、 $-OCH_2$ 或 $-OCH_3$ ；

R^2 係氧基、H、Cl、 $-CH_2OH$ 、 $-CH_3$ 、 $-CH_2$ 、 $-CH_3$ 、 $-OCH_3$ 、

$OCH(CH_3)_2$ 、 $-NR^3R^4$ 、 $(CH_3)_2(O)P$ 、 C_{3-6} 環烷基、、，或

；

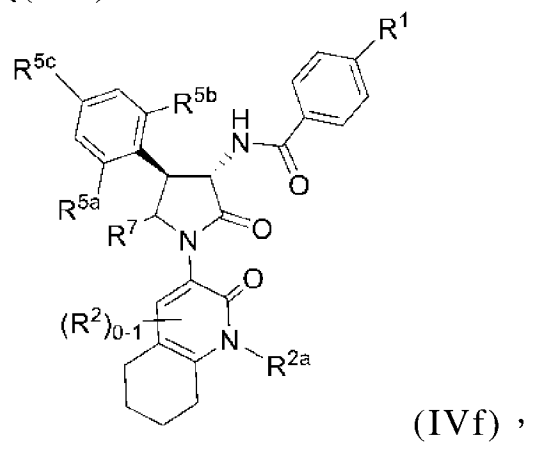
R^3 係氫，或經0至1個 $S(O)_2C_{1-3}$ 烷基取代之 C_{1-4} 烷基、 或 ；



R^{5a}係氫或F；
R^{5b}係氫或F；且
R^{5c}係Cl或-OCH₃。

【請求項10】

如請求項1之化合物或其醫藥上可接受之鹽、立體異構物或互變異構物，其中該化合物具有式(IVf)：

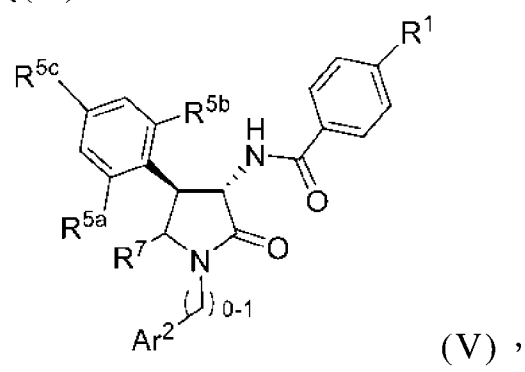


其中：

R¹係Cl、-CF₃、-OCH₃、-OCHF₂或-OCF₃；
R²係氰基、F、Cl、-CH₂OH、-CH₃、-CHF₂或-CF₃；
R^{2a}係 -CH₃、-CH₂CH₃、-CH₂CHF₂、-CH₂CH₂OCH₃、-CH₂CH(OH)CF₃、-CH₂CH(OH)CH₃、-CH₂CH₂OH、-CH₂CH(CH₃)OH 或 -CH₂CH₂CF₃；
R^{5a}係氫、F或Cl；
R^{5b}係氫、F或Cl；且
R^{5c}係Cl或-OCH₃。

【請求項11】

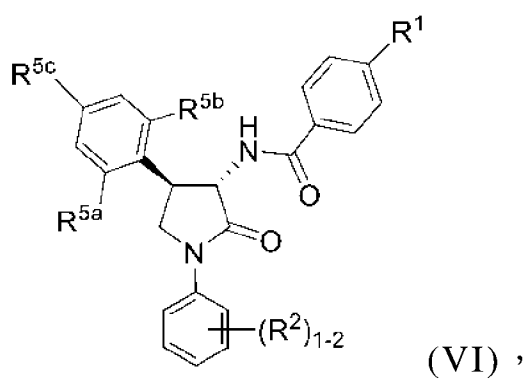
如請求項4之化合物或其醫藥上可接受之鹽、立體異構物或互變異構物，其中該化合物具有式(V)：



- 其中：
- Ar²係C₃₋₅環烷基；
 - R¹係Cl、-CF₃、-OCHF₂或-OCF₃；
 - R^{5a}係F或Cl；
 - R^{5b}係F或Cl；且
 - R^{5c}係-OCH₃。

【請求項12】

如請求項3之化合物或其醫藥上可接受之鹽、立體異構物或互變異構物，其中該化合物具有式(VI)：



- 其中：
- R¹係-CF₃、-OCHF₂或-OCF₃；
 - R²係氰基、F、Cl、-CH₂OH、-CHF₂、-CF₃、-OCH₃、-OCH(CH₃)₂

或(CH₃)₂(O)P- ；

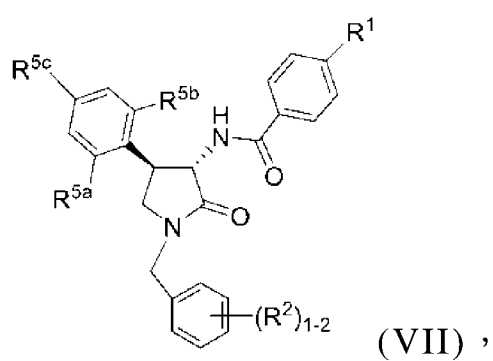
R^{5a}係F或Cl ；

R^{5b}係F或Cl ； 且

R^{5c}係-OCH₃ 。

【請求項13】

如請求項3之化合物或其醫藥上可接受之鹽、立體異構物或互變異構物，其中該化合物具有式(VII)：



其中：

R¹係-CF₃、-OCHF₂或-OCF₃ ；

R²係F、Cl或(CH₃)₂(O)P- ；

R^{5a}係F ；

R^{5b}係F ； 且

R^{5c}係-OCH₃ 。

【請求項14】

一種醫藥組合物，其包含一或多種如請求項1至13中任一項之化合物或其醫藥上可接受之鹽、立體異構物或互變異構物及醫藥上可接受之載劑或稀釋劑。

【請求項15】

一種如請求項1至13中任一項之化合物或其醫藥上可接受之鹽、立體

異構物或互變異構物之用途，其用於製造用於治療或預防以下疾病之藥劑：發炎性疾病、心臟疾病、慢性呼吸道疾病、癌症、敗血症、過敏症狀、HIV反轉錄病毒感染、循環病症、神經發炎、神經病症、疼痛、普里昂疾病(prion diseases)、類澱粉變性及免疫病症。

【請求項16】

如請求項15之用途，其中該心臟疾病係選自由以下組成之群：心絞痛、不穩定性心絞痛、心肌梗塞、心臟衰竭、急性冠狀動脈疾病、急性心臟衰竭、慢性心臟衰竭，及心臟醫源性損害。

【請求項17】

如請求項16之用途，其中該心臟衰竭係由以下所導致：高血壓、缺血性心臟病、非缺血性心臟病、暴露於心臟毒性化合物、心肌炎、川崎病(Kawasaki's disease)、I型及II型糖尿病、甲狀腺疾病、病毒感染、牙齦炎、藥物濫用、酒精濫用、心包炎、動脈粥樣硬化、血管疾病、肥厚性心肌病變、擴張性心肌病變、心肌梗塞、心房纖維化、左心室收縮功能障礙、左心室舒張功能障礙、冠狀動脈旁路手術、心律調節器植入手術、饑餓、飲食障礙、肌營養不良症，及遺傳缺陷。