



- (51) **International Patent Classification:**
C12N 15/11 (2006.01) *C12Q 1/68* (2006.01)
- (21) **International Application Number:**
PCT/US2014/017706
- (22) **International Filing Date:**
21 February 2014 (21.02.2014)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
61/767,490 21 February 2013 (21.02.2013) US
61/860,470 31 July 2013 (31.07.2013) US
61/894,733 23 October 2013 (23.10.2013) US
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(81) **Designated States** (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) **Designated States** (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

(54) **Title:** GENE SIGNATURES FOR LUNG CANCER PROGNOSIS AND THERAPY SELECTION

(57) **Abstract:** The invention provides for molecular classification of disease and, particularly, molecular markers for lung cancer prognosis and therapy selection and methods and systems of use thereof.



GENE SIGNATURES FOR LUNG CANCER PROGNOSIS AND THERAPY SELECTION

RELATED APPLICATIONS

[0001] This application claims the priority benefit of U.S. Provisional Application Serial No. 61/767,490 (filed on February 21, 2013), 61/860,470 (filed on July 31, 2013), and 61/894,733 (filed on October 23, 2013) all of which are hereby incorporated by reference in their entirety.

FIELD OF THE INVENTION

[0002] The invention generally relates to a molecular classification of disease and particularly to molecular markers for lung cancer prognosis and therapy selection and methods of use thereof.

BACKGROUND OF THE INVENTION

[0003] Cancer is a major public health problem, accounting for roughly 25% of all deaths in the United States. Though many treatments have been devised for various cancers, these treatments often vary in severity of side effects. It is useful for clinicians to know how aggressive a patient's cancer is in order to determine how aggressively to treat the cancer.

[0004] Early stage non small cell lung cancer (NSCLC) consists of the resectable stages IA, IB, IIA, IIB and IIIA. Stages are defined by tumor size and node involvement. Five year survival rates range from 70% in stage IA to 20% in stage IIIA. Multiple large scale adjuvant trials have found only a small benefit of adjuvant chemotherapy (4% improvement in survival rates) with most of the benefit centered in the higher stages. Current guidelines favor adjuvant treatment in stages II and III. In stage IA, however, treatment is counterindicated since the small benefit is often outweighed by the potential side effects. There are no recommendations for treatment of stage IB, although a fraction of IB patients is given adjuvant chemotherapy. Patients with stage IA or IB lung cancer are thus faced with a difficult decision of whether to undergo painful and expensive adjuvant

chemotherapy or run the risk the cancer will recur after surgery. Price & Slevin, *Difficult Decisions: Chemotherapy in Lung Cancer*, POSTGRAD. MED. J. (1989) 65:291-298. Given the limited overall benefit of chemotherapy, the frequent co-morbidities in NSCLC patients and the frequent serious side effects of therapy, there is a serious need for novel and improved tools for predicting response to particular therapy regimens.

SUMMARY OF THE INVENTION

[0005] The present invention is based in part on the surprising discovery that the expression of those genes whose expression closely tracks the cell cycle (“cell-cycle genes,” “CCGs,” or “CCP genes” as further defined below) is particularly useful in selecting appropriate therapy for and determining prognosis in lung cancer.

[0006] Accordingly, one aspect of the present invention provides a method for determining the prognosis and/or the likelihood of response to a particular treatment regimen in a patient having lung cancer, which comprises: determining in a sample from the patient the expression of a plurality of test genes comprising at least 6, 8 or 10 cell-cycle genes (e.g., genes in any of Tables 1-11 or Panels A-H, J, or K; “sub-panels” of Panel F in Tables 21 to 25), and correlating increased expression of said plurality of test genes to a poor prognosis and/or an increased likelihood of response to the particular treatment regimen (e.g., a treatment regimen comprising chemotherapy) or, optionally, (b) correlating no increased expression of said plurality of test genes to a good prognosis and/or no increased likelihood of response to the treatment regimen. In some embodiments the lung cancer is adenocarcinoma. In some embodiments the lung cancer is typical lung carcinoid. In some embodiments the lung cancer is atypical lung carcinoid.

[0007] In some embodiments, the plurality of test genes includes at least 8 cell-cycle genes, or at least 10, 15, 20, 25 or 30 cell-cycle genes (e.g., genes in any of Tables 1-11 or Panels A-H, J, or K; “sub-panels” of Panel F in Tables 21 to 25). In some embodiments, at least some proportion of the test genes (e.g., at least 10%, 15%, 20%, 25%, 30%, 40%, 50%, 60%, 70%, 80%, 85%, 90%, 95%, or 99%) are cell-cycle genes. In some embodiments, all of the test genes are cell-cycle genes.

[0008] In some embodiments, the step of determining the expression of the plurality of test genes in the tumor sample comprises measuring the amount of mRNA in the

tumor sample transcribed from each of from 6 to about 200 cell-cycle genes; and measuring the amount of mRNA of one or more housekeeping genes in the tumor sample.

[0009] In one embodiment, the method of determining the prognosis and/or the likelihood of response to a particular treatment regimen comprises (1) determining in a tumor sample from a patient having lung cancer the expression of a panel of genes in said tumor sample including at least 4 or at least 8 cell-cycle genes (e.g., genes in any of Tables 1-11 or Panels A-H, J, or K; “sub-panels” of Panel F in Tables 21 to 25); (2) providing a test value by (a) weighting the determined expression of each of a plurality of test genes selected from the panel of genes with a predefined coefficient, and (b) combining the weighted expression to provide the test value, wherein at least 50%, at least 75% or at least 85% of the plurality of test genes are cell-cycle genes; and (3)(a) correlating an increased level of overall expression of the plurality of test genes to a poor prognosis and/or an increased likelihood of response to the particular treatment regimen (e.g., a treatment regimen comprising chemotherapy), or (b) correlating no increase in the overall expression of the test genes to a good prognosis and/or no increased likelihood of response to the treatment regimen. In some embodiments the lung cancer is adenocarcinoma. In some embodiments the lung cancer is typical lung carcinoid. In some embodiments the lung cancer is atypical lung carcinoid.

[0010] In some embodiments, the methods of the invention further include a step of comparing the test value provided in step (2) above to one or more reference values, and correlating the test value to an increased likelihood of response to the particular treatment regimen. Optionally a test value greater than the reference value is correlated to an increased likelihood of response to treatment comprising chemotherapy. In some embodiments the test value is correlated to an increased likelihood of response to treatment (e.g., treatment comprising chemotherapy) if the test value exceeds the reference value by at least some amount (e.g., at least 0.5, 0.75, 0.85, 0.90, 0.95, 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10 or more fold or standard deviations).

[0011] In some embodiments, the method of determining the likelihood of response to a particular treatment regimen comprises (1) determining in a tumor sample from a patient having lung cancer the expression of a panel of genes in said tumor sample including at least 4 or at least 8 cell-cycle genes (e.g., genes in any of Tables 1-11 or Panels A-H, J, or K; “sub-panels” of Panel F in Tables 21 to 25); (2) providing a test value by (a) weighting the determined expression of each of a plurality of test genes selected from the panel of genes with

a predefined coefficient, and (b) combining the weighted expression to provide the test value, wherein the cell-cycle genes are weighted to contribute at least 50%, at least 75% or at least 85% of the test value; and (3)(a) correlating a test value that is greater than some reference to a poor prognosis and/or an increased likelihood of response to the particular treatment regimen (*e.g.*, a treatment regimen comprising chemotherapy), or (b) correlating a test value that is not greater than the reference to a good prognosis and/or no increased likelihood of response to the treatment.

[0012] In another aspect, the present invention provides a method of treating cancer in a patient identified as having lung cancer, comprising: (1) determining in a tumor sample from the patient the expression of a panel of genes in the tumor sample including at least 4 or at least 8 cell-cycle genes (*e.g.*, genes in any of Tables 1-11 or Panels A-H, J, or K; “sub-panels” of Panel F in Tables 21 to 25); (2) providing a test value by (a) weighting the determined expression of each of a plurality of test genes selected from said panel of genes with a predefined coefficient, and (b) combining the weighted expression to provide said test value, wherein the cell-cycle genes are weighted to contribute at least 50%, at least 75% or at least 85% of the test value; (3)(a) correlating an increased level of overall expression of the plurality of test genes to a poor prognosis and/or an increased likelihood of response to a particular treatment regimen (*e.g.*, a treatment regimen comprising chemotherapy), or (b) correlating no increase in the overall expression of the test genes to a good prognosis and/or no increased likelihood of response to the treatment; and (4) recommending, prescribing or administering a particular treatment regimen (*e.g.*, a treatment regimen comprising chemotherapy) based at least in part on the result in step (3). In some embodiments the lung cancer is adenocarcinoma. In some embodiments the lung cancer is typical lung carcinoid. In some embodiments the lung cancer is atypical lung carcinoid

[0013] The present invention further provides a diagnostic kit for determining the prognosis in a patient having lung cancer and/or predicting the likelihood of response to a particular treatment regimen (*e.g.*, a treatment regimen comprising chemotherapy) in a patient having lung cancer, comprising, in a compartmentalized container, a plurality of oligonucleotides hybridizing to at least 8 test genes, wherein less than 10%, 30% or less than 40% of all of the at least 8 test genes are non-cell-cycle genes; and one or more oligonucleotides hybridizing to at least one housekeeping gene. The oligonucleotides can be hybridizing probes for hybridization with the test genes under stringent conditions or primers suitable for PCR amplification of the test genes. In one embodiment, the kit consists essentially

of, in a compartmentalized container, a first plurality of PCR reaction mixtures for PCR amplification of from 5 or 10 to about 300 test genes, wherein at least 30% or 50%, at least 60% or at least 80% of such test genes are cell-cycle genes (e.g., genes in any of Tables 1-11 or Panels A-H, J, or K; “sub-panels” of Panel F in Tables 21 to 25), and wherein each reaction mixture comprises a PCR primer pair for PCR amplifying one of the test genes; and a second plurality of PCR reaction mixtures for PCR amplification of at least one control (e.g., housekeeping) gene. In some embodiments the kit comprises one or more computer software programs for calculating a test value representing the expression of the test genes (either the overall expression of all test genes or of some subset) and for comparing this test value to some reference value. In some embodiments such computer software is programmed to weight the test genes such that cell-cycle genes are weighted to contribute at least 50%, at least 75% or at least 85% of the test value. In some embodiments such computer software is programmed to communicate (e.g., display) that the patient has an increased likelihood of response to a treatment regimen comprising chemotherapy if the test value is greater than the reference value (e.g., by more than some predetermined amount).

[0014] The present invention also provides the use of (1) a plurality of oligonucleotides hybridizing to at least 4 or at least 8 cell-cycle genes (e.g., genes in any of Tables 1-11 or Panels A-H, J, or K; “sub-panels” of Panel F in Tables 21 to 25); and (2) one or more oligonucleotides hybridizing to at least one control (e.g., housekeeping) gene, for the manufacture of a diagnostic product for determining the expression of the test genes in a tumor sample from a patient having lung cancer, to determine prognosis in said patient and/or to predict the likelihood of responding to a treatment regimen comprising chemotherapy, wherein an increased level of the overall expression of the test genes indicates an increased likelihood, whereas no increase in the overall expression of the test genes indicates no increased likelihood. In some embodiments, the oligonucleotides are PCR primers suitable for PCR amplification of the test genes. In other embodiments, the oligonucleotides are probes hybridizing to the test genes under stringent conditions. In some embodiments, the plurality of oligonucleotides are probes for hybridization under stringent conditions to, or are suitable for PCR amplification of, from 4 to about 300 test genes, at least 50%, 70% or 80% or 90% of the test genes being cell-cycle genes. In some other embodiments, the plurality of oligonucleotides are hybridization probes for, or are suitable for PCR amplification of, from 20 to about 300 test genes, at least 30%, 40%, 50%, 70% or 80% or 90% of the test genes being cell-cycle genes.

[0015] The present invention further provides a system for determining the prognosis in a patient having lung cancer and/or the likelihood of response to a particular treatment regimen in a patient having lung cancer, comprising: (1) a sample analyzer for determining the expression levels of a panel of genes in a tumor sample including at least 4 cell-cycle genes (e.g., genes in any of Tables 1-11 or Panels A-H, J, or K; “sub-panels” of Panel F in Tables 21 to 25), wherein the sample analyzer contains the tumor sample, mRNA molecules expressed from the panel of genes and extracted from the sample, or cDNA molecules from said mRNA molecules; (2) a first computer program for (a) receiving gene expression data on at least 4 test genes selected from the panel of genes, (b) weighting the determined expression of each of the test genes with a predefined coefficient, and (c) combining the weighted expression to provide a test value, wherein at least 50%, at least at least 75% of at least 4 test genes are cell-cycle genes; and (3) a second computer program for comparing the test value to one or more reference values each associated with a predetermined prognosis or likelihood of response to the particular treatment.

[0016] In some embodiments the invention provides a system for determining the prognosis in a patient having lung cancer and/or the likelihood of response to a particular treatment regimen in a patient having lung cancer, comprising: (1) a sample analyzer for determining the expression levels of a panel of genes in a tumor sample including at least 4 cell-cycle genes (e.g., genes in any of Tables 1-11 or Panels A-H, J, or K; “sub-panels” of Panel F in Tables 21 to 25), wherein the sample analyzer contains the tumor sample, mRNA molecules expressed from the panel of genes and extracted from the sample, or cDNA molecules from said mRNA molecules; (2) a first computer program for (a) receiving gene expression data on at least 4 test genes selected from the panel of genes, (b) weighting the determined expression of each of the test genes with a predefined coefficient, and (c) combining the weighted expression to provide a test value, wherein the cell-cycle genes are weighted to contribute at least 50%, at least 75% or at least 85% of the test value; and (3) a second computer program for comparing the test value to one or more reference values each associated with a predetermined prognosis or likelihood of response to the particular treatment regimen (e.g., a treatment regimen comprising chemotherapy). In some embodiments, the system further comprises a display module displaying the comparison between the test value and the one or more reference values, or displaying a result of the comparing step.

[0017] Unless otherwise defined, all technical and scientific terms used herein have the same meaning as commonly understood by one of ordinary skill in the art to which

this invention pertains. Although methods and materials similar or equivalent to those described herein can be used in the practice or testing of the present invention, suitable methods and materials are described below. In case of conflict, the present specification, including definitions, will control. In addition, the materials, methods, and examples are illustrative only and not intended to be limiting.

[0018] Other features and advantages of the invention will be apparent from the following Detailed Description, and from the Claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0019] Figure 1 is a Kaplan Meier plot of clinical sample set 1, stage I and II, using CCP score quartiles and disease survival as outcome measure.

[0020] Figure 2 is Kaplan Meier plot of clinical sample set 1 stage IB only, using the CCP mean to separate a high CCP from a low CCP group and disease survival as outcome measure.

[0021] Figure 3 shows the distribution of CCP scores in two independent stage IB cohorts.

[0022] Figure 4 is a Kaplan Meier survival analysis of CCP score in the combined stage IB samples of set 1 and set 2.

[0023] Figure 5 is a Kaplan Meier survival analysis of CCP and treatment in combined stage IB samples.

[0024] Figure 6 is an illustration of an example of a system useful in certain aspects and embodiments of the invention.

[0025] Figure 7 is a flowchart illustrating an example of a computer-implemented method of the invention.

[0026] Figure 8 is an illustration of the predictive power for CCG panels of different sizes.

[0027] Figure 9 shows the distribution of CCP scores in the Combined Cohort of Example 2.

[0028] Figure 10 is a Kaplan Meier survival analysis of CCP score in the Combined Cohort of Example 2.

- [0029] Figure 11 shows how CCP score predicts treatment benefit in Example 3.
- [0030] Figure 12 shows the consistency of hazard ratios for CCP score across cohorts.
- [0031] Figure 13 shows the consistency of hazard ratios for pathological stage across cohorts.
- [0032] Figure 14 shows predicted 5-year disease mortality risk as a function of Prognostic Score (as shown in the training study in Example 4).
- [0033] Figure 15 shows 5-year disease mortality risk as predicted by Prognostic Score versus as predicted by pathological stage alone (as shown in the training study in Example 4).
- [0034] Figure 16 shows predicted 5-year disease mortality risk as a function of Prognostic Score (as shown in the validation study in Example 4), with a cut-off value of PS=27 as a divider in one embodiment between low risk and high risk patients.
- [0035] Figure 17 is a Kaplan Meier survival analysis of Prognostic Score (as shown in the validation study in Example 4).
- [0036] Figure 18 shows 5-year disease mortality risk as predicted by Prognostic Score versus as predicted by pathological stage alone (as shown in the validation study in Example 4).

DETAILED DESCRIPTION OF THE INVENTION

[0037] The present invention is based in part on the discovery that genes whose expression closely tracks the cell cycle (“cell-cycle genes” or “CCGs”) are particularly powerful genes for classifying lung cancer, including determining prognosis and/or the likelihood a particular patient will respond to a particular treatment regimen (*e.g.*, a regimen comprising chemotherapy).

[0038] “Cell-cycle gene” and “CCG” herein refer to a gene whose expression level closely tracks the progression of the cell through the cell-cycle. *See, e.g.*, Whitfield *et al.*, MOL. BIOL. CELL (2002) 13:1977-2000. The term “cell-cycle progression” or “CCP” will also be used in this application and will generally be interchangeable with CCG (*i.e.*, a CCP gene is a CCG; a CCP score is a CCG score). More specifically, CCGs show periodic increases and

decreases in expression that coincide with certain phases of the cell cycle—*e.g.*, *STK15* and *PLK* show peak expression at G2/M. *Id.* Often CCGs have clear, recognized cell-cycle related function —*e.g.*, in DNA synthesis or repair, in chromosome condensation, in cell-division, etc. However, some CCGs have expression levels that track the cell-cycle without having an obvious, direct role in the cell-cycle—*e.g.*, *UBE2S* encodes a ubiquitin-conjugating enzyme, yet its expression closely tracks the cell-cycle. Thus a CCG according to the present invention need not have a recognized role in the cell-cycle. Exemplary CCGs are listed in Tables 1, 2, 3, 5, 6, 7, 8 & 9. A fuller discussion of CCGs, including an extensive (though not exhaustive) list of CCGs, can be found in International Application No. PCT /US2010/020397 (pub. no. WO/2010/080933) (*see, e.g.*, Table 1 in WO/2010/080933). International Application No. PCT/US2010/020397 (pub. no. WO/2010/080933 (see also corresponding U.S. Application No. 13/177,887)) and International Application No. PCT/ US2011/043228 (pub no. WO/2012/006447 (see also related U.S. Application No. 13/178,380)) and their contents are hereby incorporated by reference in their entirety.

[0039] Whether a particular gene is a CCG may be determined by any technique known in the art, including those taught in Whitfield *et al.*, MOL. BIOL. CELL (2002) 13:1977-2000; Whitfield *et al.*, MOL. CELL. BIOL. (2000) 20:4188-4198; WO/2010/080933 (§ [0039]). All of the CCGs in Table 1 below form a panel of CCGs (“Panel A”) useful in the invention. As will be shown detail throughout this document, individual CCGs (*e.g.*, CCGs in Table 1) and subsets of these genes can also be used in the invention.

Table 1

Gene Symbol	Entrez GeneID	ABI Assay ID	RefSeq Accession Nos.
<i>APOBEC3B</i> *	9582	Hs00358981_m1	NM_004900.3
<i>ASF1B</i> *	55723	Hs00216780_m1	NM_018154.2
<i>ASPM</i> *	259266	Hs00411505_m1	NM_018136.4
<i>ATAD2</i> *	29028	Hs00204205_m1	NM_014109.3
<i>BIRC5</i> *	332	Hs00153353_m1; Hs03043576_m1	NM_001012271.1; NM_001012270.1; NM_001168.2
<i>BLM</i> *	641	Hs00172060_m1	NM_000057.2
<i>BUB1</i>	699	Hs00177821_m1	NM_004336.3
<i>BUB1B</i> *	701	Hs01084828_m1	NM_001211.5
<i>C12orf48</i> *	55010	Hs00215575_m1	NM_017915.2
<i>C18orf24</i> *	220134	Hs00536843_m1	NM_145060.3; NM_001039535.2

<i>C1orf135*</i>	79000	Hs00225211_m1	NM_024037.1
<i>C21orf45*</i>	54069	Hs00219050_m1	NM_018944.2
<i>CCDC99*</i>	54908	Hs00215019_m1	NM_017785.4
<i>CCNA2*</i>	890	Hs00153138_m1	NM_001237.3
<i>CCNB1*</i>	891	Hs00259126_m1	NM_031966.2
<i>CCNB2*</i>	9133	Hs00270424_m1	NM_004701.2
<i>CCNE1*</i>	898	Hs01026536_m1	NM_001238.1; NM_057182.1
<i>CDC2*</i>	983	Hs00364293_m1	NM_033379.3; NM_001130829.1; NM_001786.3
<i>CDC20*</i>	991	Hs03004916_g1	NM_001255.2
<i>CDC45L*</i>	8318	Hs00185895_m1	NM_003504.3
<i>CDC6*</i>	990	Hs00154374_m1	NM_001254.3
<i>CDC43*</i>	83461	Hs00229905_m1	NM_031299.4
<i>CDC48*</i>	55143	Hs00983655_m1	NM_018101.2
<i>CDKN3*</i>	1033	Hs00193192_m1	NM_001130851.1; NM_005192.3
<i>CDT1*</i>	81620	Hs00368864_m1	NM_030928.3
<i>CENPA</i>	1058	Hs00156455_m1	NM_001042426.1; NM_001809.3
<i>CENPE*</i>	1062	Hs00156507_m1	NM_001813.2
<i>CENPF*</i>	1063	Hs00193201_m1	NM_016343.3
<i>CENPI*</i>	2491	Hs00198791_m1	NM_006733.2
<i>CENPM*</i>	79019	Hs00608780_m1	NM_024053.3
<i>CENPN*</i>	55839	Hs00218401_m1	NM_018455.4; NM_001100624.1; NM_001100625.1
<i>CEP55*</i>	55165	Hs00216688_m1	NM_018131.4; NM_001127182.1
<i>CHEK1*</i>	1111	Hs00967506_m1	NM_001114121.1; NM_001114122.1; NM_001274.4
<i>CKAP2*</i>	26586	Hs00217068_m1	NM_018204.3; NM_001098525.1
<i>CKS1B*</i>	1163	Hs01029137_g1	NM_001826.2

<i>CKS2*</i>	1164	Hs01048812_g1	NM_001827.1
<i>CTPS*</i>	1503	Hs01041851_m1	NM_001905.2
<i>CTSL2*</i>	1515	Hs00952036_m1	NM_001333.2
<i>DBF4*</i>	10926	Hs00272696_m1	NM_006716.3
<i>DDX39*</i>	10212	Hs00271794_m1	NM_005804.2
<i>DLGAP5/ DLG7*</i>	9787	Hs00207323_m1	NM_014750.3
<i>DONSON*</i>	29980	Hs00375083_m1	NM_017613.2
<i>DSN1*</i>	79980	Hs00227760_m1	NM_024918.2
<i>DTL*</i>	51514	Hs00978565_m1	NM_016448.2
<i>E2F8*</i>	79733	Hs00226635_m1	NM_024680.2
<i>ECT2*</i>	1894	Hs00216455_m1	NM_018098.4
<i>ESPL1*</i>	9700	Hs00202246_m1	NM_012291.4
<i>EXO1*</i>	9156	Hs00243513_m1	NM_130398.2; NM_003686.3; NM_006027.3
<i>EZH2*</i>	2146	Hs00544830_m1	NM_152998.1; NM_004456.3
<i>FANCI*</i>	55215	Hs00289551_m1	NM_018193.2; NM_001113378.1
<i>FBXO5*</i>	26271	Hs03070834_m1	NM_001142522.1; NM_012177.3
<i>FOXMI*</i>	2305	Hs01073586_m1	NM_202003.1; NM_202002.1; NM_021953.2
<i>GINSI*</i>	9837	Hs00221421_m1	NM_021067.3
<i>GMPS*</i>	8833	Hs00269500_m1	NM_003875.2
<i>GPSM2*</i>	29899	Hs00203271_m1	NM_013296.4
<i>GTSE1*</i>	51512	Hs00212681_m1	NM_016426.5
<i>H2AFX*</i>	3014	Hs00266783_s1	NM_002105.2
<i>HMMR*</i>	3161	Hs00234864_m1	NM_001142556.1; NM_001142557.1; NM_012484.2; NM_012485.2
<i>HNI*</i>	51155	Hs00602957_m1	NM_001002033.1; NM_001002032.1; NM_016185.2
<i>KIAA0101*</i>	9768	Hs00207134_m1	NM_014736.4

<i>KIF11*</i>	3832	Hs00189698_m1	NM_004523.3
<i>KIF15*</i>	56992	Hs00173349_m1	NM_020242.2
<i>KIF18A*</i>	81930	Hs01015428_m1	NM_031217.3
<i>KIF20A*</i>	10112	Hs00993573_m1	NM_005733.2
<i>KIF20B/ MPHOSPH1*</i>	9585	Hs01027505_m1	NM_016195.2
<i>KIF23*</i>	9493	Hs00370852_m1	NM_138555.1; NM_004856.4
<i>KIF2C*</i>	11004	Hs00199232_m1	NM_006845.3
<i>KIF4A*</i>	24137	Hs01020169_m1	NM_012310.3
<i>KIFC1*</i>	3833	Hs00954801_m1	NM_002263.3
<i>KPNA2</i>	3838	Hs00818252_g1	NM_002266.2
<i>LMNB2*</i>	84823	Hs00383326_m1	NM_032737.2
<i>MAD2L1</i>	4085	Hs01554513_g1	NM_002358.3
<i>MCAM*</i>	4162	Hs00174838_m1	NM_006500.2
<i>MCM10*</i>	55388	Hs00960349_m1	NM_018518.3; NM_182751.1
<i>MCM2*</i>	4171	Hs00170472_m1	NM_004526.2
<i>MCM4*</i>	4173	Hs00381539_m1	NM_005914.2; NM_182746.1
<i>MCM6*</i>	4175	Hs00195504_m1	NM_005915.4
<i>MCM7*</i>	4176	Hs01097212_m1	NM_005916.3; NM_182776.1
<i>MELK</i>	9833	Hs00207681_m1	NM_014791.2
<i>MKI67*</i>	4288	Hs00606991_m1	NM_002417.3
<i>MYBL2*</i>	4605	Hs00231158_m1	NM_002466.2
<i>NCAPD2*</i>	9918	Hs00274505_m1	NM_014865.3
<i>NCAPG*</i>	64151	Hs00254617_m1	NM_022346.3
<i>NCAPG2*</i>	54892	Hs00375141_m1	NM_017760.5
<i>NCAPH*</i>	23397	Hs01010752_m1	NM_015341.3
<i>NDC80*</i>	10403	Hs00196101_m1	NM_006101.2
<i>NEK2*</i>	4751	Hs00601227_mH	NM_002497.2
<i>NUSAP1*</i>	51203	Hs01006195_m1	NM_018454.6; NM_001129897.1; NM_016359.3
<i>OIP5*</i>	11339	Hs00299079_m1	NM_007280.1
<i>ORC6L*</i>	23594	Hs00204876_m1	NM_014321.2
<i>PAICS*</i>	10606	Hs00272390_m1	NM_001079524.1;

			NM_001079525.1; NM_006452.3
<i>PBK*</i>	55872	Hs00218544_m1	NM_018492.2
<i>PCNA*</i>	5111	Hs00427214_g1	NM_182649.1; NM_002592.2
<i>PDSSI*</i>	23590	Hs00372008_m1	NM_014317.3
<i>PLK1*</i>	5347	Hs00153444_m1	NM_005030.3
<i>PLK4*</i>	10733	Hs00179514_m1	NM_014264.3
<i>POLE2*</i>	5427	Hs00160277_m1	NM_002692.2
<i>PRC1*</i>	9055	Hs00187740_m1	NM_199413.1; NM_199414.1; NM_003981.2
<i>PSMA7*</i>	5688	Hs00895424_m1	NM_002792.2
<i>PSRC1*</i>	84722	Hs00364137_m1	NM_032636.6; NM_001005290.2; NM_001032290.1; NM_001032291.1
<i>PTTG1*</i>	9232	Hs00851754_u1	NM_004219.2
<i>RACGAP1*</i>	29127	Hs00374747_m1	NM_013277.3
<i>RAD51*</i>	5888	Hs00153418_m1	NM_133487.2; NM_002875.3
<i>RAD51AP1*</i>	10635	Hs01548891_m1	NM_001130862.1; NM_006479.4
<i>RAD54B*</i>	25788	Hs00610716_m1	NM_012415.2
<i>RAD54L*</i>	8438	Hs00269177_m1	NM_001142548.1; NM_003579.3
<i>RFC2*</i>	5982	Hs00945948_m1	NM_181471.1; NM_002914.3
<i>RFC4*</i>	5984	Hs00427469_m1	NM_181573.2; NM_002916.3
<i>RFC5*</i>	5985	Hs00738859_m1	NM_181578.2; NM_001130112.1; NM_001130113.1; NM_007370.4

<i>RNASEH2A*</i>	10535	Hs00197370_m1	NM_006397.2
<i>RRM2*</i>	6241	Hs00357247_g1	NM_001034.2
<i>SHCBP1*</i>	79801	Hs00226915_m1	NM_024745.4
<i>SMC2*</i>	10592	Hs00197593_m1	NM_001042550.1; NM_001042551.1; NM_006444.2
<i>SPAG5*</i>	10615	Hs00197708_m1	NM_006461.3
<i>SPC25*</i>	57405	Hs00221100_m1	NM_020675.3
<i>STIL*</i>	6491	Hs00161700_m1	NM_001048166.1; NM_003035.2
<i>STMN1*</i>	3925	Hs00606370_m1; Hs01033129_m1	NM_005563.3; NM_203399.1
<i>TACC3*</i>	10460	Hs00170751_m1	NM_006342.1
<i>TIMELESS*</i>	8914	Hs01086966_m1	NM_003920.2
<i>TK1*</i>	7083	Hs01062125_m1	NM_003258.4
<i>TOP2A*</i>	7153	Hs00172214_m1	NM_001067.2
<i>TPX2*</i>	22974	Hs00201616_m1	NM_012112.4
<i>TRIP13*</i>	9319	Hs01020073_m1	NM_004237.2
<i>TTK*</i>	7272	Hs00177412_m1	NM_003318.3
<i>TUBA1C*</i>	84790	Hs00733770_m1	NM_032704.3
<i>TYMS*</i>	7298	Hs00426591_m1	NM_001071.2
<i>UBE2C</i>	11065	Hs00964100_g1	NM_181799.1; NM_181800.1; NM_181801.1; NM_181802.1; NM_181803.1; NM_007019.2
<i>UBE2S</i>	27338	Hs00819350_m1	NM_014501.2
<i>VRK1*</i>	7443	Hs00177470_m1	NM_003384.2
<i>ZWILCH*</i>	55055	Hs01555249_m1	NM_017975.3; NR_003105.1
<i>ZWINT*</i>	11130	Hs00199952_m1	NM_032997.2; NM_001005413.1; NM_007057.3

* 124-gene subset of CCGs useful in the invention (“Panel B”). ABI Assay ID means the catalogue ID number for the gene expression assay commercially available from Applied Biosystems Inc. (Foster City, CA) for the particular gene.

[0040] As shown in Examples 1 & 2 below, it has been surprisingly discovered that patients whose tumors show increased expression of CCGs (e.g., a CCP score or test value reflecting higher CCP gene expression) have poorer prognosis, yet respond better to treatment comprising chemotherapy, than patients whose tumors do not show such an increase. Accordingly, one aspect of the present invention provides a method for determining the prognosis in a patient having lung cancer and/or the likelihood of response to a particular treatment regimen in a patient having lung cancer, which comprises: determining in a tumor sample from the patient the expression of a plurality of test genes comprising at least 2, 3, 4, 5, 6, 7 or at least 8, 9, 10 or 12 cell-cycle genes (e.g., genes in any of Tables 1-11 or Panels A-H, J, or K; “sub-panels” of Panel F in Tables 21 to 25), and correlating increased expression of said plurality of test genes to a poor prognosis and/or an increased likelihood of response to the particular treatment regimen (e.g., a treatment regimen comprising chemotherapy).

[0041] The embodiments of the invention described herein involve lung cancer. Lung cancer as used herein includes at least adenocarcinoma, atypical lung carcinoids, and typical lung carcinoids.

[0042] Several embodiments of the invention described herein involve a step of correlating high CCP gene expression according to the present invention (e.g., high expression of a panel of CCP genes as described in various embodiments throughout this application; a test value derived from or reflecting high expression of such a panel; etc.) to a particular clinical feature (e.g., a poor prognosis; an increased likelihood of lung cancer recurrence; an increased likelihood of response to chemotherapy; etc.) if the CCP gene expression is greater than some reference (or optionally to another feature, e.g., good prognosis, if the expression is less than some reference). Throughout this document, wherever such an embodiment is described, a further, related embodiment of the invention may involve, in addition to or instead of a correlating step, one or both of the following steps: (a) concluding that the patient has (or classifying the patient as having) the clinical feature based at least in part on high CCP expression (or a test value derived from or reflecting such); or (b) communicating that the patient has the clinical feature based at least in part on high CCP expression (or a test value derived from or reflecting such).

[0043] By way of illustration, but not limitation, one embodiment described in this document is a method for determining in a patient the prognosis of lung cancer or the likelihood of such a patient to respond to chemotherapy, comprising: (1) determining the expression of a plurality of test genes comprising at least 2, 3, 4, 5, 6, 7, 8, 9, 10 or 15 or more cell-cycle genes (e.g., CCGs in Panel F; in any of Panels H, I, J, L, M, N & O; or in any sub-panel of Panel F in any of Tables 21 through 25; etc.), and (2) correlating high expression of said plurality of test genes to poor prognosis of the lung cancer in the patient or an increased likelihood of response to chemotherapy. According to the preceding paragraph, this description of this embodiment is understood to include a description of two further, related embodiments, *i.e.*, a method for determining in a patient the prognosis of lung cancer or the likelihood of such a patient to respond to chemotherapy, comprising: (1) determining the expression of a plurality of test genes comprising at least 2, 3, 4, 5, 6, 7, 8, 9, 10 or 15 or more cell-cycle genes (e.g., CCGs in Panel F; in any of Panels H, I, J, L, M, N & O; or in any sub-panel of Panel F in any of Tables 21 through 25; etc.), and (2)(a) concluding that said patient has a poor prognosis of the lung cancer in the patient or an increased likelihood of response to chemotherapy based at least in part on high expression of said plurality of test genes; or (2)(b) communicating that said patient has a poor prognosis of the lung cancer in the patient or an increased likelihood of response to chemotherapy based at least in part on high expression of said plurality of test genes.

[0044] In each embodiment described in this document involving correlating a particular assay or analysis output (e.g., high CCG expression, test value incorporating CCG expression greater than some reference value, etc.) to some likelihood (e.g., increased, not increased, decreased, etc.) of some clinical event or outcome (e.g., recurrence, progression, cancer-specific death, etc.), such correlating may comprise assigning a risk or likelihood of the clinical event or outcome occurring based at least in part on the particular assay or analysis output. In some embodiments, such risk is a percentage probability of the event or outcome occurring. In some embodiments, the patient is assigned to a risk group (e.g., low risk, intermediate risk, high risk, etc.). In some embodiments “low risk” is any percentage probability below 5%, 10%, 15%, 20%, 25%, 30%, 35%, 40%, 45%, or 50%. In some embodiments “intermediate risk” is any percentage probability above 5%, 10%, 15%, 20%, 25%, 30%, 35%, 40%, 45%, or 50% and below 15%, 20%, 25%, 30%, 35%, 40%, 45%, 50%, 55%, 60%, 65%, 70%, or 75%. In some embodiments “high risk” is any percentage probability

above 25%, 30%, 35%, 40%, 45%, 50%, 55%, 60%, 65%, 70%, 75%, 80%, 85%, 90%, 95%, or 99%.

[0045] As used herein, “communicating” a particular piece of information means to make such information known to another person or transfer such information to a thing (e.g., a computer). In some methods of the invention, a patient’s prognosis or risk of recurrence is communicated. In some embodiments, the information used to arrive at such a prognosis or risk prediction (e.g., expression levels of a panel of biomarkers comprising a plurality of CCGs, clinical or pathologic factors, etc.) is communicated. This communication may be auditory (e.g., verbal), visual (e.g., written), electronic (e.g., data transferred from one computer system to another), etc. In some embodiments, communicating a cancer classification comprises generating a report that communicates the cancer classification. In some embodiments the report is a paper report, an auditory report, or an electronic record. In some embodiments the report is displayed and/or stored on a computing device (e.g., handheld device, desktop computer, smart device, website, etc.). In some embodiments the cancer classification is communicated to a physician (e.g., a report communicating the classification is provided to the physician). In some embodiments the cancer classification is communicated to a patient (e.g., a report communicating the classification is provided to the patient). Communicating a cancer classification can also be accomplished by transferring information (e.g., data) embodying the classification to a server computer and allowing an intermediary or end-user to access such information (e.g., by viewing the information as displayed from the server, by downloading the information in the form of one or more files transferred from the server to the intermediary or end-user’s device, etc.).

[0046] Wherever an embodiment of the invention comprises concluding some fact (e.g., a patient’s prognosis or a patient’s likelihood of recurrence), this may include a computer program concluding such fact, typically after performing some algorithm that incorporates information on the status of CCGs in a patient sample (e.g., as shown in Figure 7).

[0047] In some embodiments, determining the expression of a plurality of genes comprises receiving a report communicating such expression. In some embodiments this report communicates such expression in a qualitative manner (e.g., “high” or “increased”). In some embodiments this report communicates such expression indirectly by communicating a score (e.g., prognosis score, recurrence score, etc.) that incorporates such expression.

[0048] In some embodiments, the method includes (1) obtaining a sample from a patient having lung cancer; (2) determining the expression of a panel of genes in the tumor sample including at least 2, 4, 5, 6, 7 or at least 8, 9, 10 or 12 cell-cycle genes (e.g., genes in any of Tables 1-11 or Panels A-H, J, or K; “sub-panels” of Panel F in Tables 21 to 25); (3) providing a test value by (a) weighting the determined expression of each of a plurality of test genes selected from the panel of genes with a predefined coefficient, and (b) combining the weighted expression to provide said test value, wherein at least 20%, at least 50%, at least 75% or at least 90% of said plurality of test genes are cell-cycle genes (e.g., genes in any of Tables 1-11 or Panels A-H, J, or K; “sub-panels” of Panel F in Tables 21 to 25); and (4)(a) correlating an increased level of expression of the plurality of test genes to a poor prognosis and/or an increased likelihood of response to the particular treatment regimen (e.g., a treatment regimen comprising chemotherapy) or (b) correlating no increase in the overall expression of the test genes to a good prognosis and/or no increased likelihood of response to the treatment. In some embodiments, instead of (optionally in addition to) the correlating step(s), the method comprises (4)(a) concluding that the patient has a poor prognosis and/or an increased likelihood of response to the particular treatment regimen based at least in part on increased expression of said plurality of test genes or (b) concluding that the patient has a good prognosis and/or no increased likelihood of response to the particular treatment regimen based at least in part on no increased expression of said plurality of test genes; and/or (4)(a) communicating that the patient has a poor prognosis and/or an increased likelihood of response to the particular treatment regimen based at least in part on increased expression of said plurality of test genes or (b) communicating that the patient has a good prognosis and/or no increased likelihood of response to the particular treatment regimen based at least in part on no increased expression of said plurality of test genes. In some embodiments the test genes are weighted such that the cell-cycle genes are weighted to contribute at least 50%, at least 55%, at least 60%, at least 65%, at least 75%, at least 80%, at least 85%, at least 90%, at least 95%, at least 99% or 100% of the test value. In some embodiments 20%, 25%, 30%, 35%, 40%, 45%, 50%, 55%, 60%, 65%, 75%, 80%, 85%, 90%, 95%, or at least 99% or 100% of the plurality of test genes are cell-cycle genes. Unless otherwise indicated, “obtaining a sample” herein means “providing or obtaining.”

[0049] Accordingly, in some embodiments the method comprises: (1) obtaining a tumor sample from a patient identified as having lung cancer; (2) determining the expression of a panel of genes in the tumor sample including at least 2, 4, 6, 8 or 10 cell-cycle genes (e.g.,

genes in any of Tables 1-11 or Panels A-H, J, or K; “sub-panels” of Panel F in Tables 21 to 25); and (3) providing a test value by (a) weighting the determined expression of each of a plurality of test genes selected from said panel of genes with a predefined coefficient, and (b) combining the weighted expression to provide said test value, wherein the cell-cycle genes are weighted to contribute at least 20%, 50%, at least 75% or at least 90% of the test value; and (4)(a) correlating an increased level of expression of the plurality of test genes to a poor prognosis and/or an increased likelihood of response to the particular treatment regimen (*e.g.*, a treatment regimen comprising chemotherapy) or (b) correlating no increased level of expression of the plurality of test genes to a good prognosis and/or a no increased likelihood of response to the particular treatment. In some embodiments, instead of (optionally in addition to) the correlating step(s), the method comprises (4)(a) concluding that the patient has a poor prognosis and/or an increased likelihood of response to the particular treatment regimen based at least in part on increased expression of said plurality of test genes or (b) concluding that the patient has a good prognosis and/or no increased likelihood of response to the particular treatment regimen based at least in part on no increased expression of said plurality of test genes; and/or (4)(a) communicating that the patient has a poor prognosis and/or an increased likelihood of response to the particular treatment regimen based at least in part on increased expression of said plurality of test genes or (b) communicating that the patient has a good prognosis and/or no increased likelihood of response to the particular treatment regimen based at least in part on no increased expression of said plurality of test genes.

[0050] In each embodiment described herein involving CCP gene expression levels, the present invention encompasses a further, related embodiment involving a test value or score (*e.g.*, CCP score, etc.) derived from, incorporating, and/or, at least to some degree, reflecting such expression levels. In other words, the bare CCP gene expressions data or levels need not be used in the various methods, systems, etc. of the invention; a test value or score derived from such numbers or lengths may be used. Typically, such test value will be compared to a reference value (as described at length in this document) and the method will end by correlating a high test value (or a test value derived from, incorporating, and/or, at least to some degree, reflecting high CCP gene expression) to a poor prognosis. The invention encompasses, *mutatis mutandis*, corresponding embodiments where the test value or score is used to determine the patient’s prognosis, the patient’s likelihood of response to a particular treatment regimen, the patient’s or patient’s sample’s likelihood of having a breast cancer recurrence, etc.

[0051] The invention generally comprises determining the status of a panel of genes comprising at least two CCGs, in tissue or cell sample, particularly a tumor sample, from a patient. As used herein, “determining the status” of a gene (or panel of genes) refers to determining the presence, absence, or extent/level of some physical, chemical, or genetic characteristic of the gene or its expression product(s). Such characteristics include, but are not limited to, expression levels, activity levels, mutations, copy number, methylation status, etc.

[0052] In the context of CCGs as used to determine likelihood of response to a particular treatment regimen (*e.g.*, a treatment regimen comprising chemotherapy), particularly useful characteristics include expression levels (*e.g.*, mRNA, cDNA or protein levels) and activity levels. Characteristics may be assayed directly (*e.g.*, by assaying a CCG’s expression level) or determined indirectly (*e.g.*, assaying the level of a gene or genes whose expression level is correlated to the expression level of the CCG).

[0053] “Abnormal status” means a marker’s status in a particular sample differs from the status generally found in average samples (*e.g.*, healthy samples, average diseased samples). Examples include mutated, elevated, decreased, present, absent, etc. An “elevated status” means that one or more of the above characteristics (*e.g.*, expression or mRNA level) is higher than normal levels. Generally this means an increase in the characteristic (*e.g.*, expression or mRNA level) as compared to an index value as discussed below. Conversely a “low status” means that one or more of the above characteristics (*e.g.*, gene expression or mRNA level) is lower than normal levels. Generally this means a decrease in the characteristic (*e.g.*, expression) as compared to an index value as discussed below. In this context, a “negative status” generally means the characteristic is absent or undetectable or, in the case of sequence analysis, there is a deleterious sequence variant (including full or partial gene deletion).

[0054] Gene expression can be determined either at the RNA level (*i.e.*, mRNA or noncoding RNA (ncRNA)) (*e.g.*, miRNA, tRNA, rRNA, snoRNA, siRNA and piRNA) or at the protein level. Measuring gene expression at the mRNA level includes measuring levels of cDNA corresponding to mRNA. Levels of proteins in a tumor sample can be determined by any known technique in the art, *e.g.*, HPLC, mass spectrometry, or using antibodies specific to selected proteins (*e.g.*, IHC, ELISA, etc.).

[0055] In some embodiments, the amount of RNA transcribed from the panel of genes including test genes is measured in the tumor sample. In addition, the amount of RNA of

one or more housekeeping genes in the tumor sample is also measured, and used to normalize or calibrate the expression of the test genes. The terms “normalizing genes” and “housekeeping genes” are defined herein below.

[0056] In any embodiment of the invention involving a “plurality of test genes,” the plurality of test genes may include at least 2, 3 or 4 cell-cycle genes, which constitute at least 50%, 75% or 80% of the plurality of test genes, and preferably 100% of the plurality of test genes. In other such embodiments, the plurality of test genes includes at least 5, 6, 7, or at least 8 cell-cycle genes, which constitute at least 20%, 25%, 30%, 40%, 50%, 60%, 70%, 75%, 80% or 90% of the plurality of test genes, and preferably 100% of the plurality of test genes. As will be clear from the context of this document, a panel of genes is a plurality of genes. In some embodiments these genes are assayed together in one or more samples from a patient.

[0057] In some embodiments, the plurality of test genes includes at least 8, 10, 12, 15, 20, 25 or 30 cell-cycle genes, which constitute at least 20%, 25%, 30%, 40%, 50%, 60%, 70%, 75%, 80% or 90% of the plurality of test genes, and preferably 100% of the plurality of test genes.

[0058] As will be apparent to a skilled artisan apprised of the present invention and the disclosure herein, “tumor sample” means any biological sample containing one or more tumor cells, or one or more tumor-derived DNA, RNA or protein, and obtained from a cancer patient. For example, a tissue sample obtained from a tumor tissue of a cancer patient is a useful tumor sample in the present invention. The tissue sample can be an FFPE sample, or fresh frozen sample, and preferably contain largely tumor cells. A single malignant cell from a cancer patient’s tumor is also a useful tumor sample. Such a malignant cell can be obtained directly from the patient’s tumor, or purified from the patient’s bodily fluid (e.g., blood, urine). Thus, a bodily fluid such as blood, urine, sputum and saliva containing one or tumor cells, or tumor-derived RNA or proteins, can also be useful as a tumor sample for purposes of practicing the present invention. In some embodiments, the patient having a cancer (e.g., lung cancer) has been diagnosed with that cancer.

[0059] Those skilled in the art are familiar with various techniques for determining the status of a gene or protein in a tissue or cell sample including, but not limited to, microarray analysis (e.g., for assaying mRNA or microRNA expression, copy number, etc.), quantitative real-time PCRTM (“qRT-PCRTM,” e.g., TaqManTM), immunoanalysis (e.g., ELISA, immunohistochemistry), sequencing (e.g., quantitative sequencing), etc. The activity level of a

polypeptide encoded by a gene may be used in much the same way as the expression level of the gene or polypeptide. Often higher activity levels indicate higher expression levels and while lower activity levels indicate lower expression levels. Thus, in some embodiments, the invention provides any of the methods discussed above, wherein the activity level of a polypeptide encoded by the CCG is determined rather than or in addition to the expression level of the CCG. Those skilled in the art are familiar with techniques for measuring the activity of various such proteins, including those encoded by the genes listed in Exemplary CCGs are listed in Tables 1, 2, 3, 5, 6, 7, 8, 9, 10 & 11. The methods of the invention may be practiced independent of the particular technique used.

[0060] In preferred embodiments, the expression of one or more normalizing (often called “housekeeping”) genes is also obtained for use in normalizing the expression of test genes. As used herein, “normalizing genes” referred to the genes whose expression is used to calibrate or normalize the measured expression of the gene of interest (*e.g.*, test genes). Importantly, the expression of normalizing genes should be independent of cancer outcome/prognosis, and the expression of the normalizing genes is very similar among all the tumor samples. The normalization ensures accurate comparison of expression of a test gene between different samples. For this purpose, housekeeping genes known in the art can be used. Housekeeping genes are well known in the art, with examples including, but are not limited to, *GUSB* (glucuronidase, beta), *HMBS* (hydroxymethylbilane synthase), *SDHA* (succinate dehydrogenase complex, subunit A, flavoprotein), *UBC* (ubiquitin C) and *YWHAZ* (tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, zeta polypeptide). One or more housekeeping genes can be used. Preferably, at least 2, 3, 4, 5, 6, 7, 8, 9, 10 or 15 housekeeping genes are used to provide a combined normalizing gene set. The amount of gene expression of such normalizing genes can be averaged, combined together by straight additions or by a defined algorithm. Some examples of particularly useful housekeeper genes for use in the methods and compositions of the invention include those listed in Table A below.

Table A

Gene Symbol	Entrez GeneID	Applied Biosystems Assay ID	RefSeq Accession Nos.
<i>CLTC*</i>	1213	Hs00191535_m1	NM_004859.3
<i>GUSB</i>	2990	Hs99999908_m1	NM_000181.2
<i>HMBS</i>	3145	Hs00609297_m1	NM_000190.3
<i>MMADHC*</i>	27249	Hs00739517_g1	NM_015702.2

<i>MRFAP1</i> *	93621	Hs00738144_g1	NM_033296.1
<i>PPP2CA</i> *	5515	Hs00427259_m1	NM_002715.2
<i>PSMA1</i> *	5682	Hs00267631_m1	
<i>PSMC1</i> *	5700	Hs02386942_g1	NM_002802.2
<i>RPL13A</i> *	23521	Hs03043885_g1	NM_012423.2
<i>RPL37</i> *	6167	Hs02340038_g1	NM_000997.4
<i>RPL38</i> *	6169	Hs00605263_g1	NM_000999.3
<i>RPL4</i> *	6124	Hs03044647_g1	NM_000968.2
<i>RPL8</i> *	6132	Hs00361285_g1	NM_033301.1; NM_000973.3
<i>RPS29</i> *	6235	Hs03004310_g1	NM_001030001.1; NM_001032.3
<i>SDHA</i>	6389	Hs00188166_m1	NM_004168.2
<i>SLC25A3</i> *	6515	Hs00358082_m1	NM_213611.1; NM_002635.2; NM_005888.2
<i>TXNL1</i> *	9352	Hs00355488_m1	NR_024546.1; NM_004786.2
<i>UBA52</i> *	7311	Hs03004332_g1	NM_001033930.1; NM_003333.3
<i>UBC</i>	7316	Hs00824723_m1	NM_021009.4
<i>YWHAZ</i>	7534	Hs00237047_m1	NM_003406.3

* Subset of housekeeping genes used in normalizing CCGs and generating the CCP Score in Example 1.

[0061] In the case of measuring RNA levels for the genes, one convenient and sensitive approach is real-time quantitative PCRTM (qPCR) assay, following a reverse transcription reaction. Typically, a cycle threshold (C_t) is determined for each test gene and each normalizing gene, *i.e.*, the number of cycles at which the fluorescence from a qPCR reaction above background is detectable.

[0062] The overall expression of the one or more normalizing genes can be represented by a “normalizing value” which can be generated by combining the expression of all normalizing genes, either weighted equally (straight addition or averaging) or by different predefined coefficients. For example, in a simplest manner, the normalizing value C_{tH} can be the cycle threshold (C_t) of one single normalizing gene, or an average of the C_t values of 2 or more, preferably 10 or more, or 15 or more normalizing genes, in which case, the predefined coefficient is $1/N$, where N is the total number of normalizing genes used. Thus, $C_{tH} = (C_{tH1} + C_{tH2} + \dots + C_{tHn})/N$. As will be apparent to skilled artisans, depending on the normalizing genes used, and the weight desired to be given to each normalizing gene, any coefficients (from $0/N$

to N/N) can be given to the normalizing genes in weighting the expression of such normalizing genes. That is, $C_{tH} = xC_{tH1} + yC_{tH2} + \dots + zC_{tHn}$, wherein $x + y + \dots + z = 1$.

[0063] As discussed above, the methods of the invention generally involve determining the level of expression of a panel of CCGs. With modern high-throughput techniques, it is often possible to determine the expression level of tens, hundreds or thousands of genes. Indeed, it is possible to determine the level of expression of the entire transcriptome (*i.e.*, each transcribed sequence in the genome). Once such a global assay has been performed, one may then informatically analyze one or more subsets of transcripts (*i.e.*, panels or, as often used herein, pluralities of test genes). After measuring the expression of hundreds or thousands of transcripts in a sample, for example, one may analyze (*e.g.*, informatically) the expression of a panel or plurality of test genes comprising primarily CCGs according to the present invention by combining the expression level values of the individual test genes to obtain a test value.

[0064] As will be apparent to a skilled artisan, the test value provided in the present invention can represent the overall expression level of the plurality of test genes composed substantially of (or weighted to be represented substantially by) cell-cycle genes. In one embodiment, to provide a test value in the methods of the invention, the normalized expression for a test gene can be obtained by normalizing the measured C_t for the test gene against the C_{tH} , *i.e.*, $\Delta C_{t1} = (C_{t1} - C_{tH})$. Thus, the test value incorporating the overall expression of the plurality of test genes can be provided by combining the normalized expression of all test genes, either by straight addition or averaging (*i.e.*, weighted equally) or by a different predefined coefficient. For example, the simplest approach is averaging the normalized expression of all test genes: $\text{test value} = (\Delta C_{t1} + \Delta C_{t2} + \dots + \Delta C_{tn})/n$. As will be apparent to skilled artisans, depending on the test genes used, different weight can also be given to different test genes in the present invention. In each case where this document discloses using the expression of a plurality of genes (*e.g.*, “determining [in a tumor sample from the patient] the expression of a plurality of test genes” or “correlating increased expression of said plurality of test genes to an increased likelihood of response”), this includes in some embodiments using a test value incorporating, representing or corresponding to the overall expression of this plurality of genes (*e.g.*, “determining [in a tumor sample from the patient] a test value representing the expression of a plurality of test genes” or “correlating an increased test value [or a test value above some reference value] representing the expression of said plurality of test genes to an increased likelihood of response”).

[0065] It has been determined that, once the CCP phenomenon reported herein is appreciated, the choice of individual CCGs for a test panel can, in some embodiments, be somewhat arbitrary. In other words, many CCGs have been found to be very good surrogates for each other. Thus any CCG (or panel of CCGs) can be used in the various embodiments of the invention. In other embodiments of the invention, optimized CCGs are used. One way of assessing whether particular CCGs will serve well in the methods and compositions of the invention is by assessing their correlation with the mean expression of CCGs (*e.g.*, all known CCGs, a specific set of CCGs, etc.). Those CCGs that correlate particularly well with the mean are expected to perform well in assays of the invention, *e.g.*, because these will reduce noise in the assay.

[0066] 126 CCGs and 47 housekeeping genes had their expression compared to the CCG and housekeeping mean in order to determine preferred genes for use in some embodiments of the invention. Rankings of select CCGs according to their correlation with the mean CCG expression as well as their ranking according to predictive value are given in Tables 2, 3, 5, 6, 7, 12, 13, 14, 15, 16, 17, 18 & 19.

[0067] Some CCGs do not correlate well with the mean. In some embodiments of the present invention, such genes may be grouped, assayed, analyzed, etc. separately from those that correlate well. This is especially useful if these non-correlated genes are independently associated with the clinical feature of interest (*e.g.*, prognosis, therapy response, etc.). Thus, in some embodiments of the invention, non-correlated genes are analyzed together with correlated genes. In some embodiments, a CCG is non-correlated if its correlation to the CCG mean is less than 0.5, 0.4, 0.3, 0.2, 0.10, 0.09, 0.08, 0.07, 0.06, 0.05, 0.04, 0.03, 0.02, 0.01 or less.

[0068] Assays of 126 CCGs and 47 HK (housekeeping) genes were run against 96 commercially obtained, anonymous tumor FFPE samples without outcome or other clinical data. The working hypothesis was that the assays would measure with varying degrees of accuracy the same underlying phenomenon (cell cycle proliferation within the tumor for the CCGs, and sample concentration for the HK genes). Assays were ranked by the Pearson's correlation coefficient between the individual gene and the mean of all the candidate genes, that being the best available estimate of biological activity. Rankings for these 126 CCGs according to their correlation to the overall CCG mean are reported in Table 2.

Table 2

Gene #	Gene Symbol	Correl. w/ Mean	Gene #	Gene Symbol	Correl. w/ Mean	Gene #	Gene Symbol	Correl. w/ Mean
1	<i>TPX2</i>	0.931	44	<i>PBK</i>	0.805	87	<i>KIF18A</i>	0.6987
2	<i>CCNB2</i>	0.9287	45	<i>ESPL1</i>	0.805	88	<i>DONSON</i>	0.688
3	<i>KIF4A</i>	0.9163	46	<i>MKI67</i>	0.7993	89	<i>MCM4</i>	0.686
4	<i>KIF2C</i>	0.9147	47	<i>SPAG5</i>	0.7993	90	<i>RAD54B</i>	0.679
5	<i>BIRC5</i>	0.9077	48	<i>MCM10</i>	0.7963	91	<i>RNASEH2A</i>	0.6733
6	<i>BIRC5</i>	0.9077	49	<i>MCM6</i>	0.7957	92	<i>TUBA1C</i>	0.6697
7	<i>RACGAP1</i>	0.9073	50	<i>OIP5</i>	0.7943	93	<i>C18orf24</i>	0.6697
8	<i>CDC2</i>	0.906	51	<i>CDC45L</i>	0.7937	94	<i>SMC2</i>	0.6697
9	<i>PRC1</i>	0.9053	52	<i>KIF23</i>	0.7927	95	<i>CENPI</i>	0.6697
10	<i>DLGAP5/</i> <i>DLG7</i>	0.9033	53	<i>EZH2</i>	0.789	96	<i>GMPS</i>	0.6683
11	<i>CEP55</i>	0.903	54	<i>SPC25</i>	0.7887	97	<i>DDX39</i>	0.6673
12	<i>CCNB1</i>	0.9	55	<i>STIL</i>	0.7843	98	<i>POLE2</i>	0.6583
13	<i>TOP2A</i>	0.8967	56	<i>CENPN</i>	0.783	99	<i>APOBEC3B</i>	0.6513
14	<i>CDC20</i>	0.8953	57	<i>GTSE1</i>	0.7793	100	<i>RFC2</i>	0.648
15	<i>KIF20A</i>	0.8927	58	<i>RAD51</i>	0.779	101	<i>PSMA7</i>	0.6473
16	<i>BUB1B</i>	0.8927	59	<i>CDCA3</i>	0.7783	102	<i>MPHOSPH1/</i> <i>kif20b</i>	0.6457
17	<i>CDKN3</i>	0.8887	60	<i>TACC3</i>	0.778	103	<i>CDT1</i>	0.645
18	<i>NUSAP1</i>	0.8873	61	<i>PLK4</i>	0.7753	104	<i>H2AFX</i>	0.6387
19	<i>CCNA2</i>	0.8853	62	<i>ASF1B</i>	0.7733	105	<i>ORC6L</i>	0.634
20	<i>KIF11</i>	0.8723	63	<i>DTL</i>	0.769	106	<i>C1orf135</i>	0.6333
21	<i>CDCA8</i>	0.8713	64	<i>CHEK1</i>	0.7673	107	<i>PSRC1</i>	0.633
22	<i>NCAPG</i>	0.8707	65	<i>NCAPG2</i>	0.7667	108	<i>VRK1</i>	0.6323
23	<i>ASPM</i>	0.8703	66	<i>PLK1</i>	0.7657	109	<i>CKAP2</i>	0.6307
24	<i>FOXM1</i>	0.87	67	<i>TIMELESS</i>	0.762	110	<i>CCDC99</i>	0.6303
25	<i>NEK2</i>	0.869	68	<i>E2F8</i>	0.7587	111	<i>CCNE1</i>	0.6283
26	<i>ZWINT</i>	0.8683	69	<i>EXO1</i>	0.758	112	<i>LMNB2</i>	0.625
27	<i>PTTG1</i>	0.8647	70	<i>ECT2</i>	0.744	113	<i>GPSM2</i>	0.625
28	<i>RRM2</i>	0.8557	71	<i>STMN1</i>	0.737	114	<i>PAICS</i>	0.6243
29	<i>TTK</i>	0.8483	72	<i>STMN1</i>	0.737	115	<i>MCAM</i>	0.6227
30	<i>TRIP13</i>	0.841	73	<i>RFC4</i>	0.737	116	<i>DSN1</i>	0.622
31	<i>GIN51</i>	0.841	74	<i>CDC6</i>	0.7363	117	<i>NCAPD2</i>	0.6213
32	<i>CENPF</i>	0.8397	75	<i>CENPM</i>	0.7267	118	<i>RAD54L</i>	0.6213
33	<i>HMMR</i>	0.8367	76	<i>MYBL2</i>	0.725	119	<i>PDSS1</i>	0.6203
34	<i>NCAPH</i>	0.8353	77	<i>SHCBP1</i>	0.723	120	<i>HN1</i>	0.62
35	<i>NDC80</i>	0.8313	78	<i>ATAD2</i>	0.723	121	<i>C21orf45</i>	0.6193
36	<i>KIF15</i>	0.8307	79	<i>KIFC1</i>	0.7183	122	<i>CTSL2</i>	0.619
37	<i>CENPE</i>	0.8287	80	<i>DBF4</i>	0.718	123	<i>CTPS</i>	0.6183
38	<i>TYMS</i>	0.8283	81	<i>CKS1B</i>	0.712	124	<i>MCM7</i>	0.618

39	<i>KIAA0101</i>	0.8203	82	<i>PCNA</i>	0.7103	125	<i>ZWILCH</i>	0.618
40	<i>FANCI</i>	0.813	83	<i>FBXO5</i>	0.7053	126	<i>RFC5</i>	0.6177
41	<i>RAD51AP1</i>	0.8107	84	<i>C12orf48</i>	0.7027			
42	<i>CKS2</i>	0.81	85	<i>TK1</i>	0.7017			
43	<i>MCM2</i>	0.8063	86	<i>BLM</i>	0.701			

[0069] After excluding CCGs with low average expression, assays that produced sample failures, CCGs with correlations less than 0.58, and HK genes with correlations less than 0.95, a subset of 56 CCGs (Panel G) and 36 HK candidate genes were left. Correlation coefficients were recalculated on these subsets, with the rankings shown in Tables 3 and 4, respectively.

Table 3 ("Panel G")

Gene #	Gene Symbol	Correl. w/ CCG mean	Gene #	Gene Symbol	Correl. w/ CCG mean	Gene #	Gene Symbol	Correl. w/ CCG mean
1	<i>FOXM1</i>	0.908	20	<i>C18orf24</i>	0.817	39	<i>FANCI</i>	0.702
2	<i>CDC20</i>	0.907	21	<i>RAD54L</i>	0.816	40	<i>KIF15</i>	0.701
3	<i>CDKN3</i>	0.9	22	<i>PTTG1</i>	0.814	41	<i>PLK4</i>	0.688
4	<i>CDC2</i>	0.899	23	<i>KIF4A</i>	0.814	42	<i>APOBEC3B</i>	0.67
5	<i>KIF11</i>	0.898	24	<i>CDC43</i>	0.811	43	<i>NCAPG</i>	0.667
6	<i>KIAA0101</i>	0.89	25	<i>MCM10</i>	0.802	44	<i>TRIP13</i>	0.653
7	<i>NUSAP1</i>	0.887	26	<i>PRC1</i>	0.79	45	<i>KIF23</i>	0.652
8	<i>CENPF</i>	0.882	27	<i>DTL</i>	0.788	46	<i>NCAPH</i>	0.649
9	<i>ASPM</i>	0.879	28	<i>CEP55</i>	0.787	47	<i>TYMS</i>	0.648
10	<i>BUB1B</i>	0.879	29	<i>RAD51</i>	0.783	48	<i>GIN51</i>	0.639
11	<i>RRM2</i>	0.876	30	<i>CENPM</i>	0.781	49	<i>STMN1</i>	0.63
12	<i>DLGAP5</i>	0.875	31	<i>CDC48</i>	0.774	50	<i>ZWINT</i>	0.621
13	<i>BIRC5</i>	0.864	32	<i>OIP5</i>	0.773	51	<i>BLM</i>	0.62
14	<i>KIF20A</i>	0.86	33	<i>SHCBP1</i>	0.762	52	<i>TTK</i>	0.62
15	<i>PLK1</i>	0.86	34	<i>ORC6L</i>	0.736	53	<i>CDC6</i>	0.619
16	<i>TOP2A</i>	0.851	35	<i>CCNB1</i>	0.727	54	<i>KIF2C</i>	0.596
17	<i>TK1</i>	0.837	36	<i>CHEK1</i>	0.723	55	<i>RAD51AP1</i>	0.567
18	<i>PBK</i>	0.831	37	<i>TACC3</i>	0.722	56	<i>NCAPG2</i>	0.535
19	<i>ASF1B</i>	0.827	38	<i>MCM4</i>	0.703			

Table 4

Gene #	Gene Symbol	Correlation with HK Mean
1	<i>RPL38</i>	0.989
2	<i>UBA52</i>	0.986

3	<i>PSMC1</i>	0.985
4	<i>RPL4</i>	0.984
5	<i>RPL37</i>	0.983
6	<i>RPS29</i>	0.983
7	<i>SLC25A3</i>	0.982
8	<i>CLTC</i>	0.981
9	<i>TXNL1</i>	0.98
10	<i>PSMA1</i>	0.98
11	<i>RPL8</i>	0.98
12	<i>MMADHC</i>	0.979
13	<i>RPL13A</i> ; <i>LOC728658</i>	0.979
14	<i>PPP2CA</i>	0.978
15	<i>MRFAP1</i>	0.978

[0070] The CCGs in Panel F were likewise ranked according to correlation to the CCG mean as shown in Table 5 below.

Table 5

Gene #	Gene Symbol	Correl. w/ CCG mean	Gene #	Gene Symbol	Correl. w/ CCG mean	Gene #	Gene Symbol	Correl. w/ CCG mean
1	<i>DLGAP5</i>	0.931	12	<i>C18orf24</i>	0.885	22	<i>TOP2A</i>	0.852
2	<i>ASPM</i>	0.931	13	<i>PLK1</i>	0.879	23	<i>KIF20A</i>	0.851
3	<i>KIF11</i>	0.926	14	<i>CDKN3</i>	0.874	24	<i>KIAA0101</i>	0.839
4	<i>BIRC5</i>	0.916	15	<i>RRM2</i>	0.871	25	<i>CDCA3</i>	0.835
5	<i>CDCA8</i>	0.902	16	<i>RAD51</i>	0.864	26	<i>ASF1B</i>	0.797
6	<i>CDC20</i>	0.9	17	<i>CEP55</i>	0.862	27	<i>CENPM</i>	0.786
7	<i>MCM10</i>	0.899	18	<i>ORC6L</i>	0.86	28	<i>TK1</i>	0.783
8	<i>PRC1</i>	0.895	19	<i>RAD54L</i>	0.86	29	<i>PBK</i>	0.775
9	<i>BUB1B</i>	0.892	20	<i>CDC2</i>	0.858	30	<i>PTTG1</i>	0.751
10	<i>FOXM1</i>	0.889	21	<i>CENPF</i>	0.855	31	<i>DTL</i>	0.737
11	<i>NUSAP1</i>	0.888						

[0071] When choosing specific CCGs for inclusion in any embodiment of the invention, the individual predictive power of each gene may be used to rank them in importance. The inventors have determined that the CCGs in Panel C can be ranked as shown in Table 6 below according to the predictive power of each individual gene. The CCGs in Panel F can be similarly ranked as shown in Table 7 below.

Table 6

Gene	Gene	p-value	Gene	Gene	p-value	Gene	Gene	p-value
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#			#			#		
1	<i>NUSAP1</i>	2.8E-07	12	<i>BUB1</i>	8.3E-05	23	<i>KPNA2</i>	2.0E-02
2	<i>DLG7</i>	5.9E-07	13	<i>PBK</i>	1.2E-04	24	<i>UBE2C</i>	2.2E-02
3	<i>CDC2</i>	6.0E-07	14	<i>TTK</i>	3.2E-04	25	<i>MELK</i>	2.5E-02
4	<i>FOXM1</i>	1.1E-06	15	<i>CDC45L</i>	7.7E-04	26	<i>CENPA</i>	2.9E-02
5	<i>MYBL2</i>	1.1E-06	16	<i>PRC1</i>	1.2E-03	27	<i>CKS2</i>	5.7E-02
6	<i>CDCA8</i>	3.3E-06	17	<i>DTL</i>	1.4E-03	28	<i>MAD2L1</i>	1.7E-01
7	<i>CDC20</i>	3.8E-06	18	<i>CCNB1</i>	1.5E-03	29	<i>UBE2S</i>	2.0E-01
8	<i>RRM2</i>	7.2E-06	19	<i>TPX2</i>	1.9E-03	30	<i>AURKA</i>	4.8E-01
9	<i>PTTG1</i>	1.8E-05	20	<i>ZWINT</i>	9.3E-03	31	<i>TIMELESS</i>	4.8E-01
10	<i>CCNB2</i>	5.2E-05	21	<i>KIF23</i>	1.1E-02			
11	<i>HMMR</i>	5.2E-05	22	<i>TRIP13</i>	1.7E-02			

Table 7

Gene #	Gene Symbol	p-value	Gene #	Gene Symbol	p-value	Gene #	Gene Symbol	p-value
1	<i>MCM10</i>	8.60E-10	12	<i>BUB1B</i>	1.10E-05	23	<i>C18orf24</i>	0.0011
2	<i>ASPM</i>	2.30E-09	13	<i>RAD54L</i>	1.40E-05	24	<i>BIRC5</i>	0.00118
3	<i>DLGAP5</i>	1.20E-08	14	<i>CEP55</i>	2.60E-05	25	<i>RRM2</i>	0.00255
4	<i>CENPF</i>	1.40E-08	15	<i>CDCA8</i>	3.10E-05	26	<i>CENPM</i>	0.0027
5	<i>CDC20</i>	2.10E-08	16	<i>TK1</i>	3.30E-05	27	<i>RAD51</i>	0.0028
6	<i>FOXM1</i>	3.40E-07	17	<i>DTL</i>	3.60E-05	28	<i>KIAA0101</i>	0.00348
7	<i>TOP2A</i>	4.30E-07	18	<i>PRC1</i>	3.90E-05	29	<i>CDCA3</i>	0.00863
8	<i>NUSAP1</i>	4.70E-07	19	<i>PTTG1</i>	4.10E-05	30	<i>PBK</i>	0.00923
9	<i>CDKN3</i>	5.50E-07	20	<i>CDC2</i>	0.00013	31	<i>ASF1B</i>	0.00936
10	<i>KIF11</i>	6.30E-06	21	<i>ORC6L</i>	0.00017			
11	<i>KIF20A</i>	6.50E-06	22	<i>PLK1</i>	0.0005			

[0072] Thus, in some embodiments of each of the various aspects of the invention the plurality of test genes comprises the top 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 20, 25, 30, 35, 40 or more CCGs listed in Table 2, 3, 5, 6, 7, 12, 13, 14, 15, 16, 17, 18 or 19. In some embodiments the plurality of test genes comprises at least some number of CCGs (e.g., at least 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40, 45, 50 or more CCGs) and this plurality of CCGs comprises at least 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, or 20 of the following genes: *ASPM*, *BIRC5*, *BUB1B*, *CCNB2*, *CDC2*, *CDC20*, *CDCA8*, *CDKN3*, *CENPF*, *DLGAP5*, *FOXM1*, *KIAA0101*, *KIF11*, *KIF2C*, *KIF4A*, *MCM10*, *NUSAP1*, *PRC1*, *RACGAP1*, and *TPX2*. In some embodiments the plurality of test genes comprises at least some number of CCGs (e.g., at least 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40, 45, 50 or more CCGs) and this plurality of CCGs comprises at least 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, or 20 of the following genes: *TPX2*, *CCNB2*, *KIF4A*, *KIF2C*, *BIRC5*, *RACGAP1*, *CDC2*, *PRC1*, *DLGAP5*/*DLG7*, *CEP55*, *CCNB1*, *TOP2A*, *CDC20*, *KIF20A*, *BUB1B*, *CDKN3*, *NUSAP1*, *CCNA2*, *KIF11*, and *CDCA8*. In some

embodiments the plurality of test genes comprises at least some number of CCGs (*e.g.*, at least 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40, 45, 50 or more CCGs) and this plurality of CCGs comprises any one, two, three, four, five, six, seven, eight, nine, or ten or all of gene numbers 1 & 2, 1 to 3, 1 to 4, 1 to 5, 1 to 6, 1 to 7, 1 to 8, 1 to 9, or 1 to 10 of any of Table 2, 3, 5, 6, 7, 12, 13, 14, 15, 16, 17, 18 or 19. In some embodiments the plurality of test genes comprises at least some number of CCGs (*e.g.*, at least 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40, 45, 50 or more CCGs) and this plurality of CCGs comprises any one, two, three, four, five, six, seven, eight, or nine or all of gene numbers 2 & 3, 2 to 4, 2 to 5, 2 to 6, 2 to 7, 2 to 8, 2 to 9, or 2 to 10 of any of Table 2, 3, 5, 6, 7, 12, 13, 14, 15, 16, 17, 18 or 19. In some embodiments the plurality of test genes comprises at least some number of CCGs (*e.g.*, at least 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40, 45, 50 or more CCGs) and this plurality of CCGs comprises any one, two, three, four, five, six, seven, or eight or all of gene numbers 3 & 4, 3 to 5, 3 to 6, 3 to 7, 3 to 8, 3 to 9, or 3 to 10 of any of Table 2, 3, 5, 6, 7, 12, 13, 14, 15, 16, 17, 18 or 19. In some embodiments the plurality of test genes comprises at least some number of CCGs (*e.g.*, at least 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40, 45, 50 or more CCGs) and this plurality of CCGs comprises any one, two, three, four, five, six, or seven or all of gene numbers 4 & 5, 4 to 6, 4 to 7, 4 to 8, 4 to 9, or 4 to 10 of any of Table 2, 3, 5, 6, 7, 12, 13, 14, 15, 16, 17, 18 or 19. In some embodiments the plurality of test genes comprises at least some number of CCGs (*e.g.*, at least 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40, 45, 50 or more CCGs) and this plurality of CCGs comprises any one, two, three, four, five, six, seven, eight, nine, 10, 11, 12, 13, 14, or 15 or all of gene numbers 1 & 2, 1 to 3, 1 to 4, 1 to 5, 1 to 6, 1 to 7, 1 to 8, 1 to 9, 1 to 10, 1 to 11, 1 to 12, 1 to 13, 1 to 14, or 1 to 15 of any of Table 2, 3, 5, 6, 7, 12, 13, 14, 15, 16, 17, 18 or 19.

[0073] In some embodiments the plurality of test genes comprises at least some number of CCGs (*e.g.*, at least 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40, 45, 50 or more CCGs) and this plurality of CCGs comprises gene numbers 1 & 2; 1 & 2-3; 1 & 3-4; 1 & 4-5; 1 & 5-6; 1 & 6-7; 1 & 7-8; 1 & 8-9; 1 & 9 & 10; 1 & 10 & 11; 1 & 3; 1 & 2-4; 1 & 3-5; 1 & 4-6; 1 & 5-7; 1 & 6-8; 1 & 7-9; 1 & 8-10; 1 & 9 & 11; 1 & 4; 1 & 2-5; 1 & 3-6; 1 & 4-7; 1 & 5-8; 1 & 6-9; 1 & 7-10; 1 & 8-11; 1 & 5; 1 & 2-6; 1 & 3-7; 1 & 4-8; 1 & 5-9; 1 & 6-10; 1 & 7-11; 1 & 6; 1 & 2-7; 1 & 3-8; 1 & 4-9; 1 & 5-10; 1 & 6-11; 1 & 7; 1 & 2-8; 1 & 3-9; 1 & 4-10; 1 & 5-11; 1 & 8; 1 & 2-9; 1 & 3-10; 1 & 4-11; 1 & 9; 1 & 2-10; 1 & 3-11; 1 & 10; 1 & 2-11; 1 & 11; 2 & 3; 2 & 3-4; 2 & 4-5; 2 & 5-6; 2 & 6-7; 2 & 7-8; 2 & 8-9; 2 & 9 & 10; 2 & 10 & 11; 2 & 4; 2 & 3-5; 2 & 4-6; 2 & 5-7; 2 & 6-8; 2 & 7-9; 2 & 8-10; 2 & 9 & 11; 2 & 5; 2 & 3-6; 2 & 4-7; 2 & 5-8; 2 & 6-9; 2 & 7-10; 2 & 8-11; 2 & 6; 2 & 3-7; 2 & 4-8; 2 & 5-9; 2 & 6-10; 2 & 7-11; 2 & 7; 2

& 3-8; 2 & 4-9; 2 & 5-10; 2 & 6-11; 2 & 8; 2 & 3-9; 2 & 4-10; 2 & 5-11; 2 & 9; 2 & 3-10; 2 & 4-11; 2 & 10; 2 & 3-11; 2 & 11; 3 & 4; 3 & 4-5; 3 & 5-6; 3 & 6-7; 3 & 7-8; 3 & 8-9; 3 & 9 & 10; 3 & 10 & 11; 3 & 5; 3 & 4-6; 3 & 5-7; 3 & 6-8; 3 & 7-9; 3 & 8-10; 3 & 9 & 11; 3 & 6; 3 & 4-7; 3 & 5-8; 3 & 6-9; 3 & 7-10; 3 & 8-11; 3 & 7; 3 & 4-8; 3 & 5-9; 3 & 6-10; 3 & 7-11; 3 & 8; 3 & 4-9; 3 & 5-10; 3 & 6-11; 3 & 9; 3 & 4-10; 3 & 5-11; 3 & 10; 3 & 4-11; 3 & 11; 4 & 5; 4 & 5-6; 4 & 6-7; 4 & 7-8; 4 & 8-9; 4 & 9 & 10; 4 & 10-11; 4 & 6; 4 & 5-7; 4 & 6-8; 4 & 7-9; 4 & 8-10; 4 & 9-11; 4 & 7; 4 & 5-8; 4 & 6-9; 4 & 7-10; 4 & 8-11; 4 & 8; 4 & 5-9; 4 & 6-10; 4 & 7-11; 4 & 9; 4 & 5-10; 4 & 6-11; 4 & 10; 4 & 5-11; 4 & 11; 5 & 6; 5 & 6-7; 5 & 7-8; 5 & 8-9; 5 & 9 & 10; 5 & 10-11; 5 & 7; 5 & 6-8; 5 & 7-9; 5 & 8-10; 5 & 9-11; 5 & 8; 5 & 6-9; 5 & 7-10; 5 & 8-11; 5 & 9; 5 & 6-10; 5 & 7-11; 5 & 10; 5 & 6-11; 5 & 11; 6 & 7; 6 & 7-8; 6 & 8-9; 6 & 9 & 10; 6 & 10-11; 6 & 8; 6 & 7-9; 6 & 8-10; 6 & 9-11; 6 & 9; 6 & 7-10; 6 & 8-11; 6 & 10; 6 & 7-11; 6 & 11; 7 & 8; 7 & 8-9; 7 & 9 & 10; 7 & 10-11; 7 & 9; 7 & 8-10; 7 & 9-11; 7 & 10; 7 & 8-11; 7 & 11; 8 & 9; 8 & 9-10; 8 & 10-11; 8 & 10; 8 & 9-11; 8 & 11; 9 & 10; 9 & 10-11; or gene numbers 9 & 11 of any of Table 2, 3, 5, 6, 7, 12, 13, 14, 15, 16, 17, 18 or 19.

[0074] In some embodiments, the test value incorporating or representing the overall expression of the plurality of test genes is compared to one or more reference values (or index values), and optionally correlated to a poor or good prognosis (e.g., shorter expected post-surgery metastasis-free survival) or an increased or no increased likelihood of response to treatment comprising chemotherapy. In some cases such values are called “scores,” especially in the Examples below. In some embodiments a test value greater than the reference value(s) (or a test value that, relative to the reference value, represents increased expression of the test genes) can be correlated to a poor prognosis and/or increased likelihood of response to treatment comprising chemotherapy. In some embodiments the test value is deemed “greater than” the reference value (e.g., the threshold index value), and thus correlated to a poor prognosis and/or an increased likelihood of response to treatment comprising chemotherapy, if the test value exceeds the reference value by at least some amount (e.g., at least 0.5, 0.75, 0.85, 0.90, 0.95, 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10 or more fold or standard deviations).

[0075] For example, the index value may incorporate or represent the gene expression levels found in a normal sample obtained from the patient of interest (including tissue surrounding the cancerous tissue in a biopsy), in which case an expression level in the tumor sample significantly higher than this index value would indicate, e.g., increased likelihood of response to a particular treatment regimen (e.g., a treatment regimen comprising chemotherapy).

[0076] Alternatively, the index value may incorporate or represent the average expression level for a set of individuals from a diverse cancer population or a subset of the population. For example, one may determine the average expression level of a gene or gene panel in a random sampling of patients with cancer (*e.g.*, lung cancer). This average expression level may be termed the “threshold index value,” with patients having a test value higher than this value or a test value representing expression higher than the expression represented by the threshold index value (or at least some amount higher than this value) expected to have a better prognosis and/or a greater likelihood of response to a particular treatment regimen (*e.g.*, a treatment regimen comprising chemotherapy) than those having a test value lower than this value.

[0077] Alternatively, the index value may incorporate or represent the average expression level of a particular gene or gene panel in a plurality of training patients (*e.g.*, lung cancer patients) with similar outcomes whose clinical and follow-up data are available and sufficient to define and categorize the patients by disease outcome, *e.g.*, response to a particular treatment regimen (*e.g.*, a treatment regimen comprising chemotherapy). *See, e.g.*, Examples, *infra*. For example, a “poor prognosis index value” or a “good response index value” can be generated from a plurality of training cancer patients characterized as having “poor prognosis” or a “good prognosis/response”, *e.g.*, relatively short expected survival (*e.g.*, overall survival, disease-free survival, distant metastasis-free survival, etc.); complete response, partial response, or stable disease (*e.g.*, by RECIST criteria) after treatment comprising chemotherapy. A “good response index value” or a “poor response index value” can be generated from a plurality of training cancer patients defined as having “good prognosis” or “poor response”, *e.g.*, absence of complete response, partial response, or stable disease (*e.g.*, by RECIST criteria) after treatment comprising chemotherapy. Thus, for example, a good response index value of a particular gene or gene panel may represent the average level of expression of the particular gene or gene panel in patients having a “good response,” whereas a poor response index value of a particular gene or gene panel represents the average level of expression of the particular gene or gene panel in patients having a “poor response.” Thus, if the determined level of expression of a relevant gene or gene panel is closer to the good response index value of the gene or gene panel than to the poor response index value of the gene or gene panel, then it can be concluded that the patient is more likely to have a good response. On the other hand, if the determined level of expression of a relevant gene or gene panel is closer to the poor response index value of the

gene or gene panel than to the good response index value of the gene or gene panel, then it can be concluded that the patient is more likely to have a poor response.

[0078] Alternatively index values may be determined thusly: In order to assign patients to risk groups, a threshold value may be set for the cell cycle mean. The optimal threshold value is selected based on the receiver operating characteristic (ROC) curve, which plots sensitivity vs (1 – specificity). For each increment of the cell cycle mean, the sensitivity and specificity of the test is calculated using that value as a threshold. The actual threshold will be the value that optimizes these metrics according to the artisan's requirements (*e.g.*, what degree of sensitivity or specificity is desired, etc.). FIG.1 and the accompanying discussion herein demonstrate determination of a threshold value determined and validated experimentally.

[0079] Panels of CCGs (*e.g.*, 2, 3, 4, 5, 6, 7, 8, 9, or 10 or more CCGs) can accurately predict response, as shown in FIG.1 and Table 20. Those skilled in the art are familiar with various ways of determining the expression of a panel of genes (*i.e.*, a plurality of genes). One may determine the expression of a panel of genes by determining the average expression level (normalized or absolute) of all panel genes in a sample obtained from a particular patient (either throughout the sample or in a subset of cells or a single cell from the sample). Increased expression in this context will mean the average expression is higher than the average expression level of these genes in some reference (*e.g.*, higher than in normal patients; higher than some index value that has been determined to represent the average expression level in a reference population, such as patients with the same cancer; etc.). Alternatively, one may determine the expression of a panel of genes by determining the average expression level (normalized or absolute) of at least a certain number (*e.g.*, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30 or more) or at least a certain proportion (*e.g.*, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 95%, 99%, 100%) of the genes in the panel. Alternatively, one may determine the expression of a panel of genes by determining the absolute copy number of the analyte representing each gene in the panel (*e.g.*, mRNA, cDNA, protein) and either total or average these across the genes.

[0080] “Response” (*e.g.*, response to a particular treatment regimen) is a well-known term in the art and is used herein according to its known meaning. As an example, the meaning of “response” may be cancer-type dependent, with response in lung cancer meaning something different from response in prostate cancer. However, within each cancer-type and

subtype “response” is clearly understood to those skilled in the art. For example, some objective criteria of response include Response Evaluation Criteria In Solid Tumors (RECIST), a set of published rules (*e.g.*, changes in tumor size, *etc.*) that define when cancer patients improve (“respond”), stay the same (“stabilize”), or worsen (“progression”) during treatments. *See, e.g.*, Eisenhauer *et al.*, EUR. J. CANCER (2009) 45:228-247. “Response” can also include survival metrics (*e.g.*, “disease-free survival” (DFS), “overall survival” (OS), *etc.*). In some cases RECIST criteria can include: (a) Complete response (CR): disappearance of all metastases; (b) Partial response (PR): at least a 30% decrease in the sum of the largest diameter (LD) of the metastatic lesions, taking as reference the baseline sum LD; (c) Stable disease (SD): neither sufficient shrinkage to qualify for PR nor sufficient increase to qualify for PD taking as references the smallest sum LD since the treatment started; (d) Progression (PD): at least a 20% increase in the sum of the LD of the target metastatic lesions taking as reference the smallest sum LD since the treatment started or the appearance of one or more new lesions.

[0081] As shown in the Examples below, increased CCG expression correlates well with increased likelihood of response to particular treatments (*e.g.*, treatments comprising chemotherapy). As used herein, “particular treatment” refers to a medical management regimen with at least some defined parameters. These may include administration (including prescription) of particular therapeutic agent alone; a specific combination of agents (*e.g.*, FOLFOX, FOLFIRI); a combination of agents at least comprising a particular agent (*e.g.*, 5-fluorouracil) or subcombination of agents (*e.g.*, platinum compounds with taxanes) together with any other agents or interventions (*e.g.*, surgery, radiation); a surgical or other intervention (*e.g.*, surgical resection of the tumor, radiation therapy); or any combination of these (*e.g.*, surgical resection of the tumor followed by chemotherapy, also known as “adjuvant” chemotherapy). “Chemotherapy” as used herein has its conventional meaning as is well-known in the art. In some embodiments, the particular treatment (*e.g.*, a treatment regimen comprising chemotherapy) comprises a platinum-based compound (*e.g.*, cisplatin, carboplatin, oxaliplatin) paired with a taxane (*e.g.*, docetaxel, paclitaxel) and/or gemcitabine.

[0082] For many lung cancer patients and their physicians surgery to remove the tumor (sometimes including surrounding healthy tissue) is the standard of care. Because surgery can cure some patients and adjuvant chemotherapy is debilitating and expensive, the decision whether to undertake adjuvant chemotherapy is more difficult. In some embodiments, increased expression of CCGs correlates with increased likelihood of response to adjuvant chemotherapy (and thus in some embodiments adjuvant chemotherapy is administered,

recommended or prescribed if expression of CCGs is increased). In some embodiments, increased expression of a plurality of test genes comprising CCGs, where CCGs are weighted to contribute at least 50% or more to a test value incorporating or representing the expression of the plurality of test genes, correlates with increased likelihood of response to adjuvant chemotherapy (and thus in some embodiments adjuvant chemotherapy is administered, recommended or prescribed if expression of the plurality of test genes is increased).

[0083] As used herein, a patient has an “increased likelihood” of some clinical feature or outcome (*e.g.*, response) if the probability of the patient having the feature or outcome exceeds some reference probability or value. The reference probability may be the probability of the feature or outcome across the general relevant patient population. For example, if the probability of response (*e.g.*, to treatment comprising chemotherapy) in the general lung cancer patient population (or some specific subpopulation, *e.g.*, in stage Ia, Ib, or II lung cancer patients) is $X\%$ and a particular patient has been determined by the methods of the present invention to have a probability of response of $Y\%$, and if $Y > X$, then the patient has an “increased likelihood” of response. In some embodiments, the patient has an increased likelihood of response if $Y - X =$ at least 10, 20, 30, 40, 50, 60, 70, 80, or 90. Alternatively, as discussed above, a threshold or reference value may be determined and a particular patient’s probability of response may be compared to that threshold or reference. Because predicting response is a prognostic endeavor, “predicting prognosis” will sometimes be used herein to refer to predicting response.

[0084] Similarly, prognosis is often used in a relative sense. Often when it is said that a patient has a poor prognosis, this means the patient has a worse prognosis than other (*e.g.*, average) patients (or worse than the patient would have had if the patient had different clinical indications). Thus, unless expressly stated otherwise or the context clearly indicates otherwise, “poor prognosis” includes “poorer prognosis” and “good prognosis” includes “better prognosis.” As discussed elsewhere in this document, prognosis can include a patient’s likelihood of cancer recurrence, cancer metastasis, or new primary cancer(s). In these cases, “poor prognosis” means the patient has an “increased likelihood” (as discussed in the preceding paragraph) of one of these clinical outcomes. Prognosis can also include the likelihood of survival (*e.g.*, overall survival, disease-free survival, distant metastasis-free survival, etc.). In these cases, “poor prognosis” means either (a) the patient’s (estimated) expected survival time is some certain amount (*e.g.*, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, or 20 years), which is lower than some reference amount; or (b) the patient has a “decreased likelihood” (as discussed in the

preceding paragraph) of survival beyond a certain amount of time (e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20 or more years). The opposite would of course be true for a “good prognosis.”

[0085] As shown in Tables 6 & 7, individual CCGs can predict response quite well. Thus some embodiments of the invention comprise determining the expression of a single CCG listed in any of Table 1, 2, 3, 5, 6, 7, 8, 9, 10 or 11 or Panel A, B, C, D, E, F, G, H, J or K and correlating increased expression to increased likelihood of response.

[0086] FIG.1 and Table 20 show that panels of CCGs (e.g., 2, 3, 4, 5, or 6 CCGs) can accurately predict response. Thus in some aspects the invention provides a method of classifying a cancer comprising determining the status of a panel of genes (e.g., a plurality of test genes) comprising a plurality of CCGs. For example, increased expression in a panel of genes (or plurality of test genes) may refer to the average expression level of all panel or test genes in a particular patient being higher than the average expression level of these genes in normal patients (or higher than some index value that has been determined to represent the normal average expression level). Alternatively, increased expression in a panel of genes may refer to increased expression in at least a certain number (e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30 or more) or at least a certain proportion (e.g., 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 95%, 99%, 100%) of the genes in the panel as compared to the average normal expression level.

[0087] In some embodiments the panel comprises at least 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40, 45, 50, 70, 80, 90, 100, 200, or more CCGs. In some embodiments the panel comprises at least 10, 15, 20, or more CCGs. In some embodiments the panel comprises between 5 and 100 CCGs, between 7 and 40 CCGs, between 5 and 25 CCGs, between 10 and 20 CCGs, or between 10 and 15 CCGs. In some embodiments CCGs comprise at least a certain proportion of the panel. Thus in some embodiments the panel comprises at least 25%, 30%, 40%, 50%, 60%, 70%, 75%, 80%, 85%, 90%, 95%, 96%, 97%, 98%, or 99% CCGs. In some preferred embodiments the panel comprises at least 10, 15, 20, 25, 30, 35, 40, 45, 50, 70, 80, 90, 100, 200, or more CCGs, and such CCGs constitute of at least 50%, 60%, 70%, preferably at least 75%, 80%, 85%, more preferably at least 90%, 95%, 96%, 97%, 98%, or 99% or more of the total number of genes in the panel. In some embodiments the panel of CCGs comprises the genes in Table 1, 2, 3, 5, 6, 7, 8, 9, 10 or 11; Panel A, B, C, D, E, F, G, H, J or K; or “sub-panels” of Panel F in Tables 21 to 25. In some embodiments the panel comprises at least 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 20, 25, 30, or more of the genes in Table 1, 2, 3, 5, 6, 7, 8,

9, 10 or 11; Panel A, B, C, D, E, F, G, H, J or K; or “sub-panels” of Panel F in Tables 21 to 25. In some embodiments the invention provides a method of determining prognosis and/or predicting response to a particular treatment regimen (e.g., a regimen comprising chemotherapy), the method comprising determining the status of the CCGs in any one of Table 1, 2, 3, 5, 6, 7, 8, 9, 10 or 11; Panel A, B, C, D, E, F, G, H, J or K; or “sub-panels” of Panel F in Tables 21 to 25 and correlating increased expression of the panel to a poor prognosis and/or increased likelihood of response to the treatment regimen.

[0088] Several panels of CCGs (shown in Table 1, 2, 3, 5, 6, 7, 8, 9, 10 or 11; Panel A, B, C, D, E, F, G, H, J or K; or “sub-panels” of Panel F in Tables 21 to 25) are useful in determining prognosis and/or predicting response to particular treatment.

Table 8: “Panel C”

Gene Symbol	Entrez GeneID	Gene Symbol	Entrez GeneID	Gene Symbol	Entrez GeneID
<i>AURKA</i>	6790	<i>DTL</i> *	51514	<i>PTTG1</i> *	9232
<i>BUB1</i> *	699	<i>FOXM1</i> *	2305	<i>RRM2</i> *	6241
<i>CCNB1</i> *	891	<i>HMMR</i> *	3161	<i>TIMELESS</i> *	8914
<i>CCNB2</i> *	9133	<i>KIF23</i> *	9493	<i>TPX2</i> *	22974
<i>CDC2</i> *	983	<i>KPNA2</i>	3838	<i>TRIP13</i> *	9319
<i>CDC20</i> *	991	<i>MAD2L1</i> *	4085	<i>TTK</i> *	7272
<i>CDC45L</i> *	8318	<i>MELK</i>	9833	<i>UBE2C</i>	11065
<i>CDCA8</i> *	55143	<i>MYBL2</i> *	4605	<i>UBE2S</i> *	27338
<i>CENPA</i>	1058	<i>NUSAP1</i> *	51203	<i>ZWINT</i> *	11130
<i>CKS2</i> *	1164	<i>PBK</i> *	55872		
<i>DLG7</i> *	9787	<i>PRC1</i> *	9055		

* These genes can be used as a 26-gene subset panel (“Panel D”) in some embodiments of the invention.

Table 9: “Panel E”

Name	GeneID	Name	GeneID	Name	GeneID
<i>ASF1B</i> *	55723	<i>CENPM</i> *	79019	<i>ORC6L</i> *	23594
<i>ASPM</i> *	259266	<i>CEP55</i> *	55165	<i>PBK</i> *	55872
<i>BIRC5</i> *	332	<i>DLGAP5</i> *	9787	<i>PLK1</i> *	5347
<i>BUB1B</i> *	701	<i>DTL</i> *	51514	<i>PRC1</i> *	9055
<i>C18orf24</i> *	220134	<i>FOXM1</i> *	2305	<i>PTTG1</i> *	9232
<i>CDC2</i> *	983	<i>KIAA0101</i> *	9768	<i>RAD51</i> *	5888
<i>CDC20</i> *	991	<i>KIF11</i> *	3832	<i>RAD54L</i> *	8438
<i>CDCA3</i> *	83461	<i>KIF20A</i> *	10112	<i>RRM2</i> *	6241

<i>CDCA8</i> *	55143	<i>KIF4A</i>	24137	<i>TK1</i> *	7083
<i>CDKN3</i> *	1033	<i>MCM10</i> *	55388	<i>TOP2A</i> *	7153
<i>CENPF</i> *	1063	<i>NUSAP1</i> *	51203		

* These genes can be used as a 31-gene subset panel ("Panel F") in some embodiments of the invention.

Table 10: "Panel G"

<i>ASF1B</i> *#	Hs00216780_m1	<i>RRM2</i> *#	Hs00357247_g1
<i>ASPM</i> *#	Hs00411505_m1	<i>TK1</i> *#	Hs01062125_m1
<i>BUB1B</i> *#	Hs01084828_m1	<i>TOP2A</i> *#	Hs00172214_m1
<i>C18orf24</i> *#	Hs00536843_m1	<i>GAPDH</i> ^	Hs99999905_m1
<i>CDC2</i> *#	Hs00364293_m1	<i>CLTC</i> **	Hs00191535_m1
<i>CDKN3</i> *#	Hs00193192_m1	<i>MMADHC</i> **	Hs00739517_g1
<i>CENPF</i> *#	Hs00193201_m1	<i>PPP2CA</i> **	Hs00427259_m1
<i>CENPM</i> *#	Hs00608780_m1	<i>PSMA1</i> **	Hs00267631_m1
<i>DTL</i> *#	Hs00978565_m1	<i>PSMC1</i> **	Hs02386942_g1
<i>CDCA3</i> *#	Hs00229905_m1	<i>RPL13A</i> **	Hs03043885_g1
<i>KIAA0101</i> *#	Hs00207134_m1	<i>RPL37</i> **	Hs02340038_g1
<i>KIF11</i> *#	Hs00189698_m1	<i>RPL38</i> **	Hs00605263_g1
<i>KIF20A</i> *#	Hs00993573_m1	<i>RPL4</i> **	Hs03044647_g1
<i>KIF4A</i> *#	Hs01020169_m1	<i>RPL8</i> **	Hs00361285_g1
<i>MCM10</i> *#	Hs00960349_m1	<i>RPS29</i> **	Hs03004310_g1
<i>NUSAP1</i> *#	Hs01006195_m1	<i>SLC25A3</i> **	Hs00358082_m1
<i>PBK</i> *#	Hs00218544_m1	<i>TXNL1</i> **	Hs00355488_m1
<i>PLK1</i> *#	Hs00153444_m1	<i>UBA52</i> **	Hs03004332_g1
<i>PRC1</i> *#	Hs00187740_m1		
<i>PTTG1</i> *#	Hs00851754_u1		
<i>RAD51</i> *#	Hs00153418_m1		
<i>RAD54L</i> *#	Hs00269177_m1		

* CCP genes (Panel H)

** Housekeeping control genes (Panel I)

Table 11: "Panel J"

Gene Symbol	ABI Assay ID	Entrez GeneID	Gene Symbol	ABI Assay ID	Entrez GeneID
<i>ASF1B</i> *#	Hs00216780_m1	55723	<i>RRM2</i> *#	Hs00357247_g1	6241
<i>ASPM</i> *#	Hs00411505_m1	259266	<i>TK1</i> *#	Hs01062125_m1	7083
<i>BUB1B</i> *#	Hs01084828_m1	701	<i>TOP2A</i> *#	Hs00172214_m1	7153
<i>C18orf24</i> *#	Hs00536843_m1	220134	<i>GAPDH</i> ^	Hs99999905_m1	2597
<i>CDC2</i> *#	Hs00364293_m1	983	<i>CLTC</i> **	Hs00191535_m1	1213
<i>CDKN3</i> *#	Hs00193192_m1	83461	<i>MMADHC</i> **	Hs00739517_g1	27249

<i>CENPF</i> *#	Hs00193201_m1	1033	<i>PPP2CA</i> **	Hs00427259_m1	5515
<i>CENPM</i> *#	Hs00608780_m1	1063	<i>PSMA1</i> **	Hs00267631_m1	5682
<i>DTL</i> *#	Hs00978565_m1	79019	<i>PSMC1</i> **	Hs02386942_g1	5700
<i>CDCA3</i> *#	Hs00229905_m1	51514	<i>RPL13A</i> **	Hs03043885_g1	23521
<i>KIAA0101</i> *#	Hs00207134_m1	9768	<i>RPL37</i> **	Hs02340038_g1	6167
<i>KIF11</i> *#	Hs00189698_m1	3832	<i>RPL38</i> **	Hs00605263_g1	6169
<i>KIF20A</i> *#	Hs00993573_m1	10112	<i>RPL4</i> **	Hs03044647_g1	6124
<i>MCM10</i> *#	Hs00960349_m1	55388	<i>RPL8</i> **	Hs00361285_g1	6132
<i>NUSAP1</i> *#	Hs01006195_m1	51203	<i>RPS29</i> **	Hs03004310_g1	6235
<i>PBK</i> *#	Hs00218544_m1	55872	<i>SLC25A3</i> **	Hs00358082_m1	6515
<i>PLK1</i> *#	Hs00153444_m1	5347	<i>TXNL1</i> **	Hs00355488_m1	9352
<i>PRC1</i> *#	Hs00187740_m1	9055	<i>UBA52</i> **	Hs03004332_g1	7311
<i>PTTG1</i> *#	Hs00851754_u1	9232			
<i>RAD51</i> *#	Hs00153418_m1	5888			
<i>RAD54L</i> *#	Hs00269177_m1	8438			

* CCP genes (Panel K)

** Housekeeping control genes

^ Internal control gene

[0089] Similar to Tables 2 to 7 above, the CCP genes in Tables 10 & 11 were ranked according to correlation to the CCP mean and according to independent predictive value (p-value). Rankings according to correlation to the mean are shown in Tables 12 to 14 below. Rankings according to p-value are shown in Tables 15 & 16 below.

Table 12

Gene #	Gene Symbol	Gene #	Gene Symbol
1	<i>KIF4A</i>	14	<i>KIAA0101</i>
2	<i>CDC2</i>	15	<i>PBK</i>
3	<i>PRC1</i>	16	<i>MCM10</i>
4	<i>TOP2A</i>	17	<i>RAD51</i>
5	<i>KIF20A</i>	18	<i>CDCA3</i>
6	<i>BUB1B</i>	19	<i>ASF1B</i>
7	<i>CDKN3</i>	20	<i>DTL</i>
8	<i>PTTG1</i>	21	<i>PLK1</i>
9	<i>NUSAP1</i>	22	<i>CENPM</i>
10	<i>KIF11</i>	23	<i>TK1</i>
11	<i>ASPM</i>	24	<i>C18orf24</i>
12	<i>RRM2</i>	25	<i>RAD54L</i>
13	<i>CENPF</i>		

Table 13

Gene #	Gene Symbol	Gene #	Gene Symbol
1	<i>CDKN3</i>	14	<i>PBK</i>
2	<i>CDC2</i>	15	<i>ASF1B</i>
3	<i>KIF11</i>	16	<i>C18orf24</i>
4	<i>KIAA0101</i>	17	<i>RAD54L</i>
5	<i>NUSAP1</i>	18	<i>PTTG1</i>
6	<i>CENPF</i>	19	<i>KIF4A</i>
7	<i>ASPM</i>	20	<i>CDCA3</i>
8	<i>BUB1B</i>	21	<i>MCM10</i>
9	<i>RRM2</i>	22	<i>PRC1</i>
10	<i>KIF20A</i>	23	<i>DTL</i>
11	<i>PLK1</i>	24	<i>RAD51</i>
12	<i>TOP2A</i>	25	<i>CENPM</i>
13	<i>TK1</i>		

Table 14

Gene #	Gene Symbol	Gene #	Gene Symbol
1	<i>ASPM</i>	14	<i>CENPF</i>
2	<i>KIF11</i>	15	<i>TOP2A</i>
3	<i>MCM10</i>	16	<i>KIF20A</i>
4	<i>PRC1</i>	17	<i>KIAA0101</i>
5	<i>BUB1B</i>	18	<i>CDCA3</i>
6	<i>NUSAP1</i>	19	<i>ASF1B</i>
7	<i>C18orf24</i>	20	<i>CENPM</i>
8	<i>PLK1</i>	21	<i>TK1</i>
9	<i>CDKN3</i>	22	<i>PBK</i>
10	<i>RRM2</i>	23	<i>PTTG1</i>
11	<i>RAD51</i>	24	<i>DTL</i>
12	<i>RAD54L</i>	25	<i>KIF4A</i>
13	<i>CDC2</i>		

Table 15

Gene #	Gene Symbol	Gene #	Gene Symbol
1	<i>NUSAP1</i>	14	<i>CENPF</i>
2	<i>CDC2</i>	15	<i>CENPM</i>
3	<i>RRM2</i>	16	<i>KIAA0101</i>
4	<i>PTTG1</i>	17	<i>KIF11</i>
5	<i>PBK</i>	18	<i>KIF20A</i>
6	<i>PRC1</i>	19	<i>KIF4A</i>

7	<i>DTL</i>	20	<i>MCM10</i>
8	<i>ASF1B</i>	21	<i>PLK1</i>
9	<i>ASPM</i>	22	<i>RAD51</i>
10	<i>BUB1B</i>	23	<i>RAD54L</i>
11	<i>C18orf24</i>	24	<i>TK1</i>
12	<i>CDCA3</i>	25	<i>TOP2A</i>
13	<i>CDKN3</i>		

Table 16

Gene #	Gene Symbol	Gene #	Gene Symbol
1	<i>MCM10</i>	14	<i>PTTG1</i>
2	<i>ASPM</i>	15	<i>CDC2</i>
3	<i>CENPF</i>	16	<i>PLK1</i>
4	<i>TOP2A</i>	17	<i>C18orf24</i>
5	<i>NUSAP1</i>	18	<i>RRM2</i>
6	<i>CDKN3</i>	19	<i>CENPM</i>
7	<i>KIF11</i>	20	<i>RAD51</i>
8	<i>KIF20A</i>	21	<i>KIAA0101</i>
9	<i>BUB1B</i>	22	<i>CDCA3</i>
10	<i>RAD54L</i>	23	<i>PBK</i>
11	<i>TK1</i>	24	<i>ASF1B</i>
12	<i>DTL</i>	25	<i>KIF4A</i>
13	<i>PRC1</i>		

[0090] The rankings of each gene according to correlation to the mean (Tables 2, 3 & 5) and p-value (Tables 6 & 7) were used to derive two different combination rankings. Table 17 ranks the CCP genes of Table 10 according to the highest unweighted combination score calculated by the following formula: Combination score for each gene = $(1/(\text{correlation in Table 2})) + (1/(\text{correlation in Table 3})) + (1/(\text{correlation in Table 5})) + (1/(\text{p-value in Table 6})) + (1/(\text{p-value in Table 7}))$. Table 18 ranks the CCP genes of Table 10 according to the highest weighted combination score (which gives greater weight to p-value over correlation to the mean) calculated by the following formula: Combination score for each gene = $(2/(\text{correlation in Table 2})) + (3/(\text{correlation in Table 3})) + (5/(\text{correlation in Table 5})) + (7/(\text{p-value in Table 6})) + (10/(\text{p-value in Table 7}))$.

Table 17

Gene #	Gene Symbol	Gene #	Gene Symbol
1	<i>NUSAP1</i>	14	<i>KIF20A</i>

2	<i>MCM10</i>	15	<i>KIAA0101</i>
3	<i>ASPM</i>	16	<i>PLK1</i>
4	<i>CDC2</i>	17	<i>PBK</i>
5	<i>KIF11</i>	18	<i>C18orf24</i>
6	<i>CDKN3</i>	19	<i>RAD54L</i>
7	<i>CENPF</i>	20	<i>DTL</i>
8	<i>KIF4A</i>	21	<i>TK1</i>
9	<i>PRC1</i>	22	<i>RAD51</i>
10	<i>BUB1B</i>	23	<i>ASF1B</i>
11	<i>RRM2</i>	24	<i>CDCA3</i>
12	<i>TOP2A</i>	25	<i>CENPM</i>
13	<i>PTTG1</i>		

Table 18

Gene #	Gene Symbol	Gene #	Gene Symbol
1	<i>NUSAP1</i>	14	<i>KIAA0101</i>
2	<i>CDC2</i>	15	<i>PBK</i>
3	<i>KIF11</i>	16	<i>PLK1</i>
4	<i>ASPM</i>	17	<i>DTL</i>
5	<i>CDKN3</i>	18	<i>KIF4A</i>
6	<i>BUB1B</i>	19	<i>RAD51</i>
7	<i>PRC1</i>	20	<i>C18orf24</i>
8	<i>RRM2</i>	21	<i>ASF1B</i>
9	<i>CENPF</i>	22	<i>CDCA3</i>
10	<i>TOP2A</i>	23	<i>TK1</i>
11	<i>KIF20A</i>	24	<i>RAD54L</i>
12	<i>PTTG1</i>	25	<i>CENPM</i>
13	<i>MCM10</i>		

[0091] Analogous to Tables 2 to 7 and Tables 15 & 16 above, the CCP genes in Panel F of Table 9 were ranked according to independent predictive value (p-value) in the study reported as Example 3 below. These rankings are shown in Table 19 below.

Table 19

Gene #	Gene Symbol	Univariate p-value	Gene #	Gene Symbol	Univariate p-value
1	<i>C18orf24</i>	1.73E-05	17	<i>BUB1B</i>	2.54E-03
2	<i>KIF11</i>	5.63E-05	18	<i>CDCA8</i>	2.62E-03
3	<i>PTTG1</i>	6.13E-05	19	<i>CDC20</i>	4.23E-03
4	<i>PBK</i>	9.10E-05	20	<i>KIAA0101</i>	5.08E-03

5	<i>CENPF</i>	1.38E-04	21	<i>BIRC5</i>	6.89E-03
6	<i>RAD54L</i>	1.46E-04	22	<i>PRC1</i>	7.10E-03
7	<i>CEP55</i>	3.21E-04	23	<i>PLK1</i>	7.11E-03
8	<i>ORC6L</i>	4.58E-04	24	<i>MCM10</i>	9.37E-03
9	<i>RRM2</i>	4.69E-04	25	<i>TOP2A</i>	1.00E-02
10	<i>CDKN3</i>	4.89E-04	26	<i>CDC2</i>	1.08E-02
11	<i>DLGAP5</i>	5.60E-04	27	<i>TK1</i>	1.15E-02
12	<i>RAD51</i>	7.08E-04	28	<i>CDC43</i>	1.41E-02
13	<i>DTL</i>	7.88E-04	29	<i>NUSAP1</i>	2.48E-02
14	<i>KIF20A</i>	7.98E-04	30	<i>CENPM</i>	3.42E-02
15	<i>FOXMI</i>	1.25E-03	31	<i>ASF1B</i>	4.33E-02
16	<i>ASPM</i>	2.37E-03			

[0092] In CCG signatures the particular CCGs assayed is often not as important as the total number of CCGs. The number of CCGs assayed can vary depending on many factors, *e.g.*, technical constraints, cost considerations, the classification being made, the cancer being tested, the desired level of predictive power, etc. Increasing the number of CCGs assayed in a panel according to the invention is, as a general matter, advantageous because, *e.g.*, a larger pool of mRNAs to be assayed means less “noise” caused by outliers and less chance of an assay error throwing off the overall predictive power of the test. However, cost and other considerations will generally limit this number and finding the optimal number of CCGs for a signature is desirable.

[0093] It has been discovered that the predictive power of a CCG signature often ceases to increase significantly beyond a certain number of CCGs. In order to determine the optimal number of cell cycle genes for the signature, the predictive power of the mean was tested for randomly selected sets of from 1 to 30 of the CCGs in Panel C (FIG.1). This demonstrates, for some embodiments of the invention, a threshold number of CCGs in a panel (10, 15, or between 10 and 15) that provides significantly improved predictive power. In some embodiments even smaller panels of CCGs are sufficient to prognose disease outcome and/or predict therapy response/benefit (*e.g.*, “sub-panels” of Panel F in Tables 21 to 25). To evaluate how even smaller subsets of a larger CCG set (*i.e.*, smaller CCG subpanels) performed, the inventors compared how well the CCGs from Panel C predicted outcome as a function of the number of CCGs included in the signature (FIG.1). As shown in Table 20 below and FIG.1, small CCG signatures (*e.g.*, 2, 3, 4, 5, 6 CCGS, etc.) are significant predictors.

Table 20

# of CCGs	Mean of log10 (p-value)*
1	-3.579
2	-4.279
3	-5.049
4	-5.473
5	-5.877
6	-6.228

* For 1000 randomly drawn subsets, size 1 through 6, of CCGs.

[0094] Tables 21 to 25, submitted as part of this description, further illustrate this feature of the invention by showing the predictive power (both univariate and multivariate p-value) of numerous sub-panels chosen from Panel F. As can be seen, each 2-gene and 3-gene sub-panel chosen from Panel F is significantly predictive of lung cancer prognosis in the cohorts described in Examples 1-3. The same is true for all 4-gene, 5-gene and 6-gene sub-panels chosen from the top 10 genes in Panel F (*i.e.*, from the genes in Panel F ranked according to p-value as in Table 19). Thus, in each embodiment of the invention described in this document, there is a further embodiment in which the panel of genes (or the plurality of test genes, etc.) comprises a sub-panel of any of Tables 21 to 25. By way of non-limiting example, the invention provides a method of determining the prognosis of a patient having lung cancer or the likelihood of cancer recurrence in said patient, comprising: (1) obtaining a sample from said patient; (2) determining the expression levels of a panel of genes in said sample, wherein said panel comprises a sub-panel of Panel F chosen from any of Tables 21 to 25; (3) providing a test value by (i) weighting the determined expression of each of a plurality of test genes selected from said panel of genes with a predefined coefficient, and (ii) combining the weighted expression to provide said test value, wherein the genes of said sub-panel are weighted (*e.g.*, collectively) to contribute at least 25% of the test value; and (4) classifying said patient as having a poor or a good prognosis or an increased or not increased likelihood of cancer recurrence based at least in part on said test value.

[0095] In some embodiments, the optimal number of CCGs in a signature (n_o) can be found wherever the following is true

$$(P_{n+1} - P_n) < C_o,$$

wherein P is the predictive power (*i.e.*, P_n is the predictive power of a signature with n genes and P_{n+1} is the predictive power of a signature with n genes plus one) and C_o is some optimization constant. Predictive power can be defined in many ways known to those skilled in the art including, but not limited to, the signature's p-value. C_o can be chosen by the artisan based on

his or her specific constraints. For example, if cost is not a critical factor and extremely high levels of sensitivity and specificity are desired, C_O can be set very low such that only trivial increases in predictive power are disregarded. On the other hand, if cost is decisive and moderate levels of sensitivity and specificity are acceptable, C_O can be set higher such that only significant increases in predictive power warrant increasing the number of genes in the signature.

[0096] Alternatively, a graph of predictive power as a function of gene number may be plotted (as in FIG.1) and the second derivative of this plot taken. The point at which the second derivative decreases to some predetermined value (C_O') may be the optimal number of genes in the signature.

[0097] FIG.1 illustrates the empirical determination of optimal numbers of CCGs in CCG panels of the invention. Randomly selected subsets of the 31 CCGs in Panel F were tested as distinct CCG signatures and predictive power (*i.e.*, p-value) was determined for each. As FIG. 1 shows, p-values ceased to improve significantly between about 10 and about 15 CCGs, thus indicating that, in some embodiments, an optimal number of CCGs in a prognostic panel is from about 10 to about 15. Thus some embodiments of the invention provide a method of predicting prognosis (or likelihood of response to a particular treatment regimen) in a patient having lung cancer comprising determining the status of a panel of genes, wherein the panel comprises between about 10 and about 15 CCGs and increased expression of the CCGs indicates a poor prognosis (or an increased likelihood of response to the particular treatment, *e.g.*, treatment comprising chemotherapy). In some embodiments the panel comprises between about 10 and about 15 CCGs and the CCGs constitute at least 90% of the panel (or are weighted to contribute at least 75%). In other embodiments the panel comprises CCGs plus one or more additional markers that significantly increase the predictive power of the panel (*i.e.*, make the predictive power significantly better than if the panel consisted of only the CCGs). Any other combination of CCGs (including any of those listed in Table 1, 2, 3, 5, 6, 7, 8, 9, 10 or 11; Panel A, B, C, D, E, F, G, H, J or K; or “sub-panels” of Panel F in Tables 21 to 25) can be used to practice the invention.

[0098] In some embodiments the panel comprises at least 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40, 45, 50 or more CCGs. In some embodiments the panel comprises between 5 and 100 CCGs, between 7 and 40 CCGs, between 5 and 25 CCGs, between 10 and 20 CCGs, or between 10 and 15 CCGs. In some embodiments CCGs comprise at least a certain

proportion of the panel. Thus in some embodiments the panel comprises at least 25%, 30%, 40%, 50%, 60%, 70%, 75%, 80%, 85%, 90%, 95%, 96%, 97%, 98%, or 99% CCGs. In some embodiments the CCGs are any of the genes listed in Table 1, 2, 3, 5, 6, 7, 8, 9, 10 or 11; Panel A, B, C, D, E, F, G, H, J or K; or “sub-panels” of Panel F in Tables 21 to 25. In some embodiments the panel comprises at least 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40, 45, 50 or more genes in any of Table 1, 2, 3, 5, 6, 7, 8, 9, 10 or 11; Panel A, B, C, D, E, F, G, H, J or K; or “sub-panels” of Panel F in Tables 21 to 25. In some embodiments the panel comprises all of the genes in any of Table 1, 2, 3, 5, 6, 7, 8, 9, 10 or 11; Panel A, B, C, D, E, F, G, H, J or K; or “sub-panels” of Panel F in Tables 21 to 25.

[0099] As mentioned above, many of the CCGs of the invention have been analyzed to determine their correlation to the CCG mean and also to determine their relative predictive value within a panel (see Tables 2, 3, 5, 6, 7, 12, 13, 14, 15, 16, 17, 18 & 19). Thus in some embodiments the plurality of test genes comprises at least some number of CCGs (*e.g.*, at least 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40, 45, 50 or more CCGs) and this plurality of CCGs comprises the top 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 20, 25, 30, 35, 40 or more CCGs listed in Table 2, 3, 5, 6, 7, 12, 13, 14, 15, 16, 17, 18 or 19. In some embodiments the plurality of test genes comprises at least some number of CCGs (*e.g.*, at least 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40, 45, 50 or more CCGs) and this plurality of CCGs comprises at least 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, or 20 of the following genes: *ASPM*, *BIRC5*, *BUB1B*, *CCNB2*, *CDC2*, *CDC20*, *CDCA8*, *CDKN3*, *CENPF*, *DLGAP5*, *FOXM1*, *KIAA0101*, *KIF11*, *KIF2C*, *KIF4A*, *MCM10*, *NUSAP1*, *PRC1*, *RACGAP1*, and *TPX2*. In some embodiments the plurality of test genes comprises at least some number of CCGs (*e.g.*, at least 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40, 45, 50 or more CCGs) and this plurality of CCGs comprises any one, two, three, four, five, six, seven, eight, nine, or ten or all of gene numbers 1 & 2, 1 to 3, 1 to 4, 1 to 5, 1 to 6, 1 to 7, 1 to 8, 1 to 9, or 1 to 10 of any of Table 2, 3, 5, 6, 7, 12, 13, 14, 15, 16, 17, 18 or 19. In some embodiments the plurality of test genes comprises at least some number of CCGs (*e.g.*, at least 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40, 45, 50 or more CCGs) and this plurality of CCGs comprises any one, two, three, four, five, six, seven, eight, or nine or all of gene numbers 2 & 3, 2 to 4, 2 to 5, 2 to 6, 2 to 7, 2 to 8, 2 to 9, or 2 to 10 of any of Table 2, 3, 5, 6, 7, 12, 13, 14, 15, 16, 17, 18 or 19. In some embodiments the plurality of test genes comprises at least some number of CCGs (*e.g.*, at least 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40, 45, 50 or more CCGs) and this plurality of CCGs comprises any one, two, three, four, five, six, seven, or eight or all of gene numbers 3 & 4, 3 to 5, 3 to 6, 3 to 7, 3 to 8, 3 to 9, or 3 to 10

of any of Table 2, 3, 5, 6, 7, 12, 13, 14, 15, 16, 17, 18 or 19. In some embodiments the plurality of test genes comprises at least some number of CCGs (*e.g.*, at least 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40, 45, 50 or more CCGs) and this plurality of CCGs comprises any one, two, three, four, five, six, or seven or all of gene numbers 4 & 5, 4 to 6, 4 to 7, 4 to 8, 4 to 9, or 4 to 10 of any of Table 2, 3, 5, 6, 7, 12, 13, 14, 15, 16, 17, 18 or 19. In some embodiments the plurality of test genes comprises at least some number of CCGs (*e.g.*, at least 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40, 45, 50 or more CCGs) and this plurality of CCGs comprises any one, two, three, four, five, six, seven, eight, nine, 10, 11, 12, 13, 14, or 15 or all of gene numbers 1 & 2, 1 to 3, 1 to 4, 1 to 5, 1 to 6, 1 to 7, 1 to 8, 1 to 9, 1 to 10, 1 to 11, 1 to 12, 1 to 13, 1 to 14, or 1 to 15 of any of Table 2, 3, 5, 6, 7, 12, 13, 14, 15, 16, 17, 18 or 19.

[00100] In some embodiments the invention provides an method of determining a lung cancer patient's prognosis or the likelihood of the patient responding to a particular treatment comprising: (1) obtaining the measured expression levels of a plurality of genes comprising a plurality of CCGs (*e.g.*, genes in Table 1, 2, 3, 5, 6, 7, 8, 9, 10 or 11; Panel A, B, C, D, E, F, G, H, J or K; or "sub-panels" of Panel F in Tables 21 to 25) in a sample from the patient; (2) obtaining a clinical score for the patient comprising (or reflecting) one or more clinical parameters relevant to the patient's lung cancer (*e.g.*, age, gender, smoking, stage, treatment, tumor size, pleural invasion); (3) deriving a combined test value from the measured levels obtained in (1) and the clinical score obtained in (2); (4) comparing the combined test value to a combined reference value derived from measured expression levels of the plurality of genes and a clinical score comprising (or reflecting) the one or more clinical parameters in a reference population of patients; and (5)(a) correlating a combined test value greater than the combined reference value to a poor prognosis (or increased likelihood of response to a particular treatment) or (5)(b) correlating a combined test value equal to or less than the combined reference value to a good prognosis (or decreased likelihood of response to a particular treatment).

[00101] In some embodiments the combined score includes CCP score and any single parameter or combination of age, gender, smoking, stage, treatment, tumor size, and pleural invasion (which single or combination of clinical parameters can be termed the "clinical score" component of the combined score). CCP, age and tumor size can be a continuous numeric variable. Gender, smoking, treatment, and pleural invasion can be a binary numeric variable (*e.g.*, yes = X, no = Y). Tumor stage can be a numeric variable with a particular value assigned to any particular clinical stage (example shown below).

[00102] In some embodiments the combined score is calculated according to the following formula:

$$(1) \text{ Combined Score} = A * (\text{CCP score}) + B * (\text{clinical score})$$

[00103] In some embodiments the clinical score is the patient's score according to a clinical nomogram for lung cancer prognosis (or for predicting response to a particular treatment). In some embodiments the combined score is calculated according to the following modified version of Formula 1:

$$(2) \text{ Combined Score} = C * (A * (\text{CCP score}) + B * (\text{clinical score})) + D$$

wherein C and D can each be additional variables (e.g., expression of other genes) with their own coefficients, additional functions, or predetermined constants. In some such embodiments C = 20 and D = 15.

[00104] In some embodiments CCP score is the unweighted mean of C_T values for expression of the CCP genes being analyzed (e.g., any gene(s) in Table 1, 2, 3, 5, 6, 7, 8, 9, 10 or 11; Panel A, B, C, D, E, F, G, H, J or K; or "sub-panels" of Panel F in Tables 21 to 25), optionally normalized by the unweighted mean of the control genes so that higher values indicate higher expression (in some embodiments one unit is equivalent to a two-fold change in expression). In some embodiments the CCP score ranges from -8 to 8 or from -1.6 to 3.7.

[00105] In one particular embodiment, clinical score is represented by the numeric value assigned the patient's tumor stage as shown below:

IASLC 7th Edition Pathologic Stage		Numeric Stage
IA	=	1
IB	=	2
IIA	=	3
IIB	=	4

In one embodiment of the invention utilizing Formula 1 (or Formula 2 wherein C and D are each 0), A = 0.34 and B = 0.49. In another embodiment utilizing Formula 1 (or Formula 2 wherein C and D are each 0), A = 0.33 and B = 0.52. In one embodiment utilizing Formula 1 (or Formula 2 wherein C and D are each 0), A = 0.33 and B = 0.52 and the "clinical score" comprises (or consists of) pathologic stage as shown above. In one embodiment utilizing Formula 2, A = 0.33, B = 0.52, C = 20, D = 15 and the "clinical score" of B comprises (or consists of or consists essentially of) pathologic stage as shown above.

[00106] In some embodiments $A = 0.34$ & $B = 0.49$; $A = 0.95$, $B = 0.61$; $A = 0.57$ & $B = 0.39$; or $A = 0.58$ & $B = 0.41$. In some embodiments, A, B, C and/or D is within rounding of these values (e.g., A is between 0.945 and 0.954 or between 0.325 and 0.334, B is between 0.515 and 0.524, etc.). In some embodiments, A, B, C and/or D is within $\pm 1\%$, $\pm 2\%$, $\pm 3\%$, $\pm 4\%$, $\pm 5\%$, $\pm 10\%$, $\pm 15\%$, $\pm 20\%$, $\pm 25\%$, $\pm 30\%$, $\pm 35\%$, $\pm 40\%$, $\pm 45\%$, $\pm 50\%$, of these values (e.g., A is between 0.29 and 0.37, B is between 0.46 and 0.58, etc.). In some cases a formula may not have all of the specified coefficients (and thus not incorporate the corresponding variable(s)). In some embodiments A is between 0.9 and 1, 0.9 and 0.99, 0.9 and 0.95, 0.85 and 0.95, 0.86 and 0.94, 0.87 and 0.93, 0.88 and 0.92, 0.89 and 0.91, 0.85 and 0.9, 0.8 and 0.95, 0.8 and 0.9, 0.8 and 0.85, 0.75 and 0.99, 0.75 and 0.95, 0.75 and 0.9, 0.75 and 0.85, or between 0.75 and 0.8. In some embodiments B is between 0.40 and 1, 0.45 and 0.99, 0.45 and 0.95, 0.55 and 0.8, 0.55 and 0.7, 0.55 and 0.65, 0.59 and 0.63, or between 0.6 and 0.62.

[00107] In some embodiments A is between 0.1 and 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 0.2 and 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 0.3 and 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 0.4 and 0.5, 0.6, 0.7, 0.8, 0.9, 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 0.5 and 0.6, 0.7, 0.8, 0.9, 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 0.6 and 0.7, 0.8, 0.9, 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 0.7 and 0.8, 0.9, 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 0.8 and 0.9, 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 0.9 and 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 1 and 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 1.5 and 2, 2.5, 3, 3.5, 4, 4.5, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 2 and 2.5, 3, 3.5, 4, 4.5, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 2.5 and 3, 3.5, 4, 4.5, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 3 and 3.5, 4, 4.5, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 3.5 and 4, 4.5, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 4 and 4.5, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 4.5 and 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 5 and 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 6 and 7, 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 7 and 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 8 and 9, 10, 11, 12, 13, 14, 15, or 20; or between 9 and 10, 11, 12, 13, 14, 15, or 20; or between 10 and 11, 12, 13, 14, 15, or 20;

or between 11 and 12, 13, 14, 15, or 20; or between 12 and 13, 14, 15, or 20; or between 13 and 14, 15, or 20; or between 14 and 15, or 20; or between 15 and 20; B is between 0.1 and 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 0.2 and 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 0.3 and 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 0.4 and 0.5, 0.6, 0.7, 0.8, 0.9, 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 0.5 and 0.6, 0.7, 0.8, 0.9, 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 0.6 and 0.7, 0.8, 0.9, 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 0.7 and 0.8, 0.9, 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 0.8 and 0.9, 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 0.9 and 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 1 and 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 1.5 and 2, 2.5, 3, 3.5, 4, 4.5, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 2 and 2.5, 3, 3.5, 4, 4.5, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 2.5 and 3, 3.5, 4, 4.5, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 3 and 3.5, 4, 4.5, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 3.5 and 4, 4.5, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 4 and 4.5, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 4.5 and 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 5 and 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 6 and 7, 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 7 and 8, 9, 10, 11, 12, 13, 14, 15, or 20; or between 8 and 9, 10, 11, 12, 13, 14, 15, or 20; or between 9 and 10, 11, 12, 13, 14, 15, or 20; or between 10 and 11, 12, 13, 14, 15, or 20; or between 11 and 12, 13, 14, 15, or 20; or between 12 and 13, 14, 15, or 20; or between 13 and 14, 15, or 20; or between 14 and 15, or 20; or between 15 and 20. In some embodiments, A, B, and/or C is within rounding of any of these values (e.g., A is between 0.45 and 0.54, etc.).

[00108] The results of any analyses according to the invention will often be communicated to physicians, genetic counselors and/or patients (or other interested parties such as researchers) in a transmittable form that can be communicated or transmitted to any of the above parties. Such a form can vary and can be tangible or intangible. The results can be embodied in descriptive statements, diagrams, photographs, charts, images or any other visual forms. For example, graphs showing expression or activity level or sequence variation information for various genes can be used in explaining the results. Diagrams showing such information for additional target gene(s) are also useful in indicating some testing results. The

statements and visual forms can be recorded on a tangible medium such as papers, computer readable media such as floppy disks, compact disks, *etc.*, or on an intangible medium, *e.g.*, an electronic medium in the form of email or website on internet or intranet. In addition, results can also be recorded in a sound form and transmitted through any suitable medium, *e.g.*, analog or digital cable lines, fiber optic cables, *etc.*, via telephone, facsimile, wireless mobile phone, internet phone and the like.

[00109] Thus, the information and data on a test result can be produced anywhere in the world and transmitted to a different location. As an illustrative example, when an expression level, activity level, or sequencing (or genotyping) assay is conducted outside the United States, the information and data on a test result may be generated, cast in a transmittable form as described above, and then imported into the United States. Accordingly, the present invention also encompasses a method for producing a transmittable form of information on at least one of (a) expression level or (b) activity level for at least one patient sample. The method comprises the steps of (1) determining at least one of (a) or (b) above according to methods of the present invention; and (2) embodying the result of the determining step in a transmittable form. The transmittable form is a product of such a method.

[00110] Techniques for analyzing such expression, activity, and/or sequence data (indeed any data obtained according to the invention) will often be implemented using hardware, software or a combination thereof in one or more computer systems or other processing systems capable of effectuating such analysis.

[00111] Thus, the present invention further provides a system for determining gene expression in a tumor sample, comprising: (1) a sample analyzer for determining the expression levels of a panel of genes in a sample (*e.g.*, a tumor sample) including at least 2, 4, 6, 8 or 10 cell-cycle genes, wherein the sample analyzer contains the sample which is from a patient having lung cancer, or mRNA molecules from the patient sample or cDNA molecules from mRNA expressed from the panel of genes; (2) a first computer program for (a) receiving gene expression data on at least 4 test genes selected from the panel of genes, (b) weighting the determined expression of each of the test genes, and (c) combining the weighted expression to provide a test value, wherein at least 20%, 50%, at least 75% or at least 90% of the test genes are cell-cycle genes (or wherein the cell-cycle genes are weighted to contribute at least 50%, 60%, 70%, 80%, 90%, 95% or 100% of the test value); and (3) a second computer program for comparing the test value to one or more reference values each associated with (a) a

predetermined degree of risk of cancer recurrence or progression of cancer and/or (b) a predetermined degree of likelihood of response to a particular treatment regimen (e.g., treatment regimen comprising chemotherapy). In some embodiments, the system further comprises a display module displaying the comparison between the test value to the one or more reference values, or displaying a result of the comparing step.

[00112] In some embodiments, the amount of RNA transcribed from the panel of genes including test genes is measured in the sample. In addition, the amount of RNA of one or more housekeeping genes in the sample is also measured, and used to normalize or calibrate the expression of the test genes, as described above.

[00113] In some embodiments, the plurality of test genes includes at least 2, 3 or 4 cell-cycle genes, which constitute at least 50%, 75% or 80% of the plurality of test genes, and preferably 100% of the plurality of test genes. In some embodiments, the plurality of test genes includes at least 5, 6 or 7, or at least 8 cell-cycle genes, which constitute at least 20%, 25%, 30%, 40%, 50%, 60%, 70%, 75%, 80% or 90% of the plurality of test genes, and preferably 100% of the plurality of test genes.

[00114] In some other embodiments, the plurality of test genes includes at least 8, 10, 12, 15, 20, 25 or 30 cell-cycle genes, which constitute at least 20%, 25%, 30%, 40%, 50%, 60%, 70%, 75%, 80% or 90% of the plurality of test genes, and preferably 100% of the plurality of test genes.

[00115] The sample analyzer can be any instrument useful in determining gene expression, including, *e.g.*, a sequencing machine, a real-time PCR machine, and a microarray instrument.

[00116] The computer-based analysis function can be implemented in any suitable language and/or browsers. For example, it may be implemented with C language and preferably using object-oriented high-level programming languages such as Visual Basic, SmallTalk, C++, and the like. The application can be written to suit environments such as the Microsoft WindowsTM environment including WindowsTM 98, WindowsTM 2000, WindowsTM NT, and the like. In addition, the application can also be written for the MacIntoshTM, SUNTM, UNIX or LINUX environment. In addition, the functional steps can also be implemented using a universal or platform-independent programming language. Examples of such multi-platform programming languages include, but are not limited to, hypertext markup language (HTML), JAVATM, JavaScriptTM, Flash programming language, common gateway interface/structured

query language (CGI/SQL), practical extraction report language (PERL), AppleScript™ and other system script languages, programming language/structured query language (PL/SQL), and the like. Java™- or JavaScript™-enabled browsers such as HotJava™, Microsoft™ Explorer™, or Netscape™ can be used. When active content web pages are used, they may include Java™ applets or ActiveX™ controls or other active content technologies.

[00117] The analysis function can also be embodied in computer program products and used in the systems described above or other computer- or internet-based systems. Accordingly, another aspect of the present invention relates to a computer program product comprising a computer-usable medium having computer-readable program codes or instructions embodied thereon for enabling a processor to carry out gene status analysis. These computer program instructions may be loaded onto a computer or other programmable apparatus to produce a machine, such that the instructions which execute on the computer or other programmable apparatus create means for implementing the functions or steps described above. These computer program instructions may also be stored in a computer-readable memory or medium that can direct a computer or other programmable apparatus to function in a particular manner, such that the instructions stored in the computer-readable memory or medium produce an article of manufacture including instruction means which implement the analysis. The computer program instructions may also be loaded onto a computer or other programmable apparatus to cause a series of operational steps to be performed on the computer or other programmable apparatus to produce a computer implemented process such that the instructions which execute on the computer or other programmable apparatus provide steps for implementing the functions or steps described above.

[00118] Thus one aspect of the present invention provides a system for determining whether a patient has increased likelihood of response to a particular treatment regimen. Generally speaking, the system comprises (1) computer program for receiving, storing, and/or retrieving a patient's CCG status data (*e.g.*, expression level, activity level, variants) and optionally clinical parameter data (*e.g.*, clinical stage); (2) computer program for querying this patient data; (3) computer program for concluding whether there is an increased likelihood of recurrence based on this patient data; and optionally (4) computer program for outputting/displaying this conclusion. In some embodiments this means for outputting the conclusion may comprise a computer program for informing a health care professional of the conclusion.

[00119] One example of such a computer system is the computer system [600] illustrated in FIG.6. Computer system [600] may include at least one input module [630] for entering patient data into the computer system [600]. The computer system [600] may include at least one output module [624] for indicating whether a patient has an increased or decreased likelihood of response and/or indicating suggested treatments determined by the computer system [600]. Computer system [600] may include at least one memory module [606] in communication with the at least one input module [630] and the at least one output module [624].

[00120] The at least one memory module [606] may include, *e.g.*, a removable storage drive [608], which can be in various forms, including but not limited to, a magnetic tape drive, a floppy disk drive, a VCD drive, a DVD drive, an optical disk drive, *etc.* The removable storage drive [608] may be compatible with a removable storage unit [610] such that it can read from and/or write to the removable storage unit [610]. Removable storage unit [610] may include a computer usable storage medium having stored therein computer-readable program codes or instructions and/or computer readable data. For example, removable storage unit [610] may store patient data. Example of removable storage unit [610] are well known in the art, including, but not limited to, floppy disks, magnetic tapes, optical disks, and the like. The at least one memory module [606] may also include a hard disk drive [612], which can be used to store computer readable program codes or instructions, and/or computer readable data.

[00121] In addition, as shown in Fig.1, the at least one memory module [606] may further include an interface [614] and a removable storage unit [616] that is compatible with interface [614] such that software, computer readable codes or instructions can be transferred from the removable storage unit [616] into computer system [600]. Examples of interface [614] and removable storage unit [616] pairs include, *e.g.*, removable memory chips (*e.g.*, EPROMs or PROMs) and sockets associated therewith, program cartridges and cartridge interface, and the like. Computer system [600] may also include a secondary memory module [618], such as random access memory (RAM).

[00122] Computer system [600] may include at least one processor module [602]. It should be understood that the at least one processor module [602] may consist of any number of devices. The at least one processor module [602] may include a data processing device, such as a microprocessor or microcontroller or a central processing unit. The at least one processor module [602] may include another logic device such as a DMA (Direct Memory Access)

processor, an integrated communication processor device, a custom VLSI (Very Large Scale Integration) device or an ASIC (Application Specific Integrated Circuit) device. In addition, the at least one processor module [602] may include any other type of analog or digital circuitry that is designed to perform the processing functions described herein.

[00123] As shown in FIG.6, in computer system [600], the at least one memory module [606], the at least one processor module [602], and secondary memory module [618] are all operably linked together through communication infrastructure [620], which may be a communications bus, system board, cross-bar, *etc.*). Through the communication infrastructure [620], computer program codes or instructions or computer readable data can be transferred and exchanged. Input interface [626] may operably connect the at least one input module [626] to the communication infrastructure [620]. Likewise, output interface [622] may operably connect the at least one output module [624] to the communication infrastructure [620].

[00124] The at least one input module [630] may include, for example, a keyboard, mouse, touch screen, scanner, and other input devices known in the art. The at least one output module [624] may include, for example, a display screen, such as a computer monitor, TV monitor, or the touch screen of the at least one input module [630]; a printer; and audio speakers. Computer system [600] may also include, modems, communication ports, network cards such as Ethernet cards, and newly developed devices for accessing intranets or the internet.

[00125] The at least one memory module [606] may be configured for storing patient data entered via the at least one input module [630] and processed via the at least one processor module [602]. Patient data relevant to the present invention may include expression level, activity level, copy number and/or sequence information for a CCG. Patient data relevant to the present invention may also include clinical parameters relevant to the patient's disease (e.g., age, tumor size, node status, tumor stage). Any other patient data a physician might find useful in making treatment decisions/recommendations may also be entered into the system, including but not limited to age, gender, and race/ethnicity and lifestyle data such as diet information. Other possible types of patient data include symptoms currently or previously experienced, patient's history of illnesses, medications, and medical procedures.

[00126] The at least one memory module [606] may include a computer-implemented method stored therein. The at least one processor module [602] may be used to execute software or computer-readable instruction codes of the computer-implemented method.

The computer-implemented method may be configured to, based upon the patient data, indicate whether the patient has an increased likelihood of recurrence, progression or response to any particular treatment, generate a list of possible treatments, etc.

[00127] In certain embodiments, the computer-implemented method may be configured to identify a patient as having or not having an increased likelihood of recurrence or progression. For example, the computer-implemented method may be configured to inform a physician that a particular patient has an increased likelihood of recurrence. Alternatively or additionally, the computer-implemented method may be configured to actually suggest a particular course of treatment based on the answers to/results for various queries.

[00128] FIG.7 illustrates one embodiment of a computer-implemented method [700] of the invention that may be implemented with the computer system [600] of the invention. The method [700] begins with one of three queries ([710], [711]), either sequentially or substantially simultaneously. If the answer to/result for **any** of these queries is “Yes” [720], the method concludes [730] that the patient has an increased likelihood of recurrence or of response to a particular treatment regimen (e.g., treatment comprising chemotherapy). If the answer to/result for **all** of these queries is “No” [721], the method concludes [731] that the patient does not have an increased likelihood of recurrence or of response to a particular treatment regimen (e.g., treatment comprising chemotherapy). The method [700] may then proceed with more queries, make a particular treatment recommendation ([740], [741]), or simply end.

[00129] When the queries are performed sequentially, they may be made in the order suggested by FIG.7 or in any other order. Whether subsequent queries are made can also be dependent on the results/answers for preceding queries. In some embodiments of the method illustrated in FIG.7, for example, the method asks about clinical parameters [711] first and, if the patient has one or more clinical parameters identifying the patient as at increased likelihood of recurrence or response to a particular treatment then the method concludes such [730] or optionally confirms by querying CCG status, while if the patient has no such clinical parameters then the method proceeds to ask about CCG status [710]. As mentioned above, the preceding order of queries may be modified. In some embodiments an answer of “yes” to one query (e.g., [710]) prompts one or more of the remaining queries to confirm that the patient has increased risk of recurrence.

[00130] In some embodiments, the computer-implemented method of the invention **[700]** is open-ended. In other words, the apparent first step **[710 and/or 711]** in **FIG.7** may actually form part of a larger process and, within this larger process, need not be the first step/query. Additional steps may also be added onto the core methods discussed above. These additional steps include, but are not limited to, informing a health care professional (or the patient itself) of the conclusion reached; combining the conclusion reached by the illustrated method **[700]** with other facts or conclusions to reach some additional or refined conclusion regarding the patient's diagnosis, prognosis, treatment, etc.; making a recommendation for treatment (*e.g.*, "patient should/should not undergo adjuvant chemotherapy"); additional queries about additional biomarkers, clinical parameters (*e.g.*, age, tumor size, node status, tumor stage), or other useful patient information (*e.g.*, age at diagnosis, general patient health, etc.).

[00131] Regarding the above computer-implemented method **[700]**, the answers to the queries may be determined by the method instituting a search of patient data for the answer. For example, to answer the respective queries **[710, 711]**, patient data may be searched for CCG status (*e.g.*, CCG expression level data) and/or clinical parameters (*e.g.*, tumor stage, nomogram score, etc.). If such a comparison has not already been performed, the method may compare these data to some reference in order to determine if the patient has an abnormal (*e.g.*, elevated, low, negative) status. Additionally or alternatively, the method may present one or more of the queries **[710, 711]** to a user (*e.g.*, a physician) of the computer system **[100]**. For example, the questions **[710, 711]** may be presented via an output module **[624]**. The user may then answer "Yes" or "No" or provide some other value (*e.g.*, numerical or qualitative value incorporating or representing CCG status) via an input module **[630]**. The method may then proceed based upon the answer received. Likewise, the conclusions **[730, 731]** may be presented to a user of the computer-implemented method via an output module **[624]**.

[00132] Thus in some embodiments the invention provides a method comprising: accessing information on a patient's CCG status stored in a computer-readable medium; querying this information to determine whether a sample obtained from the patient shows increased expression of a plurality of test genes comprising at least 2 CCGs (*e.g.*, a test value incorporating or representing the expression of this plurality of test genes that is weighted such that CCGs contribute at least 50% to the test value, such test value being higher than some reference value); outputting [or displaying] the quantitative or qualitative (*e.g.*, "increased") likelihood that the patient will respond to a particular treatment regimen. As used herein in the

context of computer-implemented embodiments of the invention, “displaying” means communicating any information by any sensory means. Examples include, but are not limited to, visual displays, *e.g.*, on a computer screen or on a sheet of paper printed at the command of the computer, and auditory displays, *e.g.*, computer generated or recorded auditory expression of a patient’s genotype.

[00133] The practice of the present invention may also employ conventional biology methods, software and systems. Computer software products of the invention typically include computer readable media having computer-executable instructions for performing the logic steps of the method of the invention. Suitable computer readable medium include floppy disk, CD-ROM/DVD/DVD-ROM, hard-disk drive, flash memory, ROM/RAM, magnetic tapes and etc. Basic computational biology methods are described in, for example, Setubal *et al.*, INTRODUCTION TO COMPUTATIONAL BIOLOGY METHODS (PWS Publishing Company, Boston, 1997); Salzberg *et al.* (Ed.), COMPUTATIONAL METHODS IN MOLECULAR BIOLOGY, (Elsevier, Amsterdam, 1998); Rashidi & Buehler, BIOINFORMATICS BASICS: APPLICATION IN BIOLOGICAL SCIENCE AND MEDICINE (CRC Press, London, 2000); and Ouelette & Bzevanis, BIOINFORMATICS: A PRACTICAL GUIDE FOR ANALYSIS OF GENE AND PROTEINS (Wiley & Sons, Inc., 2nd ed., 2001); *see also*, U.S. Pat. No. 6,420,108.

[00134] The present invention may also make use of various computer program products and software for a variety of purposes, such as probe design, management of data, analysis, and instrument operation. *See* U.S. Pat. Nos. 5,593,839; 5,795,716; 5,733,729; 5,974,164; 6,066,454; 6,090,555; 6,185,561; 6,188,783; 6,223,127; 6,229,911 and 6,308,170. Additionally, the present invention may have embodiments that include methods for providing genetic information over networks such as the Internet as shown in U.S. Ser. Nos. 10/197,621 (U.S. Pub. No. 20030097222); 10/063,559 (U.S. Pub. No. 20020183936), 10/065,856 (U.S. Pub. No. 20030100995); 10/065,868 (U.S. Pub. No. 20030120432); 10/423,403 (U.S. Pub. No. 20040049354).

[00135] Techniques for analyzing such expression, activity, and/or sequence data (indeed any data obtained according to the invention) will often be implemented using hardware, software or a combination thereof in one or more computer systems or other processing systems capable of effectuating such analysis.

[00136] Thus one aspect of the present invention provides systems related to the above methods of the invention. In one embodiment the invention provides a system for

determining a patient's prognosis and/or whether a patient will respond to a particular treatment regimen, comprising:

- (1) a sample analyzer for determining the expression levels in a sample of a plurality of test genes including at least 2, 3, 4, 5, 6, 7, 8, 9, 10 or more CCGs (e.g., genes in Table 1, 2, 3, 5, 6, 7, 8, 9, 10 or 11; Panel A, B, C, D, E, F, G, H, J or K; or "sub-panels" of Panel F in Tables 21 to 25), wherein the sample analyzer contains the sample, RNA from the sample and expressed from the panel of genes, or DNA synthesized from said RNA;
- (2) a first computer program for
 - (a) receiving gene expression data on said plurality of test genes,
 - (b) weighting the determined expression of each of the test genes with a predefined coefficient, and
 - (c) combining the weighted expression to provide a test value, wherein the combined weight given to said at least 2, 3, 4, 5, 6, 7, 8, 9, 10 or more CCGs is at least 40% (or 50%, 60%, 70%, 80%, 90%, 95% or 100%) of the total weight given to the expression of all of said plurality of test genes; and
- (3) a second computer program for comparing the test value to one or more reference values each associated with a predetermined likelihood of recurrence or progression or a predetermined likelihood of response to a particular treatment regimen.

In some embodiments at least 20%, 50%, 75%, or 90% of said plurality of test genes are CCGs. In some embodiments the sample analyzer contains reagents for determining the expression levels in the sample of said panel of genes including at least 2, 3, 4, 5, 6, 7, 8, 9, 10 or more CCGs. In some embodiments the sample analyzer contains CCG-specific reagents as described below.

[00137] In another embodiment the invention provides a system for determining gene expression in a sample (e.g., tumor sample), comprising: (1) a sample analyzer for determining the expression levels of a panel of genes in a sample including at least 2, 3, 4, 5, 6, 7, 8, 9, 10 or more CCGs, wherein the sample analyzer contains the sample which is from a patient having lung cancer, RNA from the sample and expressed from the panel of genes, or DNA synthesized from said RNA; (2) a first computer program for (a) receiving gene expression data on at least 2, 3, 4, 5, 6, 7, 8, 9, 10 or more test genes selected from the panel of genes, (b) weighting the determined expression of each of the test genes with a predefined coefficient, and (c) combining the weighted expression to provide a test value, wherein the

combined weight given to said at least 2, 3, 4, 5, 6, 7, 8, 9, 10 or more CCGs is at least 40% (or 50%, 60%, 70%, 80%, 90%, 95% or 100%) of the total weight given to the expression of all of said plurality of test genes; and (3) a second computer program for comparing the test value to one or more reference values each associated with a predetermined degree of risk of cancer recurrence or progression of the lung cancer. In some embodiments at least 20%, 50%, 75%, or 90% of said plurality of test genes are CCGs. In some embodiments the system comprises a computer program for determining the patient's prognosis and/or determining (including quantifying) the patient's degree of risk of cancer recurrence or progression based at least in part on the comparison of the test value with said one or more reference values.

[00138] In some embodiments, the system further comprises a display module displaying the comparison between the test value and the one or more reference values, or displaying a result of the comparing step, or displaying the patient's prognosis and/or degree of risk of cancer recurrence or progression.

[00139] In a preferred embodiment, the amount of RNA transcribed from the panel of genes including test genes (and/or DNA reverse transcribed therefrom) is measured in the sample. In addition, the amount of RNA of one or more housekeeping genes in the sample (and/or DNA reverse transcribed therefrom) is also measured, and used to normalize or calibrate the expression of the test genes, as described above.

[00140] In some embodiments, the plurality of test genes includes at least 2, 3 or 4 CCGs, which constitute at least 20%, 25%, 30%, 40%, 50%, 60%, 70%, 75%, 80% or 90% of the plurality of test genes, and preferably 100% of the plurality of test genes. In some embodiments, the plurality of test genes includes at least 5, 6 or 7, or at least 8 CCGs, which constitute at least 20%, 25%, 30%, 40%, 50%, 60%, 70%, 75%, 80% or 90% of the plurality of test genes, and preferably 100% of the plurality of test genes. Thus in some embodiments the plurality of test genes comprises at least some number of CCGs (*e.g.*, at least 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40, 45, 50 or more CCGs) and this plurality of CCGs comprises the top 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 20, 25, 30, 35, 40 or more CCGs listed in Table 2, 3, 5, 6, 7, 12, 13, 14, 15, 16, 17, 18 or 19. In some embodiments the plurality of test genes comprises at least some number of CCGs (*e.g.*, at least 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40, 45, 50 or more CCGs) and this plurality of CCGs comprises at least 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, or 20 of the following genes: *ASPM*, *BIRC5*, *BUB1B*, *CCNB2*, *CDC2*, *CDC20*, *CDCA8*, *CDKN3*, *CENPF*, *DLGAP5*, *FOXMI*, *KIAA0101*, *KIF11*, *KIF2C*, *KIF4A*, *MCM10*, *NUSAP1*, *PRCI*, *RACGAP1*, and *TPX2*. In some embodiments the plurality of test genes comprises at

least some number of CCGs (*e.g.*, at least 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40, 45, 50 or more CCGs) and this plurality of CCGs comprises any one, two, three, four, five, six, seven, eight, nine, or ten or all of gene numbers 1 & 2, 1 to 3, 1 to 4, 1 to 5, 1 to 6, 1 to 7, 1 to 8, 1 to 9, or 1 to 10 of any of Table 2, 3, 5, 6, 7, 12, 13, 14, 15, 16, 17, 18 or 19. In some embodiments the plurality of test genes comprises at least some number of CCGs (*e.g.*, at least 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40, 45, 50 or more CCGs) and this plurality of CCGs comprises any one, two, three, four, five, six, seven, eight, or nine or all of gene numbers 2 & 3, 2 to 4, 2 to 5, 2 to 6, 2 to 7, 2 to 8, 2 to 9, or 2 to 10 of any of Table 2, 3, 5, 6, 7, 12, 13, 14, 15, 16, 17, 18 or 19. In some embodiments the plurality of test genes comprises at least some number of CCGs (*e.g.*, at least 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40, 45, 50 or more CCGs) and this plurality of CCGs comprises any one, two, three, four, five, six, seven, or eight or all of gene numbers 3 & 4, 3 to 5, 3 to 6, 3 to 7, 3 to 8, 3 to 9, or 3 to 10 of any of Table 2, 3, 5, 6, 7, 12, 13, 14, 15, 16, 17, 18 or 19. In some embodiments the plurality of test genes comprises at least some number of CCGs (*e.g.*, at least 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40, 45, 50 or more CCGs) and this plurality of CCGs comprises any one, two, three, four, five, six, or seven or all of gene numbers 4 & 5, 4 to 6, 4 to 7, 4 to 8, 4 to 9, or 4 to 10 of any of Table 2, 3, 5, 6, 7, 12, 13, 14, 15, 16, 17, 18 or 19. In some embodiments the plurality of test genes comprises at least some number of CCGs (*e.g.*, at least 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40, 45, 50 or more CCGs) and this plurality of CCGs comprises any one, two, three, four, five, six, seven, eight, nine, 10, 11, 12, 13, 14, or 15 or all of gene numbers 1 & 2, 1 to 3, 1 to 4, 1 to 5, 1 to 6, 1 to 7, 1 to 8, 1 to 9, 1 to 10, 1 to 11, 1 to 12, 1 to 13, 1 to 14, or 1 to 15 of any of Table 2, 3, 5, 6, 7, 12, 13, 14, 15, 16, 17, 18 or 19.

[00141] In some other embodiments, the plurality of test genes includes at least 8, 10, 12, 15, 20, 25 or 30 CCGs, which constitute at least 20%, 25%, 30%, 40%, 50%, 60%, 70%, 75%, 80% or 90% of the plurality of test genes, and preferably 100% of the plurality of test genes.

[00142] The sample analyzer can be any instrument useful in determining gene expression, including, *e.g.*, a sequencing machine (*e.g.*, Illumina HiSeqTM, Ion Torrent PGM, ABI SOLiDTM sequencer, PacBio RS, Helicos HeliscopeTM, etc.), a real-time PCR machine (*e.g.*, ABI 7900, Fluidigm BioMarkTM, etc.), a microarray instrument, etc.

[00143] In one aspect, the present invention provides methods of treating a cancer patient comprising obtaining CCG status information (*e.g.*, the genes in Table 1, 2, 3, 5, 6, 7, 8,

9, 10 or 11; Panel A, B, C, D, E, F, G, H, J or K; or “sub-panels” of Panel F in Tables 21 to 25), and recommending, prescribing or administering a treatment for the cancer patient based on the CCG status. For example, the invention provides a method of treating a cancer patient comprising:

- (1) determining the expression of a plurality of test genes, wherein said plurality of test genes comprises at least 4 (or 5, 6, 7, 8, 9, 10, 15, 20, 30 or more) CCGs;
- (2) based at least in part on the determination in step (1), recommending, prescribing or administering either
 - (a) a treatment regimen comprising chemotherapy (e.g., adjuvant chemotherapy) if the patient has increased expression of the plurality of test genes (e.g., and CCGs are weighted to contribute at least 50% to the determination of increased expression of the plurality of test genes), or
 - (b) a treatment regimen not comprising chemotherapy if the patient does not have increased expression of the plurality of test genes (e.g., and CCGs are weighted to contribute at least 50% to the determination of increased expression of the plurality of test genes).

[00144] In one aspect, the invention provides compositions for use in the above methods. Such compositions include, but are not limited to, nucleic acid probes hybridizing to a CCG, including but not limited to a CCG listed in any of Table 1, 2, 3, 5, 6, 7, 8, 9, 10 or 11; Panel A, B, C, D, E, F, G, H, J or K; or “sub-panels” of Panel F in Tables 21 to 25 (or to any nucleic acids encoded thereby or complementary thereto); nucleic acid primers and primer pairs suitable for selectively amplifying all or a portion of such a CCG or any nucleic acids encoded thereby; antibodies binding immunologically to a polypeptide encoded by such a CCG; probe sets comprising a plurality of said nucleic acid probes, nucleic acid primers, antibodies, and/or polypeptides; microarrays comprising any of these; kits comprising any of these; *etc.* In some aspects, the invention provides computer methods, systems, software and/or modules for use in the above methods.

[00145] In some embodiments the invention provides a probe comprising an isolated oligonucleotide capable of selectively hybridizing to at least 2, 3, 4, 5, 6, 7, 8, 9, 10 or more of the genes in Table 1, 2, 3, 5, 6, 7, 8, 9, 10 or 11; Panel A, B, C, D, E, F, G, H, J or K; or “sub-panels” of Panel F in Tables 21 to 25. The terms “probe” and “oligonucleotide” (also “oligo”), when used in the context of nucleic acids, interchangeably refer to a relatively short nucleic acid fragment or sequence. The invention also provides primers useful in the methods

of the invention. “Primers” are probes capable, under the right conditions and with the right companion reagents, of selectively amplifying a target nucleic acid (*e.g.*, a target gene). In the context of nucleic acids, “probe” is used herein to encompass “primer” since primers can generally also serve as probes.

[00146] The probe can generally be of any suitable size/length. In some embodiments the probe has a length from about 8 to 200, 15 to 150, 15 to 100, 15 to 75, 15 to 60, or 20 to 55 bases in length. They can be labeled with detectable markers with any suitable detection marker including but not limited to, radioactive isotopes, fluorophores, biotin, enzymes (*e.g.*, alkaline phosphatase), enzyme substrates, ligands and antibodies, etc. See Jablonski *et al.*, NUCLEIC ACIDS RES. (1986) 14:6115-6128; Nguyen *et al.*, BIOTECHNIQUES (1992) 13:116-123; Rigby *et al.*, J. MOL. BIOL. (1977) 113:237-251. Indeed, probes may be modified in any conventional manner for various molecular biological applications. Techniques for producing and using such oligonucleotide probes are conventional in the art.

[00147] Probes according to the invention can be used in the hybridization/ amplification/ detection techniques discussed above. Thus, some embodiments of the invention comprise probe sets suitable for use in a microarray in detecting, amplifying and/or quantitating a plurality of CCGs. In some embodiments the probe sets have a certain proportion of their probes directed to CCGs—*e.g.*, a probe set consisting of 10%, 20%, 30%, 40%, 50%, 55%, 60%, 65%, 70%, 75%, 80%, 85%, 90%, 95%, 96%, 97%, 98%, 99%, or 100% probes specific for CCGs. In some embodiments the probe set comprises probes directed to at least 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 40, 45, 50, 60, 70, 80, 90, 100, 125, 150, 175, 200, 250, 300, 350, 400, 450, 500, 600, 700, or 800 or more, or all, of the genes in Table 1, 2, 3, 5, 6, 7, 8, 9, 10 or 11; Panel A, B, C, D, E, F, G, H, J or K; or “sub-panels” of Panel F in Tables 21 to 25. Such probe sets can be incorporated into high-density arrays comprising 5,000, 10,000, 20,000, 50,000, 100,000, 200,000, 300,000, 400,000, 500,000, 600,000, 700,000, 800,000, 900,000, or 1,000,000 or more different probes. In other embodiments the probe sets comprise primers (*e.g.*, primer pairs) for amplifying nucleic acids comprising at least a portion of one or more of the CCGs in Table 1, 2, 3, 5, 6, 7, 8, 9, 10 or 11; Panel A, B, C, D, E, F, G, H, J or K; or “sub-panels” of Panel F in Tables 21 to 25.

[00148] In another aspect of the present invention, a kit is provided for practicing the prognosis of the present invention. The kit may include a carrier for the various

components of the kit. The carrier can be a container or support, in the form of, *e.g.*, bag, box, tube, rack, and is optionally compartmentalized. The carrier may define an enclosed confinement for safety purposes during shipment and storage. The kit includes various components useful in determining the status of one or more CCGs and one or more housekeeping gene markers, using the above-discussed detection techniques. For example, the kit may include oligonucleotides specifically hybridizing under high stringency to mRNA or cDNA of the genes in Table 1, 2, 3, 5, 6, 7, 8, 9, 10 or 11; Panel A, B, C, D, E, F, G, H, J or K; or “sub-panels” of Panel F in Tables 21 to 25. Such oligonucleotides can be used as PCR primers in RT-PCR reactions, or hybridization probes. In some embodiments the kit comprises reagents (*e.g.*, probes, primers, and or antibodies) for determining the expression level of a panel of genes, where said panel comprises at least 25%, 30%, 40%, 50%, 60%, 75%, 80%, 90%, 95%, 99%, or 100% CCGs (*e.g.*, CCGs in Table 1, 2, 3, 5, 6, 7, 8, 9, 10 or 11; Panel A, B, C, D, E, F, G, H, J or K; or “sub-panels” of Panel F in Tables 21 to 25). In some embodiments the kit consists of reagents (*e.g.*, probes, primers, and or antibodies) for determining the expression level of no more than 2500 genes, wherein at least 5, 10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100, 120, 150, 200, 250, or more of these genes are CCGs (*e.g.*, CCGs in Table 1, 2, 3, 5, 6, 7, 8, 9, 10 or 11; Panel A, B, C, D, E, F, G, H, J or K; or “sub-panels” of Panel F in Tables 21 to 25).

[00149] The oligonucleotides in the detection kit can be labeled with any suitable detection marker including but not limited to, radioactive isotopes, fluorophores, biotin, enzymes (*e.g.*, alkaline phosphatase), enzyme substrates, ligands and antibodies, etc. *See* Jablonski *et al.*, *Nucleic Acids Res.*, 14:6115-6128 (1986); Nguyen *et al.*, *Biotechniques*, 13:116-123 (1992); Rigby *et al.*, *J. Mol. Biol.*, 113:237-251 (1977). Alternatively, the oligonucleotides included in the kit are not labeled, and instead, one or more markers are provided in the kit so that users may label the oligonucleotides at the time of use.

[00150] In another embodiment of the invention, the detection kit contains one or more antibodies selectively immunoreactive with one or more proteins encoded by one or more CCGs or optionally any additional markers. Examples include antibodies that bind immunologically to a protein encoded by a gene in Table 1, 2, 3, 5, 6, 7, 8, 9, 10 or 11; Panel A, B, C, D, E, F, G, H, J or K; or “sub-panels” of Panel F in Tables 21 to 25. Methods for producing and using such antibodies are well-known in the art.

[00151] Various other components useful in the detection techniques may also be included in the detection kit of this invention. Examples of such components include, but are not limited to, Taq polymerase, deoxyribonucleotides, dideoxyribonucleotides, other primers suitable for the amplification of a target DNA sequence, RNase A, and the like. In addition, the detection kit preferably includes instructions on using the kit for practice the prognosis method of the present invention using human samples. In one embodiment of the invention the CCG score is calculated from RNA expression of 31 CCGs normalized by 15 housekeeper genes (HK). The relative numbers of CCGs and HK genes are optimized in order to minimize the variance of the CCG score. The CCG score is the unweighted mean of CT values for CCG expression, normalized by the unweighted mean of the HK genes so that higher values indicate higher expression. In some embodiments, one unit is equivalent to a two-fold change in expression. In some embodiments, the CCG scores are centered by the mean value, determined in a training set.

[00152] In some embodiments, a dilution experiment is performed on commercial prostate samples to estimate the measurement error of the CCG score ($se = 0.10$) and the effect of missing values. In some embodiments, the CCG score may remain stable as concentration decreased to the point of 10 failures out of a total 31 CCGs. In some embodiments, samples with more than 9 missing values are not assigned a CCG score.

[00153] In some embodiments, samples may be obtained from an FFPE sample block. In some embodiments, 5 μ m sections may be cut from the sample block. In some embodiments sections may be stained with haematoxylin and eosin (H&E). In some embodiments, tumor areas may be marked by a pathologist. In some embodiments 10 μ m sections are cut adjacent to the H&E stained sections. In some embodiments tumor areas on the unstained sections are identified by alignment with the marked areas on the H&E stain. In some embodiments tumor areas are macro-dissected manually. In some embodiments, samples are deparaffinized by xylene extractions followed by washes with ethanol. In some embodiments samples are treated overnight with proteinase K. In some embodiments samples are subjected to RNA extraction. In some embodiments, RNA extraction is performed using the Qiagen miRNAeasy kit. In some embodiments RNA is treated with DNASE I to remove potential genomic DNA contamination. In some embodiments, RNA is converted to cDNA and synthesized cDNA serves as template for replicate pre-amplification reactions. In some embodiments, samples are run on TaqmanTM low density arrays (TLDA, Applied Biosystems).

[00154] In some embodiments raw data for the calculation of the CCP score equals the C_t values of the genes from the TLDA arrays. In some embodiments, the CCP score is the unweighted mean of C_t values for cell cycle gene expression, normalized by the unweighted mean of the house keeper genes so that higher values indicate higher expression. In some embodiments CCP scores are centered by the mean value determined in a commercial training set.

[00155] In one embodiment of the invention early stage lung adenocarcinoma samples can be used as a “training” cohort for the purpose of defining centering constants in lung tissue. In some embodiments these constants can be used to center the triplicate expression mean of CCP genes before averaging into CCP scores. In some embodiments distribution of CCP scores in the training cohort is similar to the distribution in any of the clinical sample sets.

[00156] In one embodiment of the invention patient samples with early stage lung adenocarcinoma may be studied. In some embodiments patients may be selected using staging criteria following the 6th edition of the IASLC staging guidelines. In some embodiments other clinical data including, gender, ethnicity, smoking status, recurrence and vital status may be collected.

[00157] In one embodiment, survival data for the cohort includes disease-free survival (DFS, time from surgery to first recurrence or last follow-up for recurrence) and overall survival (OS, time from surgery to death or last follow-up for survival). In some embodiments deaths without recurrence are censored at time of death and not included as cancer-related death events.

[00158] In some embodiments, a cohort may be analyzed by Cox proportional hazard analysis using disease survival as the outcome variable. In some embodiments, continuous variables include CCP score and clinical parameters including stage (numerical, 1A=1, 1B=2, IIa=3, IIb=4), adjuvant treatment (categorical, y/n), age in years, smoking status (numerical, never=1, former=2, current=3) and gender (male/female). In some embodiments an interaction term for adjuvant treatment and stage may be introduced to account for the known difference in treatment outcome in stage IA versus other stages. In some embodiments, the test statistic for the prognostic value of the CCP score is the likelihood ratio for the full model (all clinical variable plus the CCP score) versus the reduced model (all clinical variables, no CCP score).

[00159] In some embodiments, a univariate analysis may show

[00160] that stage, CCP score and gender are significantly correlated with disease survival. In some embodiments the p-value for stage may be equal to or less than 0.05. In some embodiments the p-value for stage may be equal to or less than 0.01. In some embodiments the p-value for stage may be equal to or less than 0.00. In some embodiments the p-value for stage may be equal to or less than 0.0001. In some embodiments the p-value may be equal to or less than 0.00045. In some embodiments the p-value for CCP score may be equal to or less than 0.05, in some embodiments the p-value for CCP score may be equal to or less than 0.01. In some embodiments the p-value for CCP score may be equal to or less than 0.0013 or less. In some embodiments the p-value for gender may be equal to or less than 0.05, in some embodiments the p-value for stage may be equal to or less than 0.054.

[00161] In some embodiments, a multivariate analysis may show that CCP score is a significant predictor of disease survival when added to a model of all clinical parameters. In some embodiments the CCP score may be equal to or less than 0.05. In some embodiments the CCP score may be equal to or less than 0.0175. In some embodiments the Hazard Ratio may be equal to or greater than 1.52. In some embodiments, the 95% confidence interval may be equal to 1.04 and 2.24. In some embodiments the lowest CCP quartile has a 5-year survival expectation of 98%, In some embodiments the highest CCP quartile has a 5-year survival rate of 60%.

[00162] In some embodiments stage I and stage II patients partition across all four CCP quartiles. Thus, in some embodiments CCP score can be used to modify treatment considerations depending on risk estimates besides clinical staging criteria.

[00163] In some embodiments stage IB samples may be analyzed separately. In some embodiments CCP score is a significant predictor of outcome for stage IB patients. In some embodiments the CCP score p-value is equal to or less than 0.05. In some embodiments the CCP score p-value is equal to or less than 0.02. In some embodiments CCP score may be used as a threshold for a high risk (above the mean) and low risk groups (below the mean). In some embodiments the low risk group may have a survival rate of 95% or higher. In some embodiments the high risk group may have a survival rate of 75% or lower. In some embodiments stage IB samples in the highest CCP quartile have a 5-year survival rate of 80% or higher. In some embodiments, stage IB samples in the lowest CCP quartile have a 5-year survival rate of 30% or lower.

[00164] In some embodiments, the CCP score not only acts as a prognostic (by identifying rapidly progressing cancers) but may also be indicative of treatment benefit (by identifying cancers that will be most susceptible to disruption of the cell cycle.). In some embodiments the test statistic is the likelihood ratio for the full model (all clinical variable, CCP score and CCP:adjuvant treatment interaction term) versus the reduced model (all clinical variables no CCP score, no interaction term). In some embodiments, the interaction for CCP score and adjuvant treatment is not formally significant at the 0.05 level. In some embodiments, the interaction for CCP score is equal to or less than 0.07. In some embodiments untreated patients in the highest CCP quartile have a survival rate of 30% or lower. In some embodiments untreated patients in the lowest CCP quartile have survival rates of 70% or higher. In some embodiments patients treated with adjuvant therapy in the highest CCP quartile have a survival rate of 70% or higher. In some embodiments a high CCP score correlates strongly with a higher likelihood of response to adjuvant chemotherapy.

[00165] In another aspect of the invention, the prognostic value of CCP in terms of p-values and standardized hazard ratios from univariate, and multivariate, Cox proportional hazards models is evaluated. In some embodiments, the endpoint may be death from disease within five years of surgery. In some embodiments death from disease can be defined as death following recurrence. In some embodiments patients who are lost to follow-up or died of other causes are censored from the analysis.

[00166] In some embodiments univariate p-values are based on the partial likelihood ratio. In some embodiments multivariate p-values are based on the partial likelihood ratio for the change in deviance from a full model versus a reduced model. In some embodiments the full model includes all relevant covariates. In some embodiments the reduced model includes all covariates except for the covariate being evaluated, and any interaction terms involving the covariate being evaluated. In some embodiments hazard ratios are standardized to represent the increased risk associated with a one standard deviation increase in CCP score.

[00167] In some embodiments CCP score may be combined with clinical variables in multivariate Cox proportional hazards models. In some embodiments clinical data for age, gender, smoking status, stage, adjuvant treatment, pleural invasion, and/or tumor size is included. In some embodiments an interaction term for stage with treatment is included.

[00168] In some embodiments categorical clinical variables are coded to explain the maximum possible variability in patient outcomes. In some embodiments stage may be coded as a 4-level categorical variable (IA, IB, IIA, IIB) rather than a 2-level categorical variable (I,II). In some embodiments less significant p-values may be associated with stage.

[00169] In some embodiments the appropriateness of combining cohorts may be assessed. In some embodiments Cox proportional hazards models may be constructed for each of the clinical variables, consisting of the clinical variable in question, a variable designating cohort, and an interaction term. In some embodiments, interaction terms may have a p-value greater than 0.05 in two-sided likelihood ratio tests.

[00170] In some embodiments the appropriateness of the proportional hazards assumption may be evaluated. In some embodiments, time dependence for the hazard ratio of the CCP score is not supported. In some embodiments the possibility that CCP score might have a non-linear effect is evaluated. In some embodiments second- and third-order polynomials for CCP score are tested in Cox proportional hazards models but were not significant at the 5% level.

[00171] In some embodiments a Cox proportional hazards models is constructed for each available clinical variable, consisting of the clinical variable in question, CCP score, and an interaction term. In some embodiments the p-value for the interaction terms is greater than 0.05.

[00172] In some embodiments variables for each patient include age, gender, smoking status, stage, adjuvant treatment, tumor size, pleural invasion, cohort, and/or CCP score. In some embodiments age in years is a quantitative variable. In some embodiments gender is a binary variable (male, female). In some embodiments, smoking status is a 3-level categorical variable (never, former, current). In some embodiments pathological stage is according to the 7th edition TNM classification. In some embodiments pathological stage is a 4-level categorical variable (IA, IB, IIA, IIB). In some embodiments adjuvant treatment is a binary variable (no, yes). In some embodiment tumor size is a quantitative variable. In some embodiments tumor size is measured in centimeters. In some embodiments pleural invasion is a binary variable (no, yes). In some embodiments cohort is a 2-level categorical variable. In some embodiments CCP score is a quantitative variable.

[00173] In some embodiments univariate analysis assesses CCP scores ability to predict five year survival. In some embodiments the p-value is equal to or less than 0.05. In

some embodiments the p-value is equal to or less than 0.01. In some embodiments the p-value is equal to or less than 0.001. In some embodiments the p-value is equal to or less than 0.0003. In some embodiments multivariate analysis assesses CCP's ability to predict five-year survival. In some embodiments the p-value is equal to or less than 0.05. In some embodiments the p-value is equal to or less than 0.01. In some embodiments the p-value is equal to or less than 0.007. In some embodiments the standardized Hazard Ratio is equal to 1.50. In some embodiments the 95% Confidence Intervals are equal to 1.11 and 2.02. In some embodiments the results from multivariate analysis indicate that the CCP score is able to capture a significant amount of prognostic information independent of the many clinical variables. In some embodiments 5-year disease survival for patients with low CCP scores is 92% or higher. In some embodiments 5-year disease survival for patients with medium CCP scores is 79% in patients or lower. In some embodiments 5-year disease survival for patients with high CCP scores is 73% or lower.

[00174] In another aspect of the invention the relationship between CCP score and absolute benefit from adjuvant treatment is analyzed. In some embodiments CCP score maybe be used to predict survival in patients treated with adjuvant therapies.

[00175] In some embodiments the technique of Zhang & Klein (*Confidence bands for the difference of two survival curves under the proportional hazards model*, LIFETIME DATA ANALYSIS (2001)7:243-254) may be used to evaluate the absolute difference in 5-year predicted risk of disease-related death for patients who received adjuvant treatment versus patients who did not receive adjuvant treatment over a range of observed CCP scores. In some embodiments complex contrast coding may be used to test whether the absolute difference, due to treatment, in the hazard of disease related death is greater for patients with high CCP scores than for patients with low CCP scores.

[00176] In some embodiments the Zhang & Klein method may be used to test for differences in survival between two treatments (or between patients receiving treatment, and patients not receiving treatment) after adjusting for the effects of other covariates. In some embodiments estimates of absolute treatment benefit may be calculated together with point wise confidence bands, over a range of observed CCP scores.

[00177] In some embodiments contrast coding may be used as to test whether the absolute decrease in the hazard of disease-related death due to adjuvant treatment is significantly greater for patients with high CCP scores than for patients with low CCP scores.

In some embodiments CCP scores may be categorized as high or low using the median as the cutoff point. In some embodiments each patient may be assigned to one of four groups: high CCP with adjuvant treatment (*ht*), high CCP without adjuvant treatment (*hu*), low CCP with adjuvant treatment (*lt*), and low CCP without adjuvant treatment (*lu*). In some embodiments, the null hypothesis is $H_0: ht - hu = lt - lu$. In some embodiments the null hypothesis is $H_0: ht - hu - lt + lu = 0$. In some embodiments the null hypothesis may be tested with Cox proportional hazards regression, using 5-year disease related death as the outcome, by applying the complex contrast vector $c = (1, -1, -1, 1)$. In some embodiments significantly greater absolute treatment benefit is indicated for patients with high CCP scores compared to patients with low CCP scores. In some embodiments the p-value is equal to or lower than 0.05. In some embodiments the p-value is equal to or lower than 0.01. In some embodiments the p-value is equal to or lower than 0.0060. In some embodiments the association between CCP score and absolute treatment benefit maintains significance after adjusting for age, gender, smoking status, stage, tumor size, and pleural invasion status in the complex contrast model. In some embodiments the p-value is equal to or lower than 0.05. In some embodiments the p-value is equal to or lower than 0.024).

[00178] In another aspect of the invention, a combined prognostic score of pathological stage (pStage) and the CCP expression score may be modeled in stage I and II patients without adjuvant treatment. In some embodiments DC values may be centered by processing site and scaled by the ratio of the standard deviations of the CCP score in qPCR and microarray data. In some embodiments the outcome measure is five year disease-specific survival. In some embodiments coefficients for the combination of CCP and pStage are derived from a bivariate Cox proportional hazards model. In some embodiments pathological stage is modeled as numerical variable (IA=1, IB=2, IIA=3, IIB=4). In some embodiments the Cox PH model may be stratified by cohort. In some embodiments cohorts are evaluated individually. In some embodiments coefficients for a final model may be derived from a combination of all cohorts. In some embodiments the final prognostic score may be scaled to represent values between 0 and 80.

[00179] In some embodiments hazard ratios for CCP score and pathological stage are consistent across the various cohorts. In some embodiments CCP together with pathological stage provides the best prediction for lung cancer mortality. In some embodiments Prognostic score = $20 \times (0.33 \times \text{CCP score} + 0.52 \times \text{stage}) + 15$. In some embodiments the p-value is equal to or less than 0.05. In some embodiments the p-value is equal to or less than 0.01. In

some embodiments the p-value is equal to or less than 0.001. In some embodiments the p-value is equal to or less than 0.00078.

[00180] In some embodiments the combined score may differentiate 5-year lung cancer mortality risk for patients assigned the same risk based on pathological stage alone. In some embodiments pathological stage alone may provided estimates of 5-year risk of cancer-specific death. In some embodiments stage IA provides a 5-year risk of cancer-specific death estimate of 12.6% or less. In some embodiments stage IB provides a 5-year risk of cancer-specific death estimate of 22.6% or less. In some embodiments stage IIA provides a 5-year risk of cancer-specific death estimate of 38.4% or more. In some embodiments stage IIB provides a 5-year risk of cancer-specific death estimate of 60% or more. In some embodiments the prognostic score may be used to separate stage IA patients with 5-year risk estimates ranging from 6% to 24%. In some embodiments the prognostic score may be used to separate stage IB patients with 5-year risk estimates ranging from 10% to 42%. In some embodiments the prognostic score may be used to separate stage IIA patients with 5-year risk estimates ranging from 21% to 63%. In some embodiments the prognostic score may be used to separate stage IIB patients with 5-year risk estimates ranging from 32% to 75%.

[00181] In some embodiments a pre-defined prognostic score (PS) is calculated for each patient. In some embodiments a PS cut-point is determined such that the percentage of stage IA patients having a PS at or below the cutpoint is close as possible to 85%.

[00182] In some embodiments the association of CCP, and the PS, with 5-year lung cancer mortality is evaluated using Cox proportional hazards models, likelihood ratio tests or both. In some embodiments the Mantel-Cox logrank test is used to evaluate the difference in 5-year lung cancer mortality for patients with PS scores at or below a cut-point versus patients with scores above a cut-point.

[00183] In some embodiments PS may be used to predict 5 year lung cancer specific survival. In some embodiments low and high risk may be classified by a cut-off predefined as the 85% percentile of the PS in stage IA patients. In some embodiments there is a significant difference between the average risk between low and high risk patient groups.

[00184] In some embodiments patients in the low PS group have a significantly more favorable 5-year survival than patients in the high PS group. In some embodiments the Log-rank p value is at least 3.8×10^{-7} .

[00185] In some embodiments risk stratification is improved by PS compared to pathological stage alone. In some embodiments patients with pathological stage IA have an 18% risk of disease specific death within five years. In some embodiments patients with pathological stage IB have a 28% risk of disease specific death within five years. In some embodiments patients with pathological stage IIA have a 42% risk of disease specific death within five years. In some embodiments patients with pathological stage IIB have a 60% risk of disease specific death within five years. In some embodiments, pathological stage is combined with CCP score resulting in the ability to assigned significantly more detailed risk to patients assigned identical risk according to pathological stage alone.

[00186] In some embodiments CCP score alone is a significant prognostic marker. In some embodiments CCP score is evaluated using univariate analysis. In some the univariate p-value is at least 0.05. In some the univariate p-value is at least 0.01. In some the univariate p-value is at least 0.001. In some the univariate p-value is at least 0.0001. In some the univariate p-value is at least 0.00001. In some the univariate p-value is at least 0.000001. In some the univariate p-value is at least 0.0000001. In some embodiments CCP score is evaluated using multivariate analysis. In some embodiments CCP score is evaluated using multivariate analysis. In some the multivariate p-value is at least 0.05. In some the multivariate p-value is at least 0.01. In some the multivariate p-value is at least 0.005.

[00187] In some embodiments the prognostic value of PS is evaluated by univariate analysis. In some embodiments the p-value is at least 0.05. In some embodiments the p-value is at least 0.01. In some embodiment the p-value is at least 0.001. In some embodiments the p-value is at least 2.8×10^{-11} . In some embodiments the prognostic value of PS is evaluated by bivariate analysis. In some embodiments the p-value is at least 0.05. In some embodiments the p-value is at least 0.01. In some embodiments the p-value is at least 0.093. In some embodiments the combination of pathological stage and CCP score into the Prognostic Score captures significant prognostic information that is not provided by pathological stage alone.

[00188] In some embodiments the prognostic value of the PS is evaluated in IA and IB stage cancer separately using a univariate model. In some embodiments the Hazard Ratio is 1.67. In some embodiments the 95% confidence intervals are 1.27, and 2.29. In some embodiments the p-value is at least 0.05. In some embodiments the p-value is at least 0.01. In some embodiments the p-value is at least 0.001. In some embodiments the p-value is at least

0.0027. In some embodiments the prognostic value of the PS is evaluated in IA and IB stage cancer separately using a bivariate model. In some embodiments the Hazard Ratio is 1.74. In some embodiments the 95% confidence intervals are 1.16, and 2.61. In some embodiments the p-value is at least 0.05. In some embodiments the combination of pathological stage and CCP score into the Prognostic Score captures significant prognostic information that is not provided by pathological stage alone when restricted to stage IA-IB disease.

[00189] In another embodiment of the invention CCP expression and pathological stage may be used to assess prognosis for post-surgical risk of death in patients diagnosed with lung carcinoids.

[00190] In some embodiments, CCP scores may be generated stage IA, IB, IIA, IIB, and IIIB lung carcinoid patients. In some embodiments the outcome measure is survival.

[00191] In some embodiments the association of CCP with mortality is evaluated using the Cox proportional hazards model. In some embodiments the p-value in a univariate analysis is at least 0.05. In some embodiments the p-value in a univariate analysis is at least 0.01. In some embodiments the p-value in a univariate analysis is at least 0.00125. In some embodiments the p-value in a multivariate analysis is at least 0.05. In some embodiments the p-value in a multivariate analysis is at least 0.01. In some embodiments the p-value in a multivariate analysis is at least 0.0035.

[00192] In another embodiment of the invention CCP expression and pathological stage may be used to assess prognosis for post-surgical risk of death in patients diagnosed with lung carcinoids.

[00193] In some embodiments disease may be spread among two histological groups: atypical and typical. In some embodiments stage may be coded as a 4-level categorical variable. In some embodiments stages may consist of IA, IB, IIA/IIB, and IIIA/IIIB/IV.

[00194] In some embodiments the association of CCP with death from disease may be evaluated using the Cox proportional hazards model. In some embodiments univariate analysis of Cox proportional hazards models may be used to evaluate the association of CCP with death from lung carcinoids. In some embodiments the p-value is at least 0.05. In some embodiments the p-value is at least 0.01. In some embodiments the p-value is at least 0.0014. In some embodiments the association of CCP with disease free survival may be evaluated using the Cox proportional hazards model. In some embodiments univariate analysis of Cox

proportional hazards models may be used to evaluate the association of CCP with disease free survival. . In some embodiments the p-value is at least 0.05. In some embodiments the p-value is at least 0.01. In some embodiments the p-value is at least 0.006.

[00195] In some embodiments the association of CCP and death with disease in atypical carcinoid patients may be evaluated using the Cox proportional hazards model. In some embodiments univariate analysis may be used to evaluate the association of CCP and death with disease in atypical carcinoid patients. In some embodiments CCP is a highly significant predictor of death with recurrence of disease. In some embodiments the p-value is at least 0.05. In some embodiment the p-value is at least 0.0102.

Table 21

Sub-Panel #	Genes in Sub-Panel	uni pval	multi pval
1	ASF1B, ASPM	5.38E-03	3.08E-02
2	ASF1B, BIRC5	7.15E-03	4.31E-02
3	ASF1B, BUB1B	4.24E-03	3.96E-02
4	ASF1B, C18orf24	3.09E-04	3.64E-03
5	ASF1B, CDC2	1.47E-02	4.29E-02
6	ASF1B, CDC20	8.24E-03	3.27E-02
7	ASF1B, CDCA3	1.98E-02	7.74E-02
8	ASF1B, CDCA8	6.39E-03	4.17E-02
9	ASF1B, CDKN3	2.41E-03	2.02E-02
10	ASF1B, CENPF	5.91E-04	4.57E-03
11	ASF1B, CENPM	2.64E-02	8.19E-02
12	ASF1B, CEP55	1.22E-03	6.48E-03
13	ASF1B, DLGAP5	2.25E-03	7.93E-03
14	ASF1B, DTL	3.34E-03	1.27E-02
15	ASF1B, FOXM1	3.53E-03	1.93E-02
16	ASF1B, KIAA0101	7.84E-03	2.61E-02
17	ASF1B, KIF11	6.51E-04	6.21E-03
18	ASF1B, KIF20A	3.11E-03	1.77E-02
19	ASF1B, MCM10	1.07E-02	4.96E-02
20	ASF1B, NUSAP1	1.98E-02	9.12E-02
21	ASF1B, ORC6L	2.72E-03	1.05E-02
22	ASF1B, PBK	1.01E-03	9.58E-03
23	ASF1B, PLK1	7.99E-03	4.00E-02
24	ASF1B, PRC1	7.77E-03	3.49E-02
25	ASF1B, PTTG1	1.26E-03	1.28E-02
26	ASF1B, RAD51	3.79E-03	1.52E-02
27	ASF1B, RAD54L	1.44E-03	4.92E-03
28	ASF1B, RRM2	2.37E-03	1.71E-02
29	ASF1B, TK1	1.47E-02	7.36E-02
30	ASF1B, TOP2A	8.52E-03	2.89E-02
31	ASPM, BIRC5	2.63E-03	2.05E-02
32	ASPM, BUB1B	1.68E-03	1.90E-02
33	ASPM, C18orf24	6.42E-05	9.91E-04
34	ASPM, CDC2	2.78E-03	1.24E-02
35	ASPM, CDC20	2.08E-03	1.16E-02
36	ASPM, CDCA3	4.95E-03	2.27E-02
37	ASPM, CDCA8	1.80E-03	1.63E-02
38	ASPM, CDKN3	6.93E-04	7.76E-03
39	ASPM, CENPF	2.13E-04	1.86E-03
40	ASPM, CENPM	4.50E-03	2.16E-02
41	ASPM, CEP55	3.28E-04	2.38E-03
42	ASPM, DLGAP5	5.30E-04	2.62E-03
43	ASPM, DTL	5.66E-04	3.28E-03
44	ASPM, FOXM1	1.28E-03	8.58E-03
45	ASPM, KIAA0101	1.78E-03	8.44E-03
46	ASPM, KIF11	8.60E-05	1.27E-03

47	ASPM, KIF20A	7.79E-04	6.15E-03
48	ASPM, MCM10	3.68E-03	2.24E-02
49	ASPM, NUSAP1	3.72E-03	2.80E-02
50	ASPM, ORC6L	5.37E-04	3.10E-03
51	ASPM, PBK	1.87E-04	2.54E-03
52	ASPM, PLK1	1.84E-03	1.34E-02
53	ASPM, PRC1	2.73E-03	1.53E-02
54	ASPM, PTTG1	1.81E-04	2.91E-03
55	ASPM, RAD51	6.29E-04	3.75E-03
56	ASPM, RAD54L	2.91E-04	1.35E-03
57	ASPM, RRM2	6.11E-04	5.80E-03
58	ASPM, TK1	3.15E-03	2.50E-02
59	ASPM, TOP2A	1.61E-03	7.47E-03
60	BIRC5, BUB1B	2.43E-03	2.97E-02
61	BIRC5, C18orf24	1.53E-04	2.24E-03
62	BIRC5, CDC2	4.63E-03	2.19E-02
63	BIRC5, CDC20	3.35E-03	1.95E-02
64	BIRC5, CDCA3	7.20E-03	3.40E-02
65	BIRC5, CDCA8	2.54E-03	2.57E-02
66	BIRC5, CDKN3	1.35E-03	1.46E-02
67	BIRC5, CENPF	5.39E-04	4.45E-03
68	BIRC5, CENPM	7.65E-03	3.88E-02
69	BIRC5, CEP55	8.21E-04	6.06E-03
70	BIRC5, DLGAP5	9.81E-04	5.41E-03
71	BIRC5, DTL	1.13E-03	7.00E-03
72	BIRC5, FOXM1	1.98E-03	1.39E-02
73	BIRC5, KIAA0101	3.00E-03	1.49E-02
74	BIRC5, KIF11	2.09E-04	3.37E-03
75	BIRC5, KIF20A	1.36E-03	1.14E-02
76	BIRC5, MCM10	5.24E-03	3.32E-02
77	BIRC5, NUSAP1	6.07E-03	4.55E-02
78	BIRC5, ORC6L	9.05E-04	6.04E-03
79	BIRC5, PBK	3.96E-04	5.25E-03
80	BIRC5, PLK1	3.63E-03	2.64E-02
81	BIRC5, PRC1	3.75E-03	2.36E-02
82	BIRC5, PTTG1	4.43E-04	6.66E-03
83	BIRC5, RAD51	1.00E-03	6.45E-03
84	BIRC5, RAD54L	4.70E-04	2.68E-03
85	BIRC5, RRM2	7.81E-04	8.77E-03
86	BIRC5, TK1	5.35E-03	4.25E-02
87	BIRC5, TOP2A	4.31E-03	1.87E-02
88	BUB1B, C18orf24	6.17E-05	1.62E-03
89	BUB1B, CDC2	1.57E-03	1.31E-02
90	BUB1B, CDC20	1.50E-03	1.43E-02
91	BUB1B, CDCA3	2.80E-03	2.32E-02
92	BUB1B, CDCA8	1.72E-03	2.37E-02
93	BUB1B, CDKN3	5.53E-04	1.03E-02
94	BUB1B, CENPF	2.18E-04	3.16E-03
95	BUB1B, CENPM	3.30E-03	2.64E-02
96	BUB1B, CEP55	2.12E-04	2.75E-03
97	BUB1B, DLGAP5	3.93E-04	3.47E-03
98	BUB1B, DTL	5.20E-04	5.66E-03
99	BUB1B, FOXM1	1.00E-03	1.12E-02
100	BUB1B, KIAA0101	1.31E-03	1.07E-02
101	BUB1B, KIF11	6.55E-05	1.79E-03
102	BUB1B, KIF20A	5.78E-04	8.03E-03
103	BUB1B, MCM10	3.33E-03	2.98E-02
104	BUB1B, NUSAP1	3.50E-03	4.15E-02
105	BUB1B, ORC6L	3.81E-04	4.03E-03
106	BUB1B, PBK	1.10E-04	2.82E-03
107	BUB1B, PLK1	1.74E-03	2.08E-02
108	BUB1B, PRC1	2.60E-03	2.29E-02
109	BUB1B, PTTG1	1.89E-04	5.07E-03
110	BUB1B, RAD51	5.65E-04	5.75E-03
111	BUB1B, RAD54L	2.32E-04	2.01E-03
112	BUB1B, RRM2	5.42E-04	8.15E-03
113	BUB1B, TK1	2.61E-03	3.33E-02
114	BUB1B, TOP2A	9.47E-04	8.02E-03
115	C18orf24, CDC2	1.49E-04	1.02E-03
116	C18orf24, CDC20	1.35E-04	1.30E-03
117	C18orf24, CDCA3	5.53E-04	4.42E-03

118	C18orf24, CDCA8	4.67E-05	1.02E-03
119	C18orf24, CDKN3	3.82E-05	7.45E-04
120	C18orf24, CENPF	1.71E-05	2.30E-04
121	C18orf24, CENPM	1.83E-04	1.91E-03
122	C18orf24, CEP55	1.66E-05	1.95E-04
123	C18orf24, DLGAP5	2.61E-05	2.02E-04
124	C18orf24, DTL	1.27E-05	1.45E-04
125	C18orf24, FOXM1	7.16E-05	8.79E-04
126	C18orf24, KIAA0101	6.71E-05	5.34E-04
127	C18orf24, KIF11	2.82E-06	7.31E-05
128	C18orf24, KIF20A	1.74E-05	2.69E-04
129	C18orf24, MCM10	1.61E-04	2.03E-03
130	C18orf24, NUSAP1	2.79E-04	4.08E-03
131	C18orf24, ORC6L	1.18E-05	1.37E-04
132	C18orf24, PBK	7.99E-06	1.89E-04
133	C18orf24, PLK1	1.82E-04	2.17E-03
134	C18orf24, PRC1	4.58E-05	6.53E-04
135	C18orf24, PTTG1	3.85E-06	1.22E-04
136	C18orf24, RAD51	1.65E-05	1.81E-04
137	C18orf24, RAD54L	5.27E-06	5.08E-05
138	C18orf24, RRM2	1.19E-05	2.89E-04
139	C18orf24, TK1	1.03E-04	1.98E-03
140	C18orf24, TOP2A	2.19E-04	1.51E-03
141	CDC2, CDC20	4.91E-03	1.51E-02
142	CDC2, CDCA3	7.91E-03	2.14E-02
143	CDC2, CDCA8	2.72E-03	1.53E-02
144	CDC2, CDKN3	1.17E-03	7.54E-03
145	CDC2, CENPF	3.23E-04	1.42E-03
146	CDC2, CENPM	1.15E-02	2.79E-02
147	CDC2, CEP55	9.13E-04	2.96E-03
148	CDC2, DLGAP5	1.39E-03	3.69E-03
149	CDC2, DTL	1.42E-03	3.46E-03
150	CDC2, FOXM1	1.97E-03	7.71E-03
151	CDC2, KIAA0101	5.44E-03	1.32E-02
152	CDC2, KIF11	2.38E-04	1.50E-03
153	CDC2, KIF20A	1.83E-03	7.60E-03
154	CDC2, MCM10	5.82E-03	2.23E-02
155	CDC2, NUSAP1	8.96E-03	3.40E-02
156	CDC2, ORC6L	1.27E-03	3.75E-03
157	CDC2, PBK	3.62E-04	2.61E-03
158	CDC2, PLK1	3.49E-03	1.33E-02
159	CDC2, PRC1	4.12E-03	1.42E-02
160	CDC2, PTTG1	4.35E-04	3.35E-03
161	CDC2, RAD51	1.61E-03	4.85E-03
162	CDC2, RAD54L	6.20E-04	1.46E-03
163	CDC2, RRM2	8.54E-04	5.18E-03
164	CDC2, TK1	6.34E-03	2.84E-02
165	CDC2, TOP2A	4.83E-03	1.08E-02
166	CDC20, CDCA3	6.50E-03	2.26E-02
167	CDC20, CDCA8	2.37E-03	1.57E-02
168	CDC20, CDKN3	9.41E-04	7.46E-03
169	CDC20, CENPF	2.87E-04	1.87E-03
170	CDC20, CENPM	5.38E-03	1.93E-02
171	CDC20, CEP55	4.80E-04	2.35E-03
172	CDC20, DLGAP5	9.81E-04	3.47E-03
173	CDC20, DTL	8.44E-04	3.23E-03
174	CDC20, FOXM1	1.50E-03	7.79E-03
175	CDC20, KIAA0101	2.98E-03	9.91E-03
176	CDC20, KIF11	1.69E-04	1.61E-03
177	CDC20, KIF20A	1.33E-03	7.07E-03
178	CDC20, MCM10	4.46E-03	2.10E-02
179	CDC20, NUSAP1	5.95E-03	3.02E-02
180	CDC20, ORC6L	8.81E-04	3.65E-03
181	CDC20, PBK	3.10E-04	2.81E-03
182	CDC20, PLK1	2.41E-03	1.26E-02
183	CDC20, PRC1	2.99E-03	1.32E-02
184	CDC20, PTTG1	3.17E-04	3.31E-03
185	CDC20, RAD51	1.05E-03	4.33E-03
186	CDC20, RAD54L	5.61E-04	1.89E-03
187	CDC20, RRM2	6.28E-04	4.79E-03
188	CDC20, TK1	4.25E-03	2.40E-02

189	CDC20, TOP2A	2.53E-03	8.41E-03
190	CDCA3, CDCA8	2.91E-03	1.94E-02
191	CDCA3, CDKN3	2.36E-03	1.58E-02
192	CDCA3, CENPF	7.08E-04	4.19E-03
193	CDCA3, CENPM	1.41E-02	4.49E-02
194	CDCA3, CEP55	1.64E-03	5.85E-03
195	CDCA3, DLGAP5	1.50E-03	4.67E-03
196	CDCA3, DTL	1.38E-03	4.33E-03
197	CDCA3, FOXM1	4.33E-03	1.68E-02
198	CDCA3, KIAA0101	6.33E-03	1.66E-02
199	CDCA3, KIF11	5.40E-04	3.77E-03
200	CDCA3, KIF20A	1.60E-03	8.50E-03
201	CDCA3, MCM10	7.89E-03	3.16E-02
202	CDCA3, NUSAP1	1.14E-02	5.40E-02
203	CDCA3, ORC6L	2.08E-03	8.05E-03
204	CDCA3, PBK	1.12E-03	7.11E-03
205	CDCA3, PLK1	5.22E-03	2.29E-02
206	CDCA3, PRC1	4.48E-03	1.89E-02
207	CDCA3, PTTG1	1.31E-03	1.04E-02
208	CDCA3, RAD51	3.37E-03	1.16E-02
209	CDCA3, RAD54L	9.65E-04	3.08E-03
210	CDCA3, RRM2	1.30E-03	9.57E-03
211	CDCA3, TK1	5.86E-03	3.25E-02
212	CDCA3, TOP2A	5.09E-03	1.56E-02
213	CDCA8, CDKN3	6.08E-04	9.13E-03
214	CDCA8, CENPF	1.39E-04	1.83E-03
215	CDCA8, CENPM	4.98E-03	2.84E-02
216	CDCA8, CEP55	2.29E-04	2.29E-03
217	CDCA8, DLGAP5	4.93E-04	3.18E-03
218	CDCA8, DTL	4.35E-04	3.51E-03
219	CDCA8, FOXM1	9.99E-04	9.17E-03
220	CDCA8, KIAA0101	1.78E-03	1.07E-02
221	CDCA8, KIF11	6.21E-05	1.34E-03
222	CDCA8, KIF20A	8.43E-04	8.40E-03
223	CDCA8, MCM10	4.06E-03	2.87E-02
224	CDCA8, NUSAP1	3.53E-03	3.42E-02
225	CDCA8, ORC6L	4.97E-04	3.85E-03
226	CDCA8, PBK	1.46E-04	2.76E-03
227	CDCA8, PLK1	1.46E-03	1.44E-02
228	CDCA8, PRC1	2.99E-03	2.05E-02
229	CDCA8, PTTG1	2.08E-04	4.31E-03
230	CDCA8, RAD51	5.98E-04	4.75E-03
231	CDCA8, RAD54L	3.25E-04	1.97E-03
232	CDCA8, RRM2	6.33E-04	7.57E-03
233	CDCA8, TK1	3.80E-03	3.38E-02
234	CDCA8, TOP2A	1.21E-03	7.48E-03
235	CDKN3, CENPF	7.77E-05	1.01E-03
236	CDKN3, CENPM	1.72E-03	1.27E-02
237	CDKN3, CEP55	1.50E-04	1.47E-03
238	CDKN3, DLGAP5	2.52E-04	1.71E-03
239	CDKN3, DTL	1.50E-04	1.45E-03
240	CDKN3, FOXM1	4.83E-04	4.90E-03
241	CDKN3, KIAA0101	7.04E-04	4.94E-03
242	CDKN3, KIF11	3.43E-05	7.23E-04
243	CDKN3, KIF20A	2.90E-04	3.52E-03
244	CDKN3, MCM10	1.49E-03	1.35E-02
245	CDKN3, NUSAP1	1.66E-03	1.89E-02
246	CDKN3, ORC6L	1.86E-04	1.69E-03
247	CDKN3, PBK	7.70E-05	1.54E-03
248	CDKN3, PLK1	9.21E-04	9.27E-03
249	CDKN3, PRC1	7.51E-04	7.47E-03
250	CDKN3, PTTG1	6.94E-05	1.66E-03
251	CDKN3, RAD51	1.97E-04	1.88E-03
252	CDKN3, RAD54L	7.39E-05	5.82E-04
253	CDKN3, RRM2	1.50E-04	2.67E-03
254	CDKN3, TK1	1.18E-03	1.46E-02
255	CDKN3, TOP2A	8.78E-04	5.32E-03
256	CENPF, CENPM	4.44E-04	2.73E-03
257	CENPF, CEP55	6.55E-05	3.90E-04
258	CENPF, DLGAP5	7.55E-05	3.53E-04
259	CENPF, DTL	8.90E-05	4.32E-04

260	CENPF, FOXM1	1.53E-04	1.15E-03
261	CENPF, KIAA0101	1.95E-04	9.32E-04
262	CENPF, KIF11	5.61E-06	8.97E-05
263	CENPF, KIF20A	7.28E-05	7.44E-04
264	CENPF, MCM10	3.99E-04	3.23E-03
265	CENPF, NUSAP1	9.35E-04	8.68E-03
266	CENPF, ORC6L	4.57E-05	2.90E-04
267	CENPF, PBK	9.89E-06	1.68E-04
268	CENPF, PLK1	4.67E-04	3.51E-03
269	CENPF, PRC1	2.36E-04	1.66E-03
270	CENPF, PTTG1	1.41E-05	2.52E-04
271	CENPF, RAD51	4.28E-05	2.69E-04
272	CENPF, RAD54L	2.85E-05	1.38E-04
273	CENPF, RRM2	4.19E-05	5.45E-04
274	CENPF, TK1	2.69E-04	3.01E-03
275	CENPF, TOP2A	5.47E-04	2.24E-03
276	CENPM, CEP55	1.11E-03	5.15E-03
277	CENPM, DLGAP5	1.30E-03	3.91E-03
278	CENPM, DTL	1.91E-03	5.84E-03
279	CENPM, FOXM1	2.99E-03	1.34E-02
280	CENPM, KIAA0101	6.89E-03	1.89E-02
281	CENPM, KIF11	3.72E-04	3.00E-03
282	CENPM, KIF20A	2.23E-03	1.12E-02
283	CENPM, MCM10	1.14E-02	4.43E-02
284	CENPM, NUSAP1	1.36E-02	5.95E-02
285	CENPM, ORC6L	1.68E-03	5.46E-03
286	CENPM, PBK	5.38E-04	4.71E-03
287	CENPM, PLK1	4.66E-03	2.09E-02
288	CENPM, PRC1	6.78E-03	2.47E-02
289	CENPM, PTTG1	6.37E-04	5.67E-03
290	CENPM, RAD51	2.91E-03	9.38E-03
291	CENPM, RAD54L	7.49E-04	2.07E-03
292	CENPM, RRM2	1.75E-03	1.01E-02
293	CENPM, TK1	1.12E-02	5.12E-02
294	CENPM, TOP2A	8.75E-03	2.41E-02
295	CEP55, DLGAP5	1.30E-04	4.99E-04
296	CEP55, DTL	8.20E-05	3.61E-04
297	CEP55, FOXM1	2.56E-04	1.55E-03
298	CEP55, KIAA0101	6.20E-04	2.20E-03
299	CEP55, KIF11	1.86E-05	2.24E-04
300	CEP55, KIF20A	1.54E-04	9.92E-04
301	CEP55, MCM10	9.07E-04	5.29E-03
302	CEP55, NUSAP1	7.51E-04	5.41E-03
303	CEP55, ORC6L	7.75E-05	3.81E-04
304	CEP55, PBK	3.97E-05	4.51E-04
305	CEP55, PLK1	4.57E-04	2.97E-03
306	CEP55, PRC1	2.97E-04	1.85E-03
307	CEP55, PTTG1	2.77E-05	3.58E-04
308	CEP55, RAD51	1.39E-04	6.15E-04
309	CEP55, RAD54L	2.16E-05	8.42E-05
310	CEP55, RRM2	6.05E-05	5.91E-04
311	CEP55, TK1	6.59E-04	5.03E-03
312	CEP55, TOP2A	1.20E-03	3.99E-03
313	DLGAP5, DTL	2.20E-04	6.32E-04
314	DLGAP5, FOXM1	3.58E-04	1.60E-03
315	DLGAP5, KIAA0101	8.81E-04	2.46E-03
316	DLGAP5, KIF11	6.92E-05	4.51E-04
317	DLGAP5, KIF20A	3.32E-04	1.48E-03
318	DLGAP5, MCM10	1.40E-03	6.14E-03
319	DLGAP5, NUSAP1	1.26E-03	6.26E-03
320	DLGAP5, ORC6L	2.31E-04	7.06E-04
321	DLGAP5, PBK	6.90E-05	5.44E-04
322	DLGAP5, PLK1	6.09E-04	2.81E-03
323	DLGAP5, PRC1	8.25E-04	3.11E-03
324	DLGAP5, PTTG1	6.44E-05	5.41E-04
325	DLGAP5, RAD51	3.17E-04	1.01E-03
326	DLGAP5, RAD54L	1.31E-04	3.21E-04
327	DLGAP5, RRM2	1.09E-04	7.09E-04
328	DLGAP5, TK1	1.06E-03	5.68E-03
329	DLGAP5, TOP2A	7.54E-04	1.98E-03
330	DTL, FOXM1	3.28E-04	1.68E-03

331	DTL, KIAA0101	8.87E-04	2.31E-03
332	DTL, KIF11	1.17E-05	1.24E-04
333	DTL, KIF20A	2.13E-04	1.13E-03
334	DTL, MCM10	1.47E-03	7.20E-03
335	DTL, NUSAP1	2.23E-03	1.26E-02
336	DTL, ORC6L	1.38E-04	4.38E-04
337	DTL, PBK	2.38E-05	2.85E-04
338	DTL, PLK1	9.63E-04	5.10E-03
339	DTL, PRC1	8.85E-04	3.38E-03
340	DTL, PTTG1	2.34E-05	3.23E-04
341	DTL, RAD51	2.18E-04	7.28E-04
342	DTL, RAD54L	8.24E-05	1.84E-04
343	DTL, RRM2	8.04E-05	6.27E-04
344	DTL, TK1	1.27E-03	8.09E-03
345	DTL, TOP2A	1.05E-03	2.83E-03
346	FOXM1, KIAA0101	1.19E-03	5.12E-03
347	FOXM1, KIF11	5.98E-05	7.49E-04
348	FOXM1, KIF20A	4.69E-04	3.43E-03
349	FOXM1, MCM10	2.48E-03	1.45E-02
350	FOXM1, NUSAP1	2.89E-03	1.96E-02
351	FOXM1, ORC6L	3.42E-04	1.77E-03
352	FOXM1, PBK	1.37E-04	1.66E-03
353	FOXM1, PLK1	1.58E-03	9.88E-03
354	FOXM1, PRC1	1.53E-03	8.46E-03
355	FOXM1, PTTG1	1.03E-04	1.49E-03
356	FOXM1, RAD51	4.09E-04	2.18E-03
357	FOXM1, RAD54L	1.78E-04	7.39E-04
358	FOXM1, RRM2	3.30E-04	3.07E-03
359	FOXM1, TK1	1.93E-03	1.51E-02
360	FOXM1, TOP2A	1.36E-03	5.41E-03
361	KIAA0101, KIF11	1.40E-04	1.05E-03
362	KIAA0101, KIF20A	1.30E-03	5.58E-03
363	KIAA0101, MCM10	4.84E-03	1.91E-02
364	KIAA0101, NUSAP1	5.61E-03	2.47E-02
365	KIAA0101, ORC6L	9.95E-04	2.94E-03
366	KIAA0101, PBK	2.79E-04	2.12E-03
367	KIAA0101, PLK1	1.71E-03	7.63E-03
368	KIAA0101, PRC1	3.57E-03	1.21E-02
369	KIAA0101, PTTG1	2.17E-04	1.92E-03
370	KIAA0101, RAD51	1.22E-03	3.70E-03
371	KIAA0101, RAD54L	4.49E-04	1.12E-03
372	KIAA0101, RRM2	5.16E-04	3.16E-03
373	KIAA0101, TK1	4.55E-03	2.07E-02
374	KIAA0101, TOP2A	2.52E-03	6.14E-03
375	KIF11, KIF20A	2.50E-05	4.03E-04
376	KIF11, MCM10	2.73E-04	3.19E-03
377	KIF11, NUSAP1	3.26E-04	4.80E-03
378	KIF11, ORC6L	2.15E-05	2.20E-04
379	KIF11, PBK	8.07E-06	1.88E-04
380	KIF11, PLK1	1.42E-04	1.75E-03
381	KIF11, PRC1	1.04E-04	1.26E-03
382	KIF11, PTTG1	1.00E-05	2.92E-04
383	KIF11, RAD51	2.74E-05	2.77E-04
384	KIF11, RAD54L	8.31E-06	7.21E-05
385	KIF11, RRM2	1.55E-05	3.18E-04
386	KIF11, TK1	1.56E-04	2.65E-03
387	KIF11, TOP2A	1.99E-04	1.28E-03
388	KIF20A, MCM10	2.17E-03	1.34E-02
389	KIF20A, NUSAP1	2.66E-03	2.07E-02
390	KIF20A, ORC6L	2.76E-04	1.57E-03
391	KIF20A, PBK	7.83E-05	1.08E-03
392	KIF20A, PLK1	6.37E-04	5.17E-03
393	KIF20A, PRC1	1.40E-03	8.24E-03
394	KIF20A, PTTG1	8.82E-05	1.39E-03
395	KIF20A, RAD51	3.38E-04	1.84E-03
396	KIF20A, RAD54L	1.60E-04	7.23E-04
397	KIF20A, RRM2	1.95E-04	2.24E-03
398	KIF20A, TK1	1.73E-03	1.36E-02
399	KIF20A, TOP2A	8.04E-04	3.37E-03
400	MCM10, NUSAP1	6.83E-03	4.19E-02
401	MCM10, ORC6L	1.42E-03	6.85E-03

402	MCM10, PBK	5.93E-04	6.14E-03
403	MCM10, PLK1	2.82E-03	1.87E-02
404	MCM10, PRC1	5.96E-03	2.81E-02
405	MCM10, PTTG1	6.49E-04	7.45E-03
406	MCM10, RAD51	2.11E-03	1.01E-02
407	MCM10, RAD54L	9.20E-04	3.81E-03
408	MCM10, RRM2	1.24E-03	9.97E-03
409	MCM10, TK1	7.36E-03	4.33E-02
410	MCM10, TOP2A	2.79E-03	1.16E-02
411	NUSAP1, ORC6L	1.37E-03	8.64E-03
412	NUSAP1, PBK	4.62E-04	6.26E-03
413	NUSAP1, PLK1	6.48E-03	4.20E-02
414	NUSAP1, PRC1	5.98E-03	3.54E-02
415	NUSAP1, PTTG1	6.12E-04	1.01E-02
416	NUSAP1, RAD51	2.03E-03	1.21E-02
417	NUSAP1, RAD54L	8.52E-04	4.74E-03
418	NUSAP1, RRM2	1.52E-03	1.50E-02
419	NUSAP1, TK1	7.45E-03	5.62E-02
420	NUSAP1, TOP2A	6.36E-03	2.48E-02
421	ORC6L, PBK	7.35E-05	7.21E-04
422	ORC6L, PLK1	6.47E-04	3.55E-03
423	ORC6L, PRC1	1.06E-03	4.05E-03
424	ORC6L, PTTG1	2.82E-05	3.41E-04
425	ORC6L, RAD51	2.50E-04	8.53E-04
426	ORC6L, RAD54L	1.16E-04	3.02E-04
427	ORC6L, RRM2	1.40E-04	1.11E-03
428	ORC6L, TK1	1.21E-03	7.46E-03
429	ORC6L, TOP2A	5.87E-04	1.84E-03
430	PBK, PLK1	1.49E-04	1.90E-03
431	PBK, PRC1	2.73E-04	2.94E-03
432	PBK, PTTG1	1.44E-05	4.50E-04
433	PBK, RAD51	8.19E-05	8.55E-04
434	PBK, RAD54L	3.00E-05	2.54E-04
435	PBK, RRM2	3.64E-05	7.79E-04
436	PBK, TK1	2.60E-04	4.10E-03
437	PBK, TOP2A	2.25E-04	1.55E-03
438	PLK1, PRC1	2.07E-03	1.28E-02
439	PLK1, PTTG1	2.89E-04	3.95E-03
440	PLK1, RAD51	6.16E-04	3.53E-03
441	PLK1, RAD54L	3.17E-04	1.44E-03
442	PLK1, RRM2	5.77E-04	5.34E-03
443	PLK1, TK1	3.21E-03	2.67E-02
444	PLK1, TOP2A	3.62E-03	1.42E-02
445	PRC1, PTTG1	2.59E-04	3.21E-03
446	PRC1, RAD51	1.18E-03	4.92E-03
447	PRC1, RAD54L	6.34E-04	1.94E-03
448	PRC1, RRM2	9.15E-04	6.54E-03
449	PRC1, TK1	5.19E-03	3.07E-02
450	PRC1, TOP2A	1.43E-03	5.45E-03
451	PTTG1, RAD51	4.65E-05	5.44E-04
452	PTTG1, RAD54L	1.77E-05	1.55E-04
453	PTTG1, RRM2	3.89E-05	8.82E-04
454	PTTG1, TK1	4.84E-04	7.96E-03
455	PTTG1, TOP2A	2.98E-04	2.16E-03
456	RAD51, RAD54L	1.28E-04	3.41E-04
457	RAD51, RRM2	1.49E-04	1.21E-03
458	RAD51, TK1	1.64E-03	9.85E-03
459	RAD51, TOP2A	8.66E-04	2.70E-03
460	RAD54L, RRM2	7.40E-05	4.41E-04
461	RAD54L, TK1	6.96E-04	3.55E-03
462	RAD54L, TOP2A	2.14E-04	5.34E-04
463	RRM2, TK1	1.14E-03	1.15E-02
464	RRM2, TOP2A	4.74E-04	2.82E-03
465	TK1, TOP2A	2.83E-03	1.49E-02

Table 22

Sub-Panel #	Genes in Sub-Panel	uni pval	multi pval
1	ASF1B, ASPM, BIRC5	3.23E-03	2.36E-02

2	ASF1B, ASPM, BUB1B	2.47E-03	2.32E-02
3	ASF1B, ASPM, C18orf24	2.98E-04	3.56E-03
4	ASF1B, ASPM, CDC2	5.00E-03	2.21E-02
5	ASF1B, ASPM, CDC20	3.68E-03	1.95E-02
6	ASF1B, ASPM, CDCA3	9.08E-03	4.28E-02
7	ASF1B, ASPM, CDCA8	3.14E-03	2.35E-02
8	ASF1B, ASPM, CDKN3	1.58E-03	1.41E-02
9	ASF1B, ASPM, CENPF	5.34E-04	4.60E-03
10	ASF1B, ASPM, CENPM	6.68E-03	3.19E-02
11	ASF1B, ASPM, CEP55	7.46E-04	5.22E-03
12	ASF1B, ASPM, DLGAP5	1.38E-03	6.78E-03
13	ASF1B, ASPM, DTL	1.54E-03	8.75E-03
14	ASF1B, ASPM, FOXM1	2.25E-03	1.43E-02
15	ASF1B, ASPM, KIAA0101	3.13E-03	1.52E-02
16	ASF1B, ASPM, KIF11	5.14E-04	5.47E-03
17	ASF1B, ASPM, KIF20A	1.74E-03	1.21E-02
18	ASF1B, ASPM, MCM10	4.79E-03	2.79E-02
19	ASF1B, ASPM, NUSAP1	5.70E-03	3.60E-02
20	ASF1B, ASPM, ORC6L	1.51E-03	8.26E-03
21	ASF1B, ASPM, PBK	7.68E-04	7.87E-03
22	ASF1B, ASPM, PLK1	3.08E-03	1.99E-02
23	ASF1B, ASPM, PRC1	3.53E-03	2.04E-02
24	ASF1B, ASPM, PTTG1	8.16E-04	8.72E-03
25	ASF1B, ASPM, RAD51	1.76E-03	1.00E-02
26	ASF1B, ASPM, RAD54L	9.54E-04	4.76E-03
27	ASF1B, ASPM, RRM2	1.51E-03	1.20E-02
28	ASF1B, ASPM, TK1	5.04E-03	3.34E-02
29	ASF1B, ASPM, TOP2A	2.65E-03	1.33E-02
30	ASF1B, BIRC5, BUB1B	2.68E-03	2.82E-02
31	ASF1B, BIRC5, C18orf24	4.92E-04	5.48E-03
32	ASF1B, BIRC5, CDC2	6.25E-03	2.95E-02
33	ASF1B, BIRC5, CDC20	4.43E-03	2.50E-02
34	ASF1B, BIRC5, CDCA3	1.04E-02	5.13E-02
35	ASF1B, BIRC5, CDCA8	3.40E-03	2.90E-02
36	ASF1B, BIRC5, CDKN3	2.14E-03	1.93E-02
37	ASF1B, BIRC5, CENPF	9.24E-04	7.45E-03
38	ASF1B, BIRC5, CENPM	8.18E-03	4.22E-02
39	ASF1B, BIRC5, CEP55	1.32E-03	9.01E-03
40	ASF1B, BIRC5, DLGAP5	1.83E-03	9.83E-03
41	ASF1B, BIRC5, DTL	2.10E-03	1.23E-02
42	ASF1B, BIRC5, FOXM1	2.65E-03	1.79E-02
43	ASF1B, BIRC5, KIAA0101	3.83E-03	1.97E-02
44	ASF1B, BIRC5, KIF11	7.12E-04	8.43E-03
45	ASF1B, BIRC5, KIF20A	2.16E-03	1.62E-02
46	ASF1B, BIRC5, MCM10	5.35E-03	3.36E-02
47	ASF1B, BIRC5, NUSAP1	6.71E-03	4.50E-02
48	ASF1B, BIRC5, ORC6L	1.76E-03	1.10E-02
49	ASF1B, BIRC5, PBK	1.08E-03	1.14E-02
50	ASF1B, BIRC5, PLK1	4.06E-03	2.73E-02
51	ASF1B, BIRC5, PRC1	3.65E-03	2.42E-02
52	ASF1B, BIRC5, PTTG1	1.12E-03	1.21E-02
53	ASF1B, BIRC5, RAD51	2.01E-03	1.24E-02
54	ASF1B, BIRC5, RAD54L	1.08E-03	6.26E-03
55	ASF1B, BIRC5, RRM2	1.52E-03	1.43E-02
56	ASF1B, BIRC5, TK1	6.13E-03	4.31E-02
57	ASF1B, BIRC5, TOP2A	4.64E-03	2.20E-02
58	ASF1B, BUB1B, C18orf24	2.43E-04	4.32E-03
59	ASF1B, BUB1B, CDC2	3.41E-03	2.27E-02
60	ASF1B, BUB1B, CDC20	2.82E-03	2.16E-02
61	ASF1B, BUB1B, CDCA3	6.06E-03	4.29E-02
62	ASF1B, BUB1B, CDCA8	2.69E-03	2.83E-02
63	ASF1B, BUB1B, CDKN3	1.22E-03	1.59E-02
64	ASF1B, BUB1B, CENPF	4.51E-04	5.72E-03
65	ASF1B, BUB1B, CENPM	4.91E-03	3.39E-02
66	ASF1B, BUB1B, CEP55	4.65E-04	5.01E-03
67	ASF1B, BUB1B, DLGAP5	1.04E-03	7.62E-03
68	ASF1B, BUB1B, DTL	1.19E-03	1.05E-02
69	ASF1B, BUB1B, FOXM1	1.73E-03	1.62E-02
70	ASF1B, BUB1B, KIAA0101	2.36E-03	1.69E-02
71	ASF1B, BUB1B, KIF11	3.55E-04	5.97E-03
72	ASF1B, BUB1B, KIF20A	1.31E-03	1.35E-02

73	ASF1B, BUB1B, MCM10	4.09E-03	3.25E-02
74	ASF1B, BUB1B, NUSAP1	4.88E-03	4.39E-02
75	ASF1B, BUB1B, ORC6L	1.09E-03	9.01E-03
76	ASF1B, BUB1B, PBK	5.19E-04	8.25E-03
77	ASF1B, BUB1B, PLK1	2.57E-03	2.42E-02
78	ASF1B, BUB1B, PRC1	3.00E-03	2.46E-02
79	ASF1B, BUB1B, PTTG1	6.66E-04	1.07E-02
80	ASF1B, BUB1B, RAD51	1.45E-03	1.19E-02
81	ASF1B, BUB1B, RAD54L	7.35E-04	5.53E-03
82	ASF1B, BUB1B, RRM2	1.24E-03	1.40E-02
83	ASF1B, BUB1B, TK1	4.09E-03	3.85E-02
84	ASF1B, BUB1B, TOP2A	1.70E-03	1.30E-02
85	ASF1B, C18orf24, CDC2	6.28E-04	4.26E-03
86	ASF1B, C18orf24, CDC20	5.14E-04	4.34E-03
87	ASF1B, C18orf24, CDCA3	1.84E-03	1.33E-02
88	ASF1B, C18orf24, CDCA8	2.79E-04	4.04E-03
89	ASF1B, C18orf24, CDKN3	1.95E-04	2.82E-03
90	ASF1B, C18orf24, CENPF	8.44E-05	1.01E-03
91	ASF1B, C18orf24, CENPM	7.11E-04	6.23E-03
92	ASF1B, C18orf24, CEP55	9.34E-05	9.33E-04
93	ASF1B, C18orf24, DLGAP5	1.58E-04	1.18E-03
94	ASF1B, C18orf24, DTL	1.40E-04	1.28E-03
95	ASF1B, C18orf24, FOXM1	2.73E-04	2.89E-03
96	ASF1B, C18orf24, KIAA0101	3.53E-04	2.69E-03
97	ASF1B, C18orf24, KIF11	4.24E-05	7.69E-04
98	ASF1B, C18orf24, KIF20A	1.57E-04	1.83E-03
99	ASF1B, C18orf24, MCM10	5.51E-04	5.68E-03
100	ASF1B, C18orf24, NUSAP1	8.70E-04	9.21E-03
101	ASF1B, C18orf24, ORC6L	1.20E-04	1.13E-03
102	ASF1B, C18orf24, PBK	8.30E-05	1.41E-03
103	ASF1B, C18orf24, PLK1	4.70E-04	4.78E-03
104	ASF1B, C18orf24, PRC1	2.56E-04	2.89E-03
105	ASF1B, C18orf24, PTTG1	6.18E-05	1.19E-03
106	ASF1B, C18orf24, RAD51	1.67E-04	1.56E-03
107	ASF1B, C18orf24, RAD54L	7.48E-05	6.42E-04
108	ASF1B, C18orf24, RRM2	1.09E-04	1.77E-03
109	ASF1B, C18orf24, TK1	5.28E-04	6.56E-03
110	ASF1B, C18orf24, TOP2A	5.09E-04	3.54E-03
111	ASF1B, CDC2, CDC20	7.42E-03	2.51E-02
112	ASF1B, CDC2, CDCA3	1.28E-02	4.21E-02
113	ASF1B, CDC2, CDCA8	5.25E-03	2.63E-02
114	ASF1B, CDC2, CDKN3	2.87E-03	1.63E-02
115	ASF1B, CDC2, CENPF	9.77E-04	5.02E-03
116	ASF1B, CDC2, CENPM	1.33E-02	4.00E-02
117	ASF1B, CDC2, CEP55	1.79E-03	7.09E-03
118	ASF1B, CDC2, DLGAP5	2.95E-03	9.17E-03
119	ASF1B, CDC2, DTL	3.45E-03	1.10E-02
120	ASF1B, CDC2, FOXM1	3.79E-03	1.58E-02
121	ASF1B, CDC2, KIAA0101	7.51E-03	2.22E-02
122	ASF1B, CDC2, KIF11	1.10E-03	6.65E-03
123	ASF1B, CDC2, KIF20A	3.72E-03	1.58E-02
124	ASF1B, CDC2, MCM10	7.83E-03	3.10E-02
125	ASF1B, CDC2, NUSAP1	1.20E-02	4.56E-02
126	ASF1B, CDC2, ORC6L	3.16E-03	1.06E-02
127	ASF1B, CDC2, PBK	1.42E-03	9.01E-03
128	ASF1B, CDC2, PLK1	5.91E-03	2.36E-02
129	ASF1B, CDC2, PRC1	6.12E-03	2.32E-02
130	ASF1B, CDC2, PTTG1	1.80E-03	1.13E-02
131	ASF1B, CDC2, RAD51	3.81E-03	1.32E-02
132	ASF1B, CDC2, RAD54L	1.93E-03	5.91E-03
133	ASF1B, CDC2, RRM2	2.56E-03	1.38E-02
134	ASF1B, CDC2, TK1	9.50E-03	4.03E-02
135	ASF1B, CDC2, TOP2A	5.97E-03	1.79E-02
136	ASF1B, CDC20, CDCA3	1.10E-02	4.20E-02
137	ASF1B, CDC20, CDCA8	4.18E-03	2.43E-02
138	ASF1B, CDC20, CDKN3	2.17E-03	1.47E-02
139	ASF1B, CDC20, CENPF	7.86E-04	5.16E-03
140	ASF1B, CDC20, CENPM	7.94E-03	3.05E-02
141	ASF1B, CDC20, CEP55	1.08E-03	5.65E-03
142	ASF1B, CDC20, DLGAP5	2.17E-03	8.26E-03
143	ASF1B, CDC20, DTL	2.29E-03	9.59E-03

144	ASF1B, CDC20, FOXM1	2.86E-03	1.45E-02
145	ASF1B, CDC20, KIAA0101	4.69E-03	1.74E-02
146	ASF1B, CDC20, KIF11	8.41E-04	6.50E-03
147	ASF1B, CDC20, KIF20A	2.67E-03	1.37E-02
148	ASF1B, CDC20, MCM10	6.04E-03	2.82E-02
149	ASF1B, CDC20, NUSAP1	8.32E-03	3.93E-02
150	ASF1B, CDC20, ORC6L	2.25E-03	9.53E-03
151	ASF1B, CDC20, PBK	1.14E-03	8.64E-03
152	ASF1B, CDC20, PLK1	4.16E-03	2.07E-02
153	ASF1B, CDC20, PRC1	4.42E-03	2.04E-02
154	ASF1B, CDC20, PTTG1	1.28E-03	9.90E-03
155	ASF1B, CDC20, RAD51	2.63E-03	1.13E-02
156	ASF1B, CDC20, RAD54L	1.55E-03	5.95E-03
157	ASF1B, CDC20, RRM2	1.82E-03	1.17E-02
158	ASF1B, CDC20, TK1	6.67E-03	3.40E-02
159	ASF1B, CDC20, TOP2A	3.72E-03	1.44E-02
160	ASF1B, CDCA3, CDCA8	6.80E-03	4.02E-02
161	ASF1B, CDCA3, CDKN3	5.46E-03	3.37E-02
162	ASF1B, CDCA3, CENPF	1.91E-03	1.19E-02
163	ASF1B, CDCA3, CENPM	1.93E-02	6.95E-02
164	ASF1B, CDCA3, CEP55	3.48E-03	1.53E-02
165	ASF1B, CDCA3, DLGAP5	3.71E-03	1.41E-02
166	ASF1B, CDCA3, DTL	4.16E-03	1.68E-02
167	ASF1B, CDCA3, FOXM1	7.62E-03	3.31E-02
168	ASF1B, CDCA3, KIAA0101	1.05E-02	3.43E-02
169	ASF1B, CDCA3, KIF11	1.93E-03	1.31E-02
170	ASF1B, CDCA3, KIF20A	4.33E-03	2.27E-02
171	ASF1B, CDCA3, MCM10	1.21E-02	5.15E-02
172	ASF1B, CDCA3, NUSAP1	1.57E-02	7.15E-02
173	ASF1B, CDCA3, ORC6L	5.23E-03	2.25E-02
174	ASF1B, CDCA3, PBK	2.99E-03	1.85E-02
175	ASF1B, CDCA3, PLK1	8.60E-03	3.98E-02
176	ASF1B, CDCA3, PRC1	8.35E-03	3.78E-02
177	ASF1B, CDCA3, PTTG1	4.10E-03	2.83E-02
178	ASF1B, CDCA3, RAD51	7.43E-03	2.95E-02
179	ASF1B, CDCA3, RAD54L	3.15E-03	1.22E-02
180	ASF1B, CDCA3, RRM2	3.70E-03	2.44E-02
181	ASF1B, CDCA3, TK1	1.09E-02	5.62E-02
182	ASF1B, CDCA3, TOP2A	7.60E-03	2.85E-02
183	ASF1B, CDCA8, CDKN3	1.61E-03	1.67E-02
184	ASF1B, CDCA8, CENPF	4.76E-04	5.13E-03
185	ASF1B, CDCA8, CENPM	7.36E-03	3.88E-02
186	ASF1B, CDCA8, CEP55	6.52E-04	5.55E-03
187	ASF1B, CDCA8, DLGAP5	1.43E-03	8.17E-03
188	ASF1B, CDCA8, DTL	1.54E-03	1.04E-02
189	ASF1B, CDCA8, FOXM1	2.14E-03	1.62E-02
190	ASF1B, CDCA8, KIAA0101	3.37E-03	1.87E-02
191	ASF1B, CDCA8, KIF11	4.69E-04	6.12E-03
192	ASF1B, CDCA8, KIF20A	1.96E-03	1.53E-02
193	ASF1B, CDCA8, MCM10	5.34E-03	3.40E-02
194	ASF1B, CDCA8, NUSAP1	5.94E-03	4.27E-02
195	ASF1B, CDCA8, ORC6L	1.58E-03	1.00E-02
196	ASF1B, CDCA8, PBK	7.40E-04	8.97E-03
197	ASF1B, CDCA8, PLK1	2.99E-03	2.27E-02
198	ASF1B, CDCA8, PRC1	3.98E-03	2.57E-02
199	ASF1B, CDCA8, PTTG1	9.51E-04	1.15E-02
200	ASF1B, CDCA8, RAD51	1.90E-03	1.24E-02
201	ASF1B, CDCA8, RAD54L	1.10E-03	6.27E-03
202	ASF1B, CDCA8, RRM2	1.66E-03	1.49E-02
203	ASF1B, CDCA8, TK1	5.89E-03	4.16E-02
204	ASF1B, CDCA8, TOP2A	2.42E-03	1.44E-02
205	ASF1B, CDKN3, CENPF	2.84E-04	3.20E-03
206	ASF1B, CDKN3, CENPM	3.61E-03	2.30E-02
207	ASF1B, CDKN3, CEP55	4.38E-04	3.82E-03
208	ASF1B, CDKN3, DLGAP5	8.15E-04	5.06E-03
209	ASF1B, CDKN3, DTL	7.22E-04	5.64E-03
210	ASF1B, CDKN3, FOXM1	1.19E-03	1.01E-02
211	ASF1B, CDKN3, KIAA0101	1.73E-03	1.10E-02
212	ASF1B, CDKN3, KIF11	2.61E-04	3.74E-03
213	ASF1B, CDKN3, KIF20A	9.39E-04	8.63E-03
214	ASF1B, CDKN3, MCM10	2.65E-03	2.03E-02

215	ASF1B, CDKN3, NUSAP1	3.34E-03	2.77E-02
216	ASF1B, CDKN3, ORC6L	7.85E-04	5.77E-03
217	ASF1B, CDKN3, PBK	4.24E-04	5.70E-03
218	ASF1B, CDKN3, PLK1	1.87E-03	1.53E-02
219	ASF1B, CDKN3, PRC1	1.63E-03	1.34E-02
220	ASF1B, CDKN3, PTTG1	4.34E-04	6.18E-03
221	ASF1B, CDKN3, RAD51	8.92E-04	6.83E-03
222	ASF1B, CDKN3, RAD54L	4.41E-04	3.05E-03
223	ASF1B, CDKN3, RRM2	6.74E-04	7.84E-03
224	ASF1B, CDKN3, TK1	2.75E-03	2.42E-02
225	ASF1B, CDKN3, TOP2A	1.66E-03	1.03E-02
226	ASF1B, CENPF, CENPM	1.12E-03	7.27E-03
227	ASF1B, CENPF, CEP55	1.90E-04	1.28E-03
228	ASF1B, CENPF, DLGAP5	2.83E-04	1.53E-03
229	ASF1B, CENPF, DTL	3.07E-04	1.82E-03
230	ASF1B, CENPF, FOXM1	4.09E-04	3.23E-03
231	ASF1B, CENPF, KIAA0101	5.75E-04	3.27E-03
232	ASF1B, CENPF, KIF11	5.94E-05	8.09E-04
233	ASF1B, CENPF, KIF20A	2.89E-04	2.63E-03
234	ASF1B, CENPF, MCM10	8.83E-04	6.92E-03
235	ASF1B, CENPF, NUSAP1	1.60E-03	1.30E-02
236	ASF1B, CENPF, ORC6L	2.28E-04	1.53E-03
237	ASF1B, CENPF, PBK	9.06E-05	1.26E-03
238	ASF1B, CENPF, PLK1	8.07E-04	6.05E-03
239	ASF1B, CENPF, PRC1	5.31E-04	4.11E-03
240	ASF1B, CENPF, PTTG1	1.09E-04	1.53E-03
241	ASF1B, CENPF, RAD51	2.48E-04	1.75E-03
242	ASF1B, CENPF, RAD54L	1.54E-04	9.16E-04
243	ASF1B, CENPF, RRM2	2.00E-04	2.29E-03
244	ASF1B, CENPF, TK1	8.31E-04	7.71E-03
245	ASF1B, CENPF, TOP2A	8.32E-04	4.26E-03
246	ASF1B, CENPM, CEP55	2.25E-03	1.13E-02
247	ASF1B, CENPM, DLGAP5	2.96E-03	1.05E-02
248	ASF1B, CENPM, DTL	4.07E-03	1.53E-02
249	ASF1B, CENPM, FOXM1	4.84E-03	2.26E-02
250	ASF1B, CENPM, KIAA0101	9.01E-03	2.97E-02
251	ASF1B, CENPM, KIF11	1.62E-03	1.11E-02
252	ASF1B, CENPM, KIF20A	4.49E-03	2.16E-02
253	ASF1B, CENPM, MCM10	1.21E-02	5.00E-02
254	ASF1B, CENPM, NUSAP1	1.49E-02	6.40E-02
255	ASF1B, CENPM, ORC6L	3.76E-03	1.40E-02
256	ASF1B, CENPM, PBK	1.97E-03	1.43E-02
257	ASF1B, CENPM, PLK1	6.34E-03	2.93E-02
258	ASF1B, CENPM, PRC1	8.48E-03	3.42E-02
259	ASF1B, CENPM, PTTG1	2.30E-03	1.61E-02
260	ASF1B, CENPM, RAD51	5.75E-03	2.12E-02
261	ASF1B, CENPM, RAD54L	2.19E-03	7.62E-03
262	ASF1B, CENPM, RRM2	3.50E-03	1.96E-02
263	ASF1B, CENPM, TK1	1.30E-02	5.83E-02
264	ASF1B, CENPM, TOP2A	9.59E-03	3.25E-02
265	ASF1B, CEP55, DLGAP5	3.86E-04	1.71E-03
266	ASF1B, CEP55, DTL	3.53E-04	1.72E-03
267	ASF1B, CEP55, FOXM1	5.85E-04	3.67E-03
268	ASF1B, CEP55, KIAA0101	1.21E-03	5.17E-03
269	ASF1B, CEP55, KIF11	1.30E-04	1.32E-03
270	ASF1B, CEP55, KIF20A	5.02E-04	3.23E-03
271	ASF1B, CEP55, MCM10	1.47E-03	8.76E-03
272	ASF1B, CEP55, NUSAP1	1.62E-03	1.05E-02
273	ASF1B, CEP55, ORC6L	3.25E-04	1.71E-03
274	ASF1B, CEP55, PBK	2.20E-04	2.18E-03
275	ASF1B, CEP55, PLK1	8.10E-04	5.17E-03
276	ASF1B, CEP55, PRC1	6.81E-04	4.32E-03
277	ASF1B, CEP55, PTTG1	1.83E-04	1.88E-03
278	ASF1B, CEP55, RAD51	5.25E-04	2.66E-03
279	ASF1B, CEP55, RAD54L	1.46E-04	6.98E-04
280	ASF1B, CEP55, RRM2	2.69E-04	2.43E-03
281	ASF1B, CEP55, TK1	1.38E-03	9.56E-03
282	ASF1B, CEP55, TOP2A	1.77E-03	7.12E-03
283	ASF1B, DLGAP5, DTL	8.14E-04	2.87E-03
284	ASF1B, DLGAP5, FOXM1	1.02E-03	4.77E-03
285	ASF1B, DLGAP5, KIAA0101	1.90E-03	6.30E-03

286	ASF1B, DLGAP5, KIF11	2.95E-04	1.99E-03
287	ASF1B, DLGAP5, KIF20A	9.84E-04	4.57E-03
288	ASF1B, DLGAP5, MCM10	2.55E-03	1.14E-02
289	ASF1B, DLGAP5, NUSAP1	2.94E-03	1.36E-02
290	ASF1B, DLGAP5, ORC6L	8.27E-04	2.96E-03
291	ASF1B, DLGAP5, PBK	3.92E-04	2.76E-03
292	ASF1B, DLGAP5, PLK1	1.53E-03	6.93E-03
293	ASF1B, DLGAP5, PRC1	1.71E-03	7.12E-03
294	ASF1B, DLGAP5, PTTG1	4.01E-04	2.83E-03
295	ASF1B, DLGAP5, RAD51	1.05E-03	3.92E-03
296	ASF1B, DLGAP5, RAD54L	5.52E-04	1.76E-03
297	ASF1B, DLGAP5, RRM2	5.71E-04	3.44E-03
298	ASF1B, DLGAP5, TK1	2.53E-03	1.25E-02
299	ASF1B, DLGAP5, TOP2A	1.47E-03	4.97E-03
300	ASF1B, DTL, FOXM1	1.06E-03	5.68E-03
301	ASF1B, DTL, KIAA0101	2.07E-03	7.19E-03
302	ASF1B, DTL, KIF11	1.68E-04	1.49E-03
303	ASF1B, DTL, KIF20A	8.85E-04	4.82E-03
304	ASF1B, DTL, MCM10	2.79E-03	1.40E-02
305	ASF1B, DTL, NUSAP1	4.28E-03	2.18E-02
306	ASF1B, DTL, ORC6L	7.50E-04	2.93E-03
307	ASF1B, DTL, PBK	2.80E-04	2.58E-03
308	ASF1B, DTL, PLK1	1.97E-03	1.01E-02
309	ASF1B, DTL, PRC1	1.81E-03	8.40E-03
310	ASF1B, DTL, PTTG1	3.15E-04	2.93E-03
311	ASF1B, DTL, RAD51	1.03E-03	4.23E-03
312	ASF1B, DTL, RAD54L	4.90E-04	1.66E-03
313	ASF1B, DTL, RRM2	5.65E-04	4.05E-03
314	ASF1B, DTL, TK1	3.19E-03	1.78E-02
315	ASF1B, DTL, TOP2A	1.83E-03	6.58E-03
316	ASF1B, FOXM1, KIAA0101	2.35E-03	1.08E-02
317	ASF1B, FOXM1, KIF11	3.69E-04	3.67E-03
318	ASF1B, FOXM1, KIF20A	1.24E-03	8.26E-03
319	ASF1B, FOXM1, MCM10	3.62E-03	2.06E-02
320	ASF1B, FOXM1, NUSAP1	4.66E-03	2.78E-02
321	ASF1B, FOXM1, ORC6L	1.07E-03	5.58E-03
322	ASF1B, FOXM1, PBK	5.89E-04	5.71E-03
323	ASF1B, FOXM1, PLK1	2.56E-03	1.53E-02
324	ASF1B, FOXM1, PRC1	2.42E-03	1.38E-02
325	ASF1B, FOXM1, PTTG1	5.50E-04	5.67E-03
326	ASF1B, FOXM1, RAD51	1.30E-03	6.97E-03
327	ASF1B, FOXM1, RAD54L	6.80E-04	3.21E-03
328	ASF1B, FOXM1, RRM2	1.01E-03	8.02E-03
329	ASF1B, FOXM1, TK1	3.63E-03	2.39E-02
330	ASF1B, FOXM1, TOP2A	2.12E-03	9.78E-03
331	ASF1B, KIAA0101, KIF11	6.94E-04	4.80E-03
332	ASF1B, KIAA0101, KIF20A	2.41E-03	1.11E-02
333	ASF1B, KIAA0101, MCM10	5.89E-03	2.49E-02
334	ASF1B, KIAA0101, NUSAP1	7.48E-03	3.27E-02
335	ASF1B, KIAA0101, ORC6L	2.21E-03	7.84E-03
336	ASF1B, KIAA0101, PBK	9.98E-04	6.89E-03
337	ASF1B, KIAA0101, PLK1	3.26E-03	1.48E-02
338	ASF1B, KIAA0101, PRC1	4.36E-03	1.75E-02
339	ASF1B, KIAA0101, PTTG1	9.77E-04	7.01E-03
340	ASF1B, KIAA0101, RAD51	2.59E-03	9.45E-03
341	ASF1B, KIAA0101, RAD54L	1.27E-03	4.19E-03
342	ASF1B, KIAA0101, RRM2	1.53E-03	8.91E-03
343	ASF1B, KIAA0101, TK1	6.47E-03	2.94E-02
344	ASF1B, KIAA0101, TOP2A	3.77E-03	1.24E-02
345	ASF1B, KIF11, KIF20A	2.55E-04	2.83E-03
346	ASF1B, KIF11, MCM10	1.00E-03	9.14E-03
347	ASF1B, KIF11, NUSAP1	1.35E-03	1.31E-02
348	ASF1B, KIF11, ORC6L	2.40E-04	1.99E-03
349	ASF1B, KIF11, PBK	1.01E-04	1.57E-03
350	ASF1B, KIF11, PLK1	6.13E-04	5.86E-03
351	ASF1B, KIF11, PRC1	5.77E-04	5.42E-03
352	ASF1B, KIF11, PTTG1	1.43E-04	2.51E-03
353	ASF1B, KIF11, RAD51	3.10E-04	2.63E-03
354	ASF1B, KIF11, RAD54L	1.43E-04	1.08E-03
355	ASF1B, KIF11, RRM2	2.14E-04	2.83E-03
356	ASF1B, KIF11, TK1	8.88E-04	9.67E-03

357	ASF1B, KIF11, TOP2A	7.05E-04	4.60E-03
358	ASF1B, KIF20A, MCM10	3.31E-03	1.94E-02
359	ASF1B, KIF20A, NUSAP1	4.29E-03	2.75E-02
360	ASF1B, KIF20A, ORC6L	9.95E-04	5.37E-03
361	ASF1B, KIF20A, PBK	4.45E-04	4.59E-03
362	ASF1B, KIF20A, PLK1	1.68E-03	1.13E-02
363	ASF1B, KIF20A, PRC1	2.26E-03	1.33E-02
364	ASF1B, KIF20A, PTTG1	5.20E-04	5.47E-03
365	ASF1B, KIF20A, RAD51	1.19E-03	6.43E-03
366	ASF1B, KIF20A, RAD54L	6.42E-04	3.12E-03
367	ASF1B, KIF20A, RRM2	8.02E-04	6.96E-03
368	ASF1B, KIF20A, TK1	3.41E-03	2.24E-02
369	ASF1B, KIF20A, TOP2A	1.79E-03	8.53E-03
370	ASF1B, MCM10, NUSAP1	8.64E-03	4.77E-02
371	ASF1B, MCM10, ORC6L	2.67E-03	1.29E-02
372	ASF1B, MCM10, PBK	1.57E-03	1.33E-02
373	ASF1B, MCM10, PLK1	4.42E-03	2.61E-02
374	ASF1B, MCM10, PRC1	6.13E-03	3.08E-02
375	ASF1B, MCM10, PTTG1	1.69E-03	1.47E-02
376	ASF1B, MCM10, RAD51	3.56E-03	1.72E-02
377	ASF1B, MCM10, RAD54L	1.90E-03	8.51E-03
378	ASF1B, MCM10, RRM2	2.45E-03	1.72E-02
379	ASF1B, MCM10, TK1	8.62E-03	4.74E-02
380	ASF1B, MCM10, TOP2A	4.05E-03	1.83E-02
381	ASF1B, NUSAP1, ORC6L	3.22E-03	1.71E-02
382	ASF1B, NUSAP1, PBK	1.62E-03	1.53E-02
383	ASF1B, NUSAP1, PLK1	7.95E-03	4.54E-02
384	ASF1B, NUSAP1, PRC1	7.05E-03	3.93E-02
385	ASF1B, NUSAP1, PTTG1	2.08E-03	2.03E-02
386	ASF1B, NUSAP1, RAD51	4.27E-03	2.23E-02
387	ASF1B, NUSAP1, RAD54L	2.22E-03	1.10E-02
388	ASF1B, NUSAP1, RRM2	3.19E-03	2.41E-02
389	ASF1B, NUSAP1, TK1	1.04E-02	6.25E-02
390	ASF1B, NUSAP1, TOP2A	7.26E-03	3.09E-02
391	ASF1B, ORC6L, PBK	4.56E-04	3.68E-03
392	ASF1B, ORC6L, PLK1	1.73E-03	8.80E-03
393	ASF1B, ORC6L, PRC1	2.03E-03	8.87E-03
394	ASF1B, ORC6L, PTTG1	3.52E-04	2.96E-03
395	ASF1B, ORC6L, RAD51	1.06E-03	4.24E-03
396	ASF1B, ORC6L, RAD54L	5.64E-04	1.95E-03
397	ASF1B, ORC6L, RRM2	7.18E-04	4.83E-03
398	ASF1B, ORC6L, TK1	2.99E-03	1.60E-02
399	ASF1B, ORC6L, TOP2A	1.44E-03	5.50E-03
400	ASF1B, PBK, PLK1	6.97E-04	6.81E-03
401	ASF1B, PBK, PRC1	9.38E-04	8.42E-03
402	ASF1B, PBK, PTTG1	2.07E-04	3.50E-03
403	ASF1B, PBK, RAD51	5.43E-04	4.55E-03
404	ASF1B, PBK, RAD54L	2.68E-04	2.03E-03
405	ASF1B, PBK, RRM2	3.09E-04	4.14E-03
406	ASF1B, PBK, TK1	1.20E-03	1.24E-02
407	ASF1B, PBK, TOP2A	7.83E-04	5.49E-03
408	ASF1B, PLK1, PRC1	3.24E-03	1.89E-02
409	ASF1B, PLK1, PTTG1	9.78E-04	9.54E-03
410	ASF1B, PLK1, RAD51	1.86E-03	9.88E-03
411	ASF1B, PLK1, RAD54L	1.05E-03	4.88E-03
412	ASF1B, PLK1, RRM2	1.50E-03	1.16E-02
413	ASF1B, PLK1, TK1	5.40E-03	3.53E-02
414	ASF1B, PLK1, TOP2A	3.80E-03	1.68E-02
415	ASF1B, PRC1, PTTG1	9.43E-04	8.74E-03
416	ASF1B, PRC1, RAD51	2.33E-03	1.09E-02
417	ASF1B, PRC1, RAD54L	1.33E-03	5.30E-03
418	ASF1B, PRC1, RRM2	1.81E-03	1.24E-02
419	ASF1B, PRC1, TK1	6.44E-03	3.62E-02
420	ASF1B, PRC1, TOP2A	2.57E-03	1.14E-02
421	ASF1B, PTTG1, RAD51	4.80E-04	4.09E-03
422	ASF1B, PTTG1, RAD54L	2.31E-04	1.70E-03
423	ASF1B, PTTG1, RRM2	3.58E-04	4.77E-03
424	ASF1B, PTTG1, TK1	1.79E-03	1.80E-02
425	ASF1B, PTTG1, TOP2A	9.20E-04	6.45E-03
426	ASF1B, RAD51, RAD54L	6.59E-04	2.40E-03
427	ASF1B, RAD51, RRM2	8.00E-04	5.55E-03

428	ASF1B, RAD51, TK1	3.72E-03	2.00E-02
429	ASF1B, RAD51, TOP2A	2.03E-03	7.85E-03
430	ASF1B, RAD54L, RRM2	4.39E-04	2.64E-03
431	ASF1B, RAD54L, TK1	1.96E-03	9.72E-03
432	ASF1B, RAD54L, TOP2A	7.25E-04	2.53E-03
433	ASF1B, RRM2, TK1	2.71E-03	2.11E-02
434	ASF1B, RRM2, TOP2A	1.19E-03	7.33E-03
435	ASF1B, TK1, TOP2A	4.41E-03	2.28E-02
436	ASPM, BIRC5, BUB1B	1.82E-03	2.05E-02
437	ASPM, BIRC5, C18orf24	2.32E-04	3.07E-03
438	ASPM, BIRC5, CDC2	2.64E-03	1.60E-02
439	ASPM, BIRC5, CDC20	2.21E-03	1.50E-02
440	ASPM, BIRC5, CDCA3	4.61E-03	2.42E-02
441	ASPM, BIRC5, CDCA8	1.90E-03	1.87E-02
442	ASPM, BIRC5, CDKN3	1.19E-03	1.25E-02
443	ASPM, BIRC5, CENPF	5.88E-04	5.13E-03
444	ASPM, BIRC5, CENPM	3.16E-03	2.09E-02
445	ASPM, BIRC5, CEP55	6.89E-04	5.68E-03
446	ASPM, BIRC5, DLGAP5	9.00E-04	5.95E-03
447	ASPM, BIRC5, DTL	1.03E-03	7.39E-03
448	ASPM, BIRC5, FOXM1	1.63E-03	1.23E-02
449	ASPM, BIRC5, KIAA0101	1.90E-03	1.18E-02
450	ASPM, BIRC5, KIF11	2.78E-04	4.12E-03
451	ASPM, BIRC5, KIF20A	1.17E-03	1.03E-02
452	ASPM, BIRC5, MCM10	3.14E-03	2.26E-02
453	ASPM, BIRC5, NUSAP1	2.93E-03	2.45E-02
454	ASPM, BIRC5, ORC6L	8.68E-04	6.70E-03
455	ASPM, BIRC5, PBK	4.64E-04	5.90E-03
456	ASPM, BIRC5, PLK1	2.02E-03	1.66E-02
457	ASPM, BIRC5, PRC1	2.38E-03	1.72E-02
458	ASPM, BIRC5, PTTG1	5.14E-04	6.82E-03
459	ASPM, BIRC5, RAD51	9.23E-04	6.95E-03
460	ASPM, BIRC5, RAD54L	5.54E-04	3.79E-03
461	ASPM, BIRC5, RRM2	8.22E-04	8.72E-03
462	ASPM, BIRC5, TK1	2.90E-03	2.53E-02
463	ASPM, BIRC5, TOP2A	1.89E-03	1.10E-02
464	ASPM, BUB1B, C18orf24	1.30E-04	2.53E-03
465	ASPM, BUB1B, CDC2	1.45E-03	1.22E-02
466	ASPM, BUB1B, CDC20	1.40E-03	1.28E-02
467	ASPM, BUB1B, CDCA3	2.74E-03	2.02E-02
468	ASPM, BUB1B, CDCA8	1.51E-03	1.80E-02
469	ASPM, BUB1B, CDKN3	7.21E-04	1.04E-02
470	ASPM, BUB1B, CENPF	3.12E-04	4.04E-03
471	ASPM, BUB1B, CENPM	1.94E-03	1.66E-02
472	ASPM, BUB1B, CEP55	2.87E-04	3.43E-03
473	ASPM, BUB1B, DLGAP5	5.29E-04	4.65E-03
474	ASPM, BUB1B, DTL	6.31E-04	6.47E-03
475	ASPM, BUB1B, FOXM1	1.11E-03	1.12E-02
476	ASPM, BUB1B, KIAA0101	1.19E-03	1.01E-02
477	ASPM, BUB1B, KIF11	1.52E-04	3.01E-03
478	ASPM, BUB1B, KIF20A	7.30E-04	8.54E-03
479	ASPM, BUB1B, MCM10	2.40E-03	2.15E-02
480	ASPM, BUB1B, NUSAP1	2.12E-03	2.34E-02
481	ASPM, BUB1B, ORC6L	5.55E-04	5.52E-03
482	ASPM, BUB1B, PBK	2.28E-04	4.24E-03
483	ASPM, BUB1B, PLK1	1.34E-03	1.47E-02
484	ASPM, BUB1B, PRC1	1.95E-03	1.71E-02
485	ASPM, BUB1B, PTTG1	3.31E-04	6.09E-03
486	ASPM, BUB1B, RAD51	6.74E-04	6.65E-03
487	ASPM, BUB1B, RAD54L	3.83E-04	3.35E-03
488	ASPM, BUB1B, RRM2	6.74E-04	8.51E-03
489	ASPM, BUB1B, TK1	1.95E-03	2.23E-02
490	ASPM, BUB1B, TOP2A	7.28E-04	6.57E-03
491	ASPM, C18orf24, CDC2	2.11E-04	1.78E-03
492	ASPM, C18orf24, CDC20	1.96E-04	2.00E-03
493	ASPM, C18orf24, CDCA3	7.15E-04	5.46E-03
494	ASPM, C18orf24, CDCA8	1.20E-04	2.01E-03
495	ASPM, C18orf24, CDKN3	8.72E-05	1.44E-03
496	ASPM, C18orf24, CENPF	4.28E-05	5.52E-04
497	ASPM, C18orf24, CENPM	2.03E-04	2.24E-03
498	ASPM, C18orf24, CEP55	4.00E-05	4.75E-04

499	ASPM, C18orf24, DLGAP5	6.33E-05	5.62E-04
500	ASPM, C18orf24, DTL	4.73E-05	5.35E-04
501	ASPM, C18orf24, FOXM1	1.40E-04	1.63E-03
502	ASPM, C18orf24, KIAA0101	1.23E-04	1.15E-03
503	ASPM, C18orf24, KIF11	1.20E-05	2.70E-04
504	ASPM, C18orf24, KIF20A	5.91E-05	8.28E-04
505	ASPM, C18orf24, MCM10	2.54E-04	3.01E-03
506	ASPM, C18orf24, NUSAP1	2.62E-04	3.58E-03
507	ASPM, C18orf24, ORC6L	4.29E-05	5.03E-04
508	ASPM, C18orf24, PBK	2.57E-05	5.23E-04
509	ASPM, C18orf24, PLK1	1.85E-04	2.26E-03
510	ASPM, C18orf24, PRC1	1.23E-04	1.55E-03
511	ASPM, C18orf24, PTTG1	2.03E-05	4.67E-04
512	ASPM, C18orf24, RAD51	5.05E-05	5.86E-04
513	ASPM, C18orf24, RAD54L	2.54E-05	2.61E-04
514	ASPM, C18orf24, RRM2	4.56E-05	8.23E-04
515	ASPM, C18orf24, TK1	1.80E-04	2.84E-03
516	ASPM, C18orf24, TOP2A	1.67E-04	1.40E-03
517	ASPM, CDC2, CDC20	2.65E-03	1.18E-02
518	ASPM, CDC2, CDCA3	4.86E-03	1.76E-02
519	ASPM, CDC2, CDCA8	1.92E-03	1.27E-02
520	ASPM, CDC2, CDKN3	1.05E-03	7.81E-03
521	ASPM, CDC2, CENPF	3.88E-04	2.40E-03
522	ASPM, CDC2, CENPM	4.07E-03	1.61E-02
523	ASPM, CDC2, CEP55	6.51E-04	3.26E-03
524	ASPM, CDC2, DLGAP5	1.01E-03	4.12E-03
525	ASPM, CDC2, DTL	9.88E-04	4.32E-03
526	ASPM, CDC2, FOXM1	1.56E-03	8.15E-03
527	ASPM, CDC2, KIAA0101	2.53E-03	9.92E-03
528	ASPM, CDC2, KIF11	2.74E-04	2.24E-03
529	ASPM, CDC2, KIF20A	1.29E-03	7.23E-03
530	ASPM, CDC2, MCM10	3.27E-03	1.65E-02
531	ASPM, CDC2, NUSAP1	3.55E-03	1.89E-02
532	ASPM, CDC2, ORC6L	9.63E-04	4.40E-03
533	ASPM, CDC2, PBK	3.96E-04	3.40E-03
534	ASPM, CDC2, PLK1	1.91E-03	1.03E-02
535	ASPM, CDC2, PRC1	2.48E-03	1.19E-02
536	ASPM, CDC2, PTTG1	4.79E-04	4.21E-03
537	ASPM, CDC2, RAD51	1.10E-03	5.15E-03
538	ASPM, CDC2, RAD54L	6.06E-04	2.41E-03
539	ASPM, CDC2, RRM2	8.68E-04	6.05E-03
540	ASPM, CDC2, TK1	3.05E-03	1.82E-02
541	ASPM, CDC2, TOP2A	1.86E-03	6.94E-03
542	ASPM, CDC20, CDCA3	4.56E-03	1.89E-02
543	ASPM, CDC20, CDCA8	1.80E-03	1.31E-02
544	ASPM, CDC20, CDKN3	9.36E-04	7.82E-03
545	ASPM, CDC20, CENPF	3.69E-04	2.79E-03
546	ASPM, CDC20, CENPM	2.64E-03	1.31E-02
547	ASPM, CDC20, CEP55	4.50E-04	2.89E-03
548	ASPM, CDC20, DLGAP5	8.52E-04	4.11E-03
549	ASPM, CDC20, DTL	8.06E-04	4.37E-03
550	ASPM, CDC20, FOXM1	1.36E-03	8.26E-03
551	ASPM, CDC20, KIAA0101	1.85E-03	8.65E-03
552	ASPM, CDC20, KIF11	2.48E-04	2.53E-03
553	ASPM, CDC20, KIF20A	1.10E-03	7.08E-03
554	ASPM, CDC20, MCM10	2.86E-03	1.62E-02
555	ASPM, CDC20, NUSAP1	2.95E-03	1.84E-02
556	ASPM, CDC20, ORC6L	8.38E-04	4.60E-03
557	ASPM, CDC20, PBK	3.80E-04	3.69E-03
558	ASPM, CDC20, PLK1	1.61E-03	1.03E-02
559	ASPM, CDC20, PRC1	2.12E-03	1.16E-02
560	ASPM, CDC20, PTTG1	4.24E-04	4.31E-03
561	ASPM, CDC20, RAD51	9.23E-04	5.08E-03
562	ASPM, CDC20, RAD54L	5.89E-04	2.81E-03
563	ASPM, CDC20, RRM2	7.37E-04	5.82E-03
564	ASPM, CDC20, TK1	2.53E-03	1.70E-02
565	ASPM, CDC20, TOP2A	1.30E-03	6.24E-03
566	ASPM, CDCA3, CDCA8	2.79E-03	1.78E-02
567	ASPM, CDCA3, CDKN3	2.27E-03	1.50E-02
568	ASPM, CDCA3, CENPF	9.04E-04	5.47E-03
569	ASPM, CDCA3, CENPM	6.65E-03	2.70E-02

570	ASPM, CDCA3, CEP55	1.40E-03	6.32E-03
571	ASPM, CDCA3, DLGAP5	1.53E-03	5.99E-03
572	ASPM, CDCA3, DTL	1.43E-03	6.06E-03
573	ASPM, CDCA3, FOXM1	3.57E-03	1.59E-02
574	ASPM, CDCA3, KIAA0101	3.96E-03	1.39E-02
575	ASPM, CDCA3, KIF11	6.68E-04	4.89E-03
576	ASPM, CDCA3, KIF20A	1.66E-03	9.24E-03
577	ASPM, CDCA3, MCM10	5.50E-03	2.48E-02
578	ASPM, CDCA3, NUSAP1	5.67E-03	3.03E-02
579	ASPM, CDCA3, ORC6L	1.95E-03	9.02E-03
580	ASPM, CDCA3, PBK	1.22E-03	8.02E-03
581	ASPM, CDCA3, PLK1	3.35E-03	1.68E-02
582	ASPM, CDCA3, PRC1	3.59E-03	1.69E-02
583	ASPM, CDCA3, PTTG1	1.37E-03	1.03E-02
584	ASPM, CDCA3, RAD51	2.60E-03	1.13E-02
585	ASPM, CDCA3, RAD54L	1.15E-03	4.59E-03
586	ASPM, CDCA3, RRM2	1.53E-03	1.07E-02
587	ASPM, CDCA3, TK1	4.07E-03	2.40E-02
588	ASPM, CDCA3, TOP2A	2.85E-03	1.14E-02
589	ASPM, CDCA8, CDKN3	7.76E-04	9.55E-03
590	ASPM, CDCA8, CENPF	2.64E-04	3.09E-03
591	ASPM, CDCA8, CENPM	2.54E-03	1.74E-02
592	ASPM, CDCA8, CEP55	3.18E-04	3.18E-03
593	ASPM, CDCA8, DLGAP5	6.03E-04	4.32E-03
594	ASPM, CDCA8, DTL	6.19E-04	5.23E-03
595	ASPM, CDCA8, FOXM1	1.14E-03	9.91E-03
596	ASPM, CDCA8, KIAA0101	1.41E-03	9.80E-03
597	ASPM, CDCA8, KIF11	1.54E-04	2.58E-03
598	ASPM, CDCA8, KIF20A	8.89E-04	8.46E-03
599	ASPM, CDCA8, MCM10	2.72E-03	2.06E-02
600	ASPM, CDCA8, NUSAP1	2.15E-03	2.05E-02
601	ASPM, CDCA8, ORC6L	6.42E-04	5.24E-03
602	ASPM, CDCA8, PBK	2.67E-04	4.05E-03
603	ASPM, CDCA8, PLK1	1.27E-03	1.21E-02
604	ASPM, CDCA8, PRC1	2.13E-03	1.58E-02
605	ASPM, CDCA8, PTTG1	3.59E-04	5.50E-03
606	ASPM, CDCA8, RAD51	7.15E-04	5.93E-03
607	ASPM, CDCA8, RAD54L	4.58E-04	3.21E-03
608	ASPM, CDCA8, RRM2	7.45E-04	7.99E-03
609	ASPM, CDCA8, TK1	2.39E-03	2.19E-02
610	ASPM, CDCA8, TOP2A	8.82E-04	6.43E-03
611	ASPM, CDKN3, CENPF	1.61E-04	1.97E-03
612	ASPM, CDKN3, CENPM	1.24E-03	1.01E-02
613	ASPM, CDKN3, CEP55	2.19E-04	2.23E-03
614	ASPM, CDKN3, DLGAP5	3.48E-04	2.70E-03
615	ASPM, CDKN3, DTL	2.98E-04	2.90E-03
616	ASPM, CDKN3, FOXM1	6.54E-04	6.29E-03
617	ASPM, CDKN3, KIAA0101	7.28E-04	5.75E-03
618	ASPM, CDKN3, KIF11	9.02E-05	1.61E-03
619	ASPM, CDKN3, KIF20A	4.31E-04	4.77E-03
620	ASPM, CDKN3, MCM10	1.37E-03	1.23E-02
621	ASPM, CDKN3, NUSAP1	1.22E-03	1.31E-02
622	ASPM, CDKN3, ORC6L	3.23E-04	3.03E-03
623	ASPM, CDKN3, PBK	1.54E-04	2.57E-03
624	ASPM, CDKN3, PLK1	8.06E-04	8.19E-03
625	ASPM, CDKN3, PRC1	9.10E-04	8.44E-03
626	ASPM, CDKN3, PTTG1	1.67E-04	2.96E-03
627	ASPM, CDKN3, RAD51	3.37E-04	3.25E-03
628	ASPM, CDKN3, RAD54L	1.86E-04	1.56E-03
629	ASPM, CDKN3, RRM2	3.11E-04	4.21E-03
630	ASPM, CDKN3, TK1	1.10E-03	1.25E-02
631	ASPM, CDKN3, TOP2A	6.17E-04	4.63E-03
632	ASPM, CENPF, CENPM	4.15E-04	3.14E-03
633	ASPM, CENPF, CEP55	1.07E-04	8.08E-04
634	ASPM, CENPF, DLGAP5	1.37E-04	8.61E-04
635	ASPM, CENPF, DTL	1.44E-04	9.99E-04
636	ASPM, CENPF, FOXM1	2.65E-04	2.19E-03
637	ASPM, CENPF, KIAA0101	2.69E-04	1.75E-03
638	ASPM, CENPF, KIF11	2.32E-05	3.60E-04
639	ASPM, CENPF, KIF20A	1.52E-04	1.52E-03
640	ASPM, CENPF, MCM10	5.14E-04	4.37E-03

641	ASPM, CENPF, NUSAP1	6.32E-04	6.18E-03
642	ASPM, CENPF, ORC6L	1.09E-04	8.58E-04
643	ASPM, CENPF, PBK	3.74E-05	5.77E-04
644	ASPM, CENPF, PLK1	3.89E-04	3.38E-03
645	ASPM, CENPF, PRC1	3.54E-04	2.82E-03
646	ASPM, CENPF, PTTG1	5.07E-05	7.82E-04
647	ASPM, CENPF, RAD51	1.09E-04	8.67E-04
648	ASPM, CENPF, RAD54L	7.50E-05	4.94E-04
649	ASPM, CENPF, RRM2	1.10E-04	1.31E-03
650	ASPM, CENPF, TK1	3.74E-04	4.07E-03
651	ASPM, CENPF, TOP2A	3.42E-04	1.99E-03
652	ASPM, CENPM, CEP55	7.98E-04	5.10E-03
653	ASPM, CENPM, DLGAP5	9.63E-04	4.34E-03
654	ASPM, CENPM, DTL	1.05E-03	5.32E-03
655	ASPM, CENPM, FOXM1	1.89E-03	1.07E-02
656	ASPM, CENPM, KIAA0101	2.80E-03	1.21E-02
657	ASPM, CENPM, KIF11	3.53E-04	3.38E-03
658	ASPM, CENPM, KIF20A	1.41E-03	8.92E-03
659	ASPM, CENPM, MCM10	4.79E-03	2.48E-02
660	ASPM, CENPM, NUSAP1	4.09E-03	2.48E-02
661	ASPM, CENPM, ORC6L	1.09E-03	5.42E-03
662	ASPM, CENPM, PBK	5.11E-04	4.91E-03
663	ASPM, CENPM, PLK1	1.99E-03	1.20E-02
664	ASPM, CENPM, PRC1	3.04E-03	1.55E-02
665	ASPM, CENPM, PTTG1	5.57E-04	5.37E-03
666	ASPM, CENPM, RAD51	1.51E-03	7.46E-03
667	ASPM, CENPM, RAD54L	6.02E-04	2.70E-03
668	ASPM, CENPM, RRM2	1.14E-03	8.07E-03
669	ASPM, CENPM, TK1	4.00E-03	2.47E-02
670	ASPM, CENPM, TOP2A	2.94E-03	1.27E-02
671	ASPM, CEP55, DLGAP5	1.73E-04	9.53E-04
672	ASPM, CEP55, DTL	1.44E-04	9.14E-04
673	ASPM, CEP55, FOXM1	3.26E-04	2.34E-03
674	ASPM, CEP55, KIAA0101	4.79E-04	2.59E-03
675	ASPM, CEP55, KIF11	4.17E-05	5.46E-04
676	ASPM, CEP55, KIF20A	2.19E-04	1.73E-03
677	ASPM, CEP55, MCM10	7.48E-04	5.25E-03
678	ASPM, CEP55, NUSAP1	5.40E-04	4.57E-03
679	ASPM, CEP55, ORC6L	1.29E-04	8.78E-04
680	ASPM, CEP55, PBK	7.75E-05	9.41E-04
681	ASPM, CEP55, PLK1	3.53E-04	2.78E-03
682	ASPM, CEP55, PRC1	3.62E-04	2.70E-03
683	ASPM, CEP55, PTTG1	7.13E-05	9.04E-04
684	ASPM, CEP55, RAD51	1.85E-04	1.20E-03
685	ASPM, CEP55, RAD54L	5.84E-05	3.51E-04
686	ASPM, CEP55, RRM2	1.22E-04	1.26E-03
687	ASPM, CEP55, TK1	5.36E-04	4.74E-03
688	ASPM, CEP55, TOP2A	6.49E-04	3.21E-03
689	ASPM, DLGAP5, DTL	2.87E-04	1.34E-03
690	ASPM, DLGAP5, FOXM1	4.94E-04	2.77E-03
691	ASPM, DLGAP5, KIAA0101	7.21E-04	3.06E-03
692	ASPM, DLGAP5, KIF11	9.17E-05	8.00E-04
693	ASPM, DLGAP5, KIF20A	3.96E-04	2.32E-03
694	ASPM, DLGAP5, MCM10	1.18E-03	6.45E-03
695	ASPM, DLGAP5, NUSAP1	9.68E-04	5.93E-03
696	ASPM, DLGAP5, ORC6L	3.00E-04	1.41E-03
697	ASPM, DLGAP5, PBK	1.24E-04	1.13E-03
698	ASPM, DLGAP5, PLK1	5.80E-04	3.42E-03
699	ASPM, DLGAP5, PRC1	8.17E-04	4.12E-03
700	ASPM, DLGAP5, PTTG1	1.33E-04	1.23E-03
701	ASPM, DLGAP5, RAD51	3.53E-04	1.70E-03
702	ASPM, DLGAP5, RAD54L	2.03E-04	8.16E-04
703	ASPM, DLGAP5, RRM2	2.28E-04	1.66E-03
704	ASPM, DLGAP5, TK1	9.09E-04	5.96E-03
705	ASPM, DLGAP5, TOP2A	5.14E-04	2.10E-03
706	ASPM, DTL, FOXM1	5.14E-04	3.26E-03
707	ASPM, DTL, KIAA0101	7.04E-04	3.20E-03
708	ASPM, DTL, KIF11	4.27E-05	5.16E-04
709	ASPM, DTL, KIF20A	3.36E-04	2.32E-03
710	ASPM, DTL, MCM10	1.26E-03	7.70E-03
711	ASPM, DTL, NUSAP1	1.22E-03	8.55E-03

712	ASPM, DTL, ORC6L	2.41E-04	1.30E-03
713	ASPM, DTL, PBK	7.89E-05	9.42E-04
714	ASPM, DTL, PLK1	6.84E-04	4.67E-03
715	ASPM, DTL, PRC1	8.80E-04	4.85E-03
716	ASPM, DTL, PTTG1	9.17E-05	1.14E-03
717	ASPM, DTL, RAD51	2.97E-04	1.63E-03
718	ASPM, DTL, RAD54L	1.64E-04	7.12E-04
719	ASPM, DTL, RRM2	2.15E-04	1.85E-03
720	ASPM, DTL, TK1	1.01E-03	7.73E-03
721	ASPM, DTL, TOP2A	5.23E-04	2.38E-03
722	ASPM, FOXM1, KIAA0101	1.11E-03	6.09E-03
723	ASPM, FOXM1, KIF11	1.47E-04	1.74E-03
724	ASPM, FOXM1, KIF20A	6.43E-04	4.93E-03
725	ASPM, FOXM1, MCM10	2.02E-03	1.31E-02
726	ASPM, FOXM1, NUSAP1	1.94E-03	1.42E-02
727	ASPM, FOXM1, ORC6L	5.10E-04	3.22E-03
728	ASPM, FOXM1, PBK	2.44E-04	2.79E-03
729	ASPM, FOXM1, PLK1	1.25E-03	8.86E-03
730	ASPM, FOXM1, PRC1	1.47E-03	9.24E-03
731	ASPM, FOXM1, PTTG1	2.53E-04	3.04E-03
732	ASPM, FOXM1, RAD51	5.66E-04	3.65E-03
733	ASPM, FOXM1, RAD54L	3.30E-04	1.81E-03
734	ASPM, FOXM1, RRM2	5.25E-04	4.65E-03
735	ASPM, FOXM1, TK1	1.63E-03	1.32E-02
736	ASPM, FOXM1, TOP2A	8.97E-04	4.82E-03
737	ASPM, KIAA0101, KIF11	1.90E-04	1.76E-03
738	ASPM, KIAA0101, KIF20A	9.76E-04	5.60E-03
739	ASPM, KIAA0101, MCM10	2.76E-03	1.42E-02
740	ASPM, KIAA0101, NUSAP1	2.51E-03	1.46E-02
741	ASPM, KIAA0101, ORC6L	7.92E-04	3.67E-03
742	ASPM, KIAA0101, PBK	3.18E-04	2.83E-03
743	ASPM, KIAA0101, PLK1	1.20E-03	7.08E-03
744	ASPM, KIAA0101, PRC1	2.10E-03	1.00E-02
745	ASPM, KIAA0101, PTTG1	3.07E-04	2.91E-03
746	ASPM, KIAA0101, RAD51	8.68E-04	4.08E-03
747	ASPM, KIAA0101, RAD54L	4.68E-04	1.92E-03
748	ASPM, KIAA0101, RRM2	5.95E-04	4.24E-03
749	ASPM, KIAA0101, TK1	2.35E-03	1.42E-02
750	ASPM, KIAA0101, TOP2A	1.20E-03	4.86E-03
751	ASPM, KIF11, KIF20A	7.38E-05	1.08E-03
752	ASPM, KIF11, MCM10	3.77E-04	4.26E-03
753	ASPM, KIF11, NUSAP1	3.06E-04	4.28E-03
754	ASPM, KIF11, ORC6L	6.20E-05	7.01E-04
755	ASPM, KIF11, PBK	3.14E-05	6.13E-04
756	ASPM, KIF11, PLK1	1.79E-04	2.28E-03
757	ASPM, KIF11, PRC1	2.10E-04	2.45E-03
758	ASPM, KIF11, PTTG1	3.42E-05	8.01E-04
759	ASPM, KIF11, RAD51	7.05E-05	8.17E-04
760	ASPM, KIF11, RAD54L	3.71E-05	3.69E-04
761	ASPM, KIF11, RRM2	6.15E-05	1.02E-03
762	ASPM, KIF11, TK1	2.31E-04	3.53E-03
763	ASPM, KIF11, TOP2A	1.61E-04	1.37E-03
764	ASPM, KIF20A, MCM10	1.64E-03	1.15E-02
765	ASPM, KIF20A, NUSAP1	1.50E-03	1.28E-02
766	ASPM, KIF20A, ORC6L	3.82E-04	2.65E-03
767	ASPM, KIF20A, PBK	1.50E-04	1.95E-03
768	ASPM, KIF20A, PLK1	6.77E-04	5.76E-03
769	ASPM, KIF20A, PRC1	1.20E-03	8.07E-03
770	ASPM, KIF20A, PTTG1	1.81E-04	2.44E-03
771	ASPM, KIF20A, RAD51	4.22E-04	2.90E-03
772	ASPM, KIF20A, RAD54L	2.56E-04	1.52E-03
773	ASPM, KIF20A, RRM2	3.43E-04	3.53E-03
774	ASPM, KIF20A, TK1	1.30E-03	1.12E-02
775	ASPM, KIF20A, TOP2A	5.90E-04	3.47E-03
776	ASPM, MCM10, NUSAP1	3.58E-03	2.49E-02
777	ASPM, MCM10, ORC6L	1.23E-03	7.31E-03
778	ASPM, MCM10, PBK	6.34E-04	6.59E-03
779	ASPM, MCM10, PLK1	2.05E-03	1.48E-02
780	ASPM, MCM10, PRC1	3.49E-03	1.99E-02
781	ASPM, MCM10, PTTG1	7.18E-04	7.67E-03
782	ASPM, MCM10, RAD51	1.53E-03	9.14E-03

783	ASPM, MCM10, RAD54L	8.84E-04	4.73E-03
784	ASPM, MCM10, RRM2	1.20E-03	9.81E-03
785	ASPM, MCM10, TK1	3.89E-03	2.68E-02
786	ASPM, MCM10, TOP2A	1.64E-03	8.96E-03
787	ASPM, NUSAP1, ORC6L	9.86E-04	7.16E-03
788	ASPM, NUSAP1, PBK	4.44E-04	5.71E-03
789	ASPM, NUSAP1, PLK1	2.63E-03	2.03E-02
790	ASPM, NUSAP1, PRC1	2.95E-03	2.02E-02
791	ASPM, NUSAP1, PTTG1	5.40E-04	7.54E-03
792	ASPM, NUSAP1, RAD51	1.23E-03	8.76E-03
793	ASPM, NUSAP1, RAD54L	7.00E-04	4.54E-03
794	ASPM, NUSAP1, RRM2	1.09E-03	1.07E-02
795	ASPM, NUSAP1, TK1	3.30E-03	2.80E-02
796	ASPM, NUSAP1, TOP2A	2.09E-03	1.17E-02
797	ASPM, ORC6L, PBK	1.40E-04	1.48E-03
798	ASPM, ORC6L, PLK1	6.14E-04	4.19E-03
799	ASPM, ORC6L, PRC1	9.57E-04	5.12E-03
800	ASPM, ORC6L, PTTG1	1.03E-04	1.19E-03
801	ASPM, ORC6L, RAD51	3.27E-04	1.75E-03
802	ASPM, ORC6L, RAD54L	1.97E-04	8.73E-04
803	ASPM, ORC6L, RRM2	2.74E-04	2.29E-03
804	ASPM, ORC6L, TK1	1.01E-03	7.42E-03
805	ASPM, ORC6L, TOP2A	4.29E-04	2.08E-03
806	ASPM, PBK, PLK1	2.21E-04	2.78E-03
807	ASPM, PBK, PRC1	3.95E-04	4.15E-03
808	ASPM, PBK, PTTG1	5.53E-05	1.23E-03
809	ASPM, PBK, RAD51	1.50E-04	1.64E-03
810	ASPM, PBK, RAD54L	8.21E-05	7.73E-04
811	ASPM, PBK, RRM2	1.04E-04	1.70E-03
812	ASPM, PBK, TK1	3.52E-04	4.98E-03
813	ASPM, PBK, TOP2A	2.13E-04	1.86E-03
814	ASPM, PLK1, PRC1	1.59E-03	1.10E-02
815	ASPM, PLK1, PTTG1	3.21E-04	4.13E-03
816	ASPM, PLK1, RAD51	6.00E-04	4.23E-03
817	ASPM, PLK1, RAD54L	3.82E-04	2.27E-03
818	ASPM, PLK1, RRM2	6.11E-04	5.74E-03
819	ASPM, PLK1, TK1	1.91E-03	1.69E-02
820	ASPM, PLK1, TOP2A	1.29E-03	7.13E-03
821	ASPM, PRC1, PTTG1	4.27E-04	4.66E-03
822	ASPM, PRC1, RAD51	1.03E-03	5.75E-03
823	ASPM, PRC1, RAD54L	6.57E-04	3.03E-03
824	ASPM, PRC1, RRM2	9.37E-04	7.20E-03
825	ASPM, PRC1, TK1	2.92E-03	2.02E-02
826	ASPM, PRC1, TOP2A	9.82E-04	5.24E-03
827	ASPM, PTTG1, RAD51	1.25E-04	1.44E-03
828	ASPM, PTTG1, RAD54L	6.96E-05	6.61E-04
829	ASPM, PTTG1, RRM2	1.24E-04	2.03E-03
830	ASPM, PTTG1, TK1	5.34E-04	7.52E-03
831	ASPM, PTTG1, TOP2A	2.47E-04	2.20E-03
832	ASPM, RAD51, RAD54L	2.10E-04	9.53E-04
833	ASPM, RAD51, RRM2	2.81E-04	2.40E-03
834	ASPM, RAD51, TK1	1.18E-03	8.63E-03
835	ASPM, RAD51, TOP2A	5.59E-04	2.72E-03
836	ASPM, RAD54L, RRM2	1.73E-04	1.22E-03
837	ASPM, RAD54L, TK1	6.77E-04	4.39E-03
838	ASPM, RAD54L, TOP2A	2.16E-04	9.12E-04
839	ASPM, RRM2, TK1	1.03E-03	1.03E-02
840	ASPM, RRM2, TOP2A	4.12E-04	3.02E-03
841	ASPM, TK1, TOP2A	1.37E-03	9.30E-03
842	BIRC5, BUB1B, C18orf24	2.10E-04	4.07E-03
843	BIRC5, BUB1B, CDC2	1.90E-03	1.75E-02
844	BIRC5, BUB1B, CDC20	1.80E-03	1.77E-02
845	BIRC5, BUB1B, CDCA3	3.17E-03	2.47E-02
846	BIRC5, BUB1B, CDCA8	1.77E-03	2.38E-02
847	BIRC5, BUB1B, CDKN3	1.03E-03	1.54E-02
848	BIRC5, BUB1B, CENPF	5.47E-04	6.86E-03
849	BIRC5, BUB1B, CENPM	2.50E-03	2.37E-02
850	BIRC5, BUB1B, CEP55	5.02E-04	6.18E-03
851	BIRC5, BUB1B, DLGAP5	7.45E-04	7.25E-03
852	BIRC5, BUB1B, DTL	9.14E-04	9.99E-03
853	BIRC5, BUB1B, FOXM1	1.39E-03	1.50E-02

854	BIRC5, BUB1B, KIAA0101	1.55E-03	1.41E-02
855	BIRC5, BUB1B, KIF11	2.28E-04	5.08E-03
856	BIRC5, BUB1B, KIF20A	9.72E-04	1.25E-02
857	BIRC5, BUB1B, MCM10	2.86E-03	2.75E-02
858	BIRC5, BUB1B, NUSAP1	2.68E-03	3.16E-02
859	BIRC5, BUB1B, ORC6L	6.98E-04	8.04E-03
860	BIRC5, BUB1B, PBK	3.45E-04	6.71E-03
861	BIRC5, BUB1B, PLK1	1.87E-03	2.16E-02
862	BIRC5, BUB1B, PRC1	2.22E-03	2.21E-02
863	BIRC5, BUB1B, PTTG1	4.84E-04	9.27E-03
864	BIRC5, BUB1B, RAD51	8.24E-04	9.01E-03
865	BIRC5, BUB1B, RAD54L	4.73E-04	4.87E-03
866	BIRC5, BUB1B, RRM2	7.36E-04	1.09E-02
867	BIRC5, BUB1B, TK1	2.53E-03	3.09E-02
868	BIRC5, BUB1B, TOP2A	1.34E-03	1.17E-02
869	BIRC5, C18orf24, CDC2	3.59E-04	3.07E-03
870	BIRC5, C18orf24, CDC20	3.40E-04	3.39E-03
871	BIRC5, C18orf24, CDCA3	9.91E-04	7.80E-03
872	BIRC5, C18orf24, CDCA8	2.01E-04	3.38E-03
873	BIRC5, C18orf24, CDKN3	1.60E-04	2.55E-03
874	BIRC5, C18orf24, CENPF	7.84E-05	1.01E-03
875	BIRC5, C18orf24, CENPM	4.46E-04	4.50E-03
876	BIRC5, C18orf24, CEP55	8.47E-05	1.01E-03
877	BIRC5, C18orf24, DLGAP5	1.19E-04	1.10E-03
878	BIRC5, C18orf24, DTL	8.17E-05	9.63E-04
879	BIRC5, C18orf24, FOXM1	2.28E-04	2.61E-03
880	BIRC5, C18orf24, KIAA0101	2.12E-04	1.97E-03
881	BIRC5, C18orf24, KIF11	2.89E-05	6.39E-04
882	BIRC5, C18orf24, KIF20A	1.07E-04	1.51E-03
883	BIRC5, C18orf24, MCM10	4.10E-04	4.72E-03
884	BIRC5, C18orf24, NUSAP1	4.45E-04	5.87E-03
885	BIRC5, C18orf24, ORC6L	7.92E-05	9.63E-04
886	BIRC5, C18orf24, PBK	5.26E-05	1.02E-03
887	BIRC5, C18orf24, PLK1	3.59E-04	4.21E-03
888	BIRC5, C18orf24, PRC1	2.02E-04	2.58E-03
889	BIRC5, C18orf24, PTTG1	4.36E-05	9.38E-04
890	BIRC5, C18orf24, RAD51	8.74E-05	1.00E-03
891	BIRC5, C18orf24, RAD54L	4.64E-05	5.10E-04
892	BIRC5, C18orf24, RRM2	7.61E-05	1.38E-03
893	BIRC5, C18orf24, TK1	3.36E-04	5.04E-03
894	BIRC5, C18orf24, TOP2A	3.72E-04	2.95E-03
895	BIRC5, CDC2, CDC20	3.69E-03	1.74E-02
896	BIRC5, CDC2, CDCA3	5.82E-03	2.19E-02
897	BIRC5, CDC2, CDCA8	2.49E-03	1.83E-02
898	BIRC5, CDC2, CDKN3	1.63E-03	1.25E-02
899	BIRC5, CDC2, CENPF	7.30E-04	4.48E-03
900	BIRC5, CDC2, CENPM	5.88E-03	2.50E-02
901	BIRC5, CDC2, CEP55	1.22E-03	6.40E-03
902	BIRC5, CDC2, DLGAP5	1.51E-03	6.79E-03
903	BIRC5, CDC2, DTL	1.56E-03	7.23E-03
904	BIRC5, CDC2, FOXM1	2.16E-03	1.19E-02
905	BIRC5, CDC2, KIAA0101	3.62E-03	1.50E-02
906	BIRC5, CDC2, KIF11	4.84E-04	4.35E-03
907	BIRC5, CDC2, KIF20A	1.87E-03	1.13E-02
908	BIRC5, CDC2, MCM10	4.24E-03	2.27E-02
909	BIRC5, CDC2, NUSAP1	4.95E-03	2.77E-02
910	BIRC5, CDC2, ORC6L	1.38E-03	7.12E-03
911	BIRC5, CDC2, PBK	6.55E-04	5.80E-03
912	BIRC5, CDC2, PLK1	2.98E-03	1.69E-02
913	BIRC5, CDC2, PRC1	3.13E-03	1.68E-02
914	BIRC5, CDC2, PTTG1	7.92E-04	7.14E-03
915	BIRC5, CDC2, RAD51	1.49E-03	7.59E-03
916	BIRC5, CDC2, RAD54L	8.22E-04	3.80E-03
917	BIRC5, CDC2, RRM2	1.08E-03	8.58E-03
918	BIRC5, CDC2, TK1	4.36E-03	2.72E-02
919	BIRC5, CDC2, TOP2A	3.67E-03	1.36E-02
920	BIRC5, CDC20, CDCA3	5.45E-03	2.36E-02
921	BIRC5, CDC20, CDCA8	2.28E-03	1.81E-02
922	BIRC5, CDC20, CDKN3	1.43E-03	1.20E-02
923	BIRC5, CDC20, CENPF	6.91E-04	5.01E-03
924	BIRC5, CDC20, CENPM	3.67E-03	1.96E-02

925	BIRC5, CDC20, CEP55	8.34E-04	5.43E-03
926	BIRC5, CDC20, DLGAP5	1.25E-03	6.57E-03
927	BIRC5, CDC20, DTL	1.27E-03	7.14E-03
928	BIRC5, CDC20, FOXM1	1.85E-03	1.17E-02
929	BIRC5, CDC20, KIAA0101	2.56E-03	1.26E-02
930	BIRC5, CDC20, KIF11	4.04E-04	4.48E-03
931	BIRC5, CDC20, KIF20A	1.57E-03	1.07E-02
932	BIRC5, CDC20, MCM10	3.62E-03	2.17E-02
933	BIRC5, CDC20, NUSAP1	3.99E-03	2.59E-02
934	BIRC5, CDC20, ORC6L	1.15E-03	7.04E-03
935	BIRC5, CDC20, PBK	6.11E-04	6.04E-03
936	BIRC5, CDC20, PLK1	2.40E-03	1.59E-02
937	BIRC5, CDC20, PRC1	2.62E-03	1.58E-02
938	BIRC5, CDC20, PTTG1	6.77E-04	6.96E-03
939	BIRC5, CDC20, RAD51	1.23E-03	7.26E-03
940	BIRC5, CDC20, RAD54L	7.89E-04	4.27E-03
941	BIRC5, CDC20, RRM2	8.90E-04	7.98E-03
942	BIRC5, CDC20, TK1	3.50E-03	2.45E-02
943	BIRC5, CDC20, TOP2A	2.45E-03	1.14E-02
944	BIRC5, CDCA3, CDCA8	3.15E-03	2.15E-02
945	BIRC5, CDCA3, CDKN3	2.94E-03	1.95E-02
946	BIRC5, CDCA3, CENPF	1.39E-03	8.29E-03
947	BIRC5, CDCA3, CENPM	8.62E-03	3.63E-02
948	BIRC5, CDCA3, CEP55	2.07E-03	9.70E-03
949	BIRC5, CDCA3, DLGAP5	1.88E-03	7.76E-03
950	BIRC5, CDCA3, DTL	1.92E-03	8.53E-03
951	BIRC5, CDCA3, FOXM1	4.24E-03	1.98E-02
952	BIRC5, CDCA3, KIAA0101	4.88E-03	1.79E-02
953	BIRC5, CDCA3, KIF11	8.98E-04	6.75E-03
954	BIRC5, CDCA3, KIF20A	2.00E-03	1.17E-02
955	BIRC5, CDCA3, MCM10	6.20E-03	2.94E-02
956	BIRC5, CDCA3, NUSAP1	6.98E-03	3.83E-02
957	BIRC5, CDCA3, ORC6L	2.32E-03	1.15E-02
958	BIRC5, CDCA3, PBK	1.51E-03	1.01E-02
959	BIRC5, CDCA3, PLK1	4.45E-03	2.30E-02
960	BIRC5, CDCA3, PRC1	3.96E-03	2.03E-02
961	BIRC5, CDCA3, PTTG1	1.89E-03	1.44E-02
962	BIRC5, CDCA3, RAD51	3.10E-03	1.42E-02
963	BIRC5, CDCA3, RAD54L	1.35E-03	5.96E-03
964	BIRC5, CDCA3, RRM2	1.71E-03	1.29E-02
965	BIRC5, CDCA3, TK1	4.99E-03	3.02E-02
966	BIRC5, CDCA3, TOP2A	4.59E-03	1.82E-02
967	BIRC5, CDCA8, CDKN3	1.09E-03	1.42E-02
968	BIRC5, CDCA8, CENPF	4.76E-04	5.44E-03
969	BIRC5, CDCA8, CENPM	3.19E-03	2.48E-02
970	BIRC5, CDCA8, CEP55	5.68E-04	5.88E-03
971	BIRC5, CDCA8, DLGAP5	8.35E-04	6.76E-03
972	BIRC5, CDCA8, DTL	8.91E-04	8.20E-03
973	BIRC5, CDCA8, FOXM1	1.42E-03	1.35E-02
974	BIRC5, CDCA8, KIAA0101	1.83E-03	1.39E-02
975	BIRC5, CDCA8, KIF11	2.25E-04	4.38E-03
976	BIRC5, CDCA8, KIF20A	1.16E-03	1.23E-02
977	BIRC5, CDCA8, MCM10	3.21E-03	2.67E-02
978	BIRC5, CDCA8, NUSAP1	2.70E-03	2.80E-02
979	BIRC5, CDCA8, ORC6L	7.88E-04	7.61E-03
980	BIRC5, CDCA8, PBK	3.96E-04	6.43E-03
981	BIRC5, CDCA8, PLK1	1.77E-03	1.81E-02
982	BIRC5, CDCA8, PRC1	2.39E-03	2.06E-02
983	BIRC5, CDCA8, PTTG1	5.16E-04	8.46E-03
984	BIRC5, CDCA8, RAD51	8.55E-04	8.08E-03
985	BIRC5, CDCA8, RAD54L	5.52E-04	4.66E-03
986	BIRC5, CDCA8, RRM2	7.89E-04	1.03E-02
987	BIRC5, CDCA8, TK1	3.05E-03	3.06E-02
988	BIRC5, CDCA8, TOP2A	1.62E-03	1.17E-02
989	BIRC5, CDKN3, CENPF	3.31E-04	3.77E-03
990	BIRC5, CDKN3, CENPM	2.00E-03	1.65E-02
991	BIRC5, CDKN3, CEP55	4.34E-04	4.41E-03
992	BIRC5, CDKN3, DLGAP5	5.83E-04	4.73E-03
993	BIRC5, CDKN3, DTL	5.25E-04	5.12E-03
994	BIRC5, CDKN3, FOXM1	9.72E-04	9.43E-03
995	BIRC5, CDKN3, KIAA0101	1.15E-03	9.10E-03

996	BIRC5, CDKN3, KIF11	1.73E-04	3.17E-03
997	BIRC5, CDKN3, KIF20A	6.89E-04	7.81E-03
998	BIRC5, CDKN3, MCM10	1.92E-03	1.75E-02
999	BIRC5, CDKN3, NUSAP1	1.86E-03	1.99E-02
1000	BIRC5, CDKN3, ORC6L	5.06E-04	5.03E-03
1001	BIRC5, CDKN3, PBK	2.79E-04	4.53E-03
1002	BIRC5, CDKN3, PLK1	1.37E-03	1.37E-02
1003	BIRC5, CDKN3, PRC1	1.26E-03	1.24E-02
1004	BIRC5, CDKN3, PTTG1	3.09E-04	5.24E-03
1005	BIRC5, CDKN3, RAD51	5.12E-04	5.06E-03
1006	BIRC5, CDKN3, RAD54L	2.86E-04	2.63E-03
1007	BIRC5, CDKN3, RRM2	4.18E-04	6.14E-03
1008	BIRC5, CDKN3, TK1	1.74E-03	1.96E-02
1009	BIRC5, CDKN3, TOP2A	1.32E-03	9.23E-03
1010	BIRC5, CENPF, CENPM	9.06E-04	6.37E-03
1011	BIRC5, CENPF, CEP55	2.16E-04	1.70E-03
1012	BIRC5, CENPF, DLGAP5	2.76E-04	1.78E-03
1013	BIRC5, CENPF, DTL	2.86E-04	1.99E-03
1014	BIRC5, CENPF, FOXM1	4.77E-04	3.79E-03
1015	BIRC5, CENPF, KIAA0101	5.06E-04	3.23E-03
1016	BIRC5, CENPF, KIF11	6.11E-05	9.12E-04
1017	BIRC5, CENPF, KIF20A	3.00E-04	2.93E-03
1018	BIRC5, CENPF, MCM10	8.86E-04	7.19E-03
1019	BIRC5, CENPF, NUSAP1	1.18E-03	1.06E-02
1020	BIRC5, CENPF, ORC6L	2.17E-04	1.74E-03
1021	BIRC5, CENPF, PBK	8.66E-05	1.24E-03
1022	BIRC5, CENPF, PLK1	8.13E-04	6.61E-03
1023	BIRC5, CENPF, PRC1	6.20E-04	4.87E-03
1024	BIRC5, CENPF, PTTG1	1.18E-04	1.67E-03
1025	BIRC5, CENPF, RAD51	2.09E-04	1.62E-03
1026	BIRC5, CENPF, RAD54L	1.47E-04	1.01E-03
1027	BIRC5, CENPF, RRM2	1.98E-04	2.32E-03
1028	BIRC5, CENPF, TK1	7.46E-04	7.58E-03
1029	BIRC5, CENPF, TOP2A	8.29E-04	4.49E-03
1030	BIRC5, CENPM, CEP55	1.53E-03	9.68E-03
1031	BIRC5, CENPM, DLGAP5	1.50E-03	7.55E-03
1032	BIRC5, CENPM, DTL	1.83E-03	9.58E-03
1033	BIRC5, CENPM, FOXM1	2.61E-03	1.57E-02
1034	BIRC5, CENPM, KIAA0101	3.99E-03	1.83E-02
1035	BIRC5, CENPM, KIF11	5.90E-04	6.41E-03
1036	BIRC5, CENPM, KIF20A	2.05E-03	1.42E-02
1037	BIRC5, CENPM, MCM10	6.09E-03	3.38E-02
1038	BIRC5, CENPM, NUSAP1	5.64E-03	3.60E-02
1039	BIRC5, CENPM, ORC6L	1.50E-03	8.69E-03
1040	BIRC5, CENPM, PBK	8.60E-04	8.53E-03
1041	BIRC5, CENPM, PLK1	3.13E-03	1.99E-02
1042	BIRC5, CENPM, PRC1	3.65E-03	2.16E-02
1043	BIRC5, CENPM, PTTG1	9.47E-04	9.35E-03
1044	BIRC5, CENPM, RAD51	2.03E-03	1.11E-02
1045	BIRC5, CENPM, RAD54L	8.11E-04	4.38E-03
1046	BIRC5, CENPM, RRM2	1.34E-03	1.13E-02
1047	BIRC5, CENPM, TK1	5.65E-03	3.69E-02
1048	BIRC5, CENPM, TOP2A	5.28E-03	2.23E-02
1049	BIRC5, CEP55, DLGAP5	3.43E-04	2.05E-03
1050	BIRC5, CEP55, DTL	2.74E-04	1.91E-03
1051	BIRC5, CEP55, FOXM1	5.78E-04	4.23E-03
1052	BIRC5, CEP55, KIAA0101	8.71E-04	4.88E-03
1053	BIRC5, CEP55, KIF11	1.18E-04	1.55E-03
1054	BIRC5, CEP55, KIF20A	4.20E-04	3.48E-03
1055	BIRC5, CEP55, MCM10	1.26E-03	8.87E-03
1056	BIRC5, CEP55, NUSAP1	1.05E-03	8.72E-03
1057	BIRC5, CEP55, ORC6L	2.60E-04	1.92E-03
1058	BIRC5, CEP55, PBK	1.70E-04	2.04E-03
1059	BIRC5, CEP55, PLK1	7.54E-04	5.94E-03
1060	BIRC5, CEP55, PRC1	6.42E-04	5.00E-03
1061	BIRC5, CEP55, PTTG1	1.68E-04	2.09E-03
1062	BIRC5, CEP55, RAD51	3.40E-04	2.31E-03
1063	BIRC5, CEP55, RAD54L	1.15E-04	7.85E-04
1064	BIRC5, CEP55, RRM2	2.26E-04	2.41E-03
1065	BIRC5, CEP55, TK1	1.04E-03	9.08E-03
1066	BIRC5, CEP55, TOP2A	1.35E-03	6.70E-03

1067	BIRC5, DLGAP5, DTL	4.92E-04	2.51E-03
1068	BIRC5, DLGAP5, FOXM1	7.29E-04	4.43E-03
1069	BIRC5, DLGAP5, KIAA0101	1.09E-03	5.03E-03
1070	BIRC5, DLGAP5, KIF11	1.67E-04	1.64E-03
1071	BIRC5, DLGAP5, KIF20A	6.11E-04	3.97E-03
1072	BIRC5, DLGAP5, MCM10	1.63E-03	9.60E-03
1073	BIRC5, DLGAP5, NUSAP1	1.43E-03	9.52E-03
1074	BIRC5, DLGAP5, ORC6L	4.51E-04	2.46E-03
1075	BIRC5, DLGAP5, PBK	2.23E-04	2.13E-03
1076	BIRC5, DLGAP5, PLK1	9.68E-04	6.19E-03
1077	BIRC5, DLGAP5, PRC1	1.10E-03	6.32E-03
1078	BIRC5, DLGAP5, PTTG1	2.40E-04	2.33E-03
1079	BIRC5, DLGAP5, RAD51	5.19E-04	2.77E-03
1080	BIRC5, DLGAP5, RAD54L	2.96E-04	1.42E-03
1081	BIRC5, DLGAP5, RRM2	3.02E-04	2.58E-03
1082	BIRC5, DLGAP5, TK1	1.39E-03	9.80E-03
1083	BIRC5, DLGAP5, TOP2A	1.08E-03	4.51E-03
1084	BIRC5, DTL, FOXM1	7.74E-04	5.11E-03
1085	BIRC5, DTL, KIAA0101	1.12E-03	5.32E-03
1086	BIRC5, DTL, KIF11	8.95E-05	1.18E-03
1087	BIRC5, DTL, KIF20A	5.46E-04	4.05E-03
1088	BIRC5, DTL, MCM10	1.81E-03	1.15E-02
1089	BIRC5, DTL, NUSAP1	1.90E-03	1.36E-02
1090	BIRC5, DTL, ORC6L	3.82E-04	2.31E-03
1091	BIRC5, DTL, PBK	1.53E-04	1.83E-03
1092	BIRC5, DTL, PLK1	1.25E-03	8.63E-03
1093	BIRC5, DTL, PRC1	1.24E-03	7.46E-03
1094	BIRC5, DTL, PTTG1	1.78E-04	2.22E-03
1095	BIRC5, DTL, RAD51	4.49E-04	2.62E-03
1096	BIRC5, DTL, RAD54L	2.55E-04	1.28E-03
1097	BIRC5, DTL, RRM2	2.92E-04	2.80E-03
1098	BIRC5, DTL, TK1	1.65E-03	1.29E-02
1099	BIRC5, DTL, TOP2A	1.19E-03	5.28E-03
1100	BIRC5, FOXM1, KIAA0101	1.52E-03	8.73E-03
1101	BIRC5, FOXM1, KIF11	2.36E-04	3.05E-03
1102	BIRC5, FOXM1, KIF20A	9.06E-04	7.39E-03
1103	BIRC5, FOXM1, MCM10	2.53E-03	1.72E-02
1104	BIRC5, FOXM1, NUSAP1	2.60E-03	1.96E-02
1105	BIRC5, FOXM1, ORC6L	6.84E-04	4.82E-03
1106	BIRC5, FOXM1, PBK	3.86E-04	4.47E-03
1107	BIRC5, FOXM1, PLK1	1.83E-03	1.34E-02
1108	BIRC5, FOXM1, PRC1	1.78E-03	1.22E-02
1109	BIRC5, FOXM1, PTTG1	3.92E-04	4.76E-03
1110	BIRC5, FOXM1, RAD51	7.41E-04	5.07E-03
1111	BIRC5, FOXM1, RAD54L	4.34E-04	2.72E-03
1112	BIRC5, FOXM1, RRM2	6.15E-04	6.15E-03
1113	BIRC5, FOXM1, TK1	2.26E-03	1.88E-02
1114	BIRC5, FOXM1, TOP2A	1.67E-03	8.66E-03
1115	BIRC5, KIAA0101, KIF11	3.26E-04	3.29E-03
1116	BIRC5, KIAA0101, KIF20A	1.42E-03	8.66E-03
1117	BIRC5, KIAA0101, MCM10	3.56E-03	1.92E-02
1118	BIRC5, KIAA0101, NUSAP1	3.45E-03	2.08E-02
1119	BIRC5, KIAA0101, ORC6L	1.13E-03	5.80E-03
1120	BIRC5, KIAA0101, PBK	5.30E-04	4.76E-03
1121	BIRC5, KIAA0101, PLK1	1.87E-03	1.15E-02
1122	BIRC5, KIAA0101, PRC1	2.65E-03	1.38E-02
1123	BIRC5, KIAA0101, PTTG1	5.12E-04	4.89E-03
1124	BIRC5, KIAA0101, RAD51	1.19E-03	5.94E-03
1125	BIRC5, KIAA0101, RAD54L	6.41E-04	3.00E-03
1126	BIRC5, KIAA0101, RRM2	7.36E-04	5.90E-03
1127	BIRC5, KIAA0101, TK1	3.33E-03	2.08E-02
1128	BIRC5, KIAA0101, TOP2A	2.33E-03	9.27E-03
1129	BIRC5, KIF11, KIF20A	1.32E-04	2.14E-03
1130	BIRC5, KIF11, MCM10	5.39E-04	6.75E-03
1131	BIRC5, KIF11, NUSAP1	5.24E-04	7.69E-03
1132	BIRC5, KIF11, ORC6L	1.06E-04	1.44E-03
1133	BIRC5, KIF11, PBK	5.50E-05	1.13E-03
1134	BIRC5, KIF11, PLK1	3.50E-04	4.69E-03
1135	BIRC5, KIF11, PRC1	2.88E-04	4.05E-03
1136	BIRC5, KIF11, PTTG1	7.50E-05	1.79E-03
1137	BIRC5, KIF11, RAD51	1.12E-04	1.49E-03

1138	BIRC5, KIF11, RAD54L	5.91E-05	7.37E-04
1139	BIRC5, KIF11, RRM2	8.60E-05	1.72E-03
1140	BIRC5, KIF11, TK1	3.95E-04	6.48E-03
1141	BIRC5, KIF11, TOP2A	4.43E-04	3.62E-03
1142	BIRC5, KIF20A, MCM10	2.17E-03	1.61E-02
1143	BIRC5, KIF20A, NUSAP1	2.14E-03	1.90E-02
1144	BIRC5, KIF20A, ORC6L	5.44E-04	4.29E-03
1145	BIRC5, KIF20A, PBK	2.56E-04	3.44E-03
1146	BIRC5, KIF20A, PLK1	1.09E-03	9.73E-03
1147	BIRC5, KIF20A, PRC1	1.53E-03	1.16E-02
1148	BIRC5, KIF20A, PTTG1	3.10E-04	4.27E-03
1149	BIRC5, KIF20A, RAD51	5.84E-04	4.39E-03
1150	BIRC5, KIF20A, RAD54L	3.56E-04	2.46E-03
1151	BIRC5, KIF20A, RRM2	4.22E-04	5.02E-03
1152	BIRC5, KIF20A, TK1	1.90E-03	1.72E-02
1153	BIRC5, KIF20A, TOP2A	1.21E-03	7.02E-03
1154	BIRC5, MCM10, NUSAP1	4.49E-03	3.28E-02
1155	BIRC5, MCM10, ORC6L	1.54E-03	1.02E-02
1156	BIRC5, MCM10, PBK	9.32E-04	9.93E-03
1157	BIRC5, MCM10, PLK1	2.80E-03	2.11E-02
1158	BIRC5, MCM10, PRC1	4.02E-03	2.51E-02
1159	BIRC5, MCM10, PTTG1	1.03E-03	1.12E-02
1160	BIRC5, MCM10, RAD51	1.89E-03	1.21E-02
1161	BIRC5, MCM10, RAD54L	1.09E-03	6.63E-03
1162	BIRC5, MCM10, RRM2	1.33E-03	1.24E-02
1163	BIRC5, MCM10, TK1	4.98E-03	3.60E-02
1164	BIRC5, MCM10, TOP2A	2.82E-03	1.49E-02
1165	BIRC5, NUSAP1, ORC6L	1.32E-03	1.08E-02
1166	BIRC5, NUSAP1, PBK	7.24E-04	9.31E-03
1167	BIRC5, NUSAP1, PLK1	3.92E-03	3.05E-02
1168	BIRC5, NUSAP1, PRC1	3.57E-03	2.68E-02
1169	BIRC5, NUSAP1, PTTG1	8.77E-04	1.20E-02
1170	BIRC5, NUSAP1, RAD51	1.61E-03	1.23E-02
1171	BIRC5, NUSAP1, RAD54L	9.25E-04	6.80E-03
1172	BIRC5, NUSAP1, RRM2	1.31E-03	1.44E-02
1173	BIRC5, NUSAP1, TK1	4.56E-03	3.98E-02
1174	BIRC5, NUSAP1, TOP2A	4.00E-03	2.11E-02
1175	BIRC5, ORC6L, PBK	2.31E-04	2.62E-03
1176	BIRC5, ORC6L, PLK1	9.69E-04	7.27E-03
1177	BIRC5, ORC6L, PRC1	1.15E-03	7.31E-03
1178	BIRC5, ORC6L, PTTG1	1.75E-04	2.18E-03
1179	BIRC5, ORC6L, RAD51	4.31E-04	2.64E-03
1180	BIRC5, ORC6L, RAD54L	2.58E-04	1.42E-03
1181	BIRC5, ORC6L, RRM2	3.16E-04	3.24E-03
1182	BIRC5, ORC6L, TK1	1.41E-03	1.15E-02
1183	BIRC5, ORC6L, TOP2A	9.15E-04	4.54E-03
1184	BIRC5, PBK, PLK1	4.13E-04	5.17E-03
1185	BIRC5, PBK, PRC1	5.70E-04	6.44E-03
1186	BIRC5, PBK, PTTG1	1.11E-04	2.36E-03
1187	BIRC5, PBK, RAD51	2.39E-04	2.71E-03
1188	BIRC5, PBK, RAD54L	1.33E-04	1.39E-03
1189	BIRC5, PBK, RRM2	1.47E-04	2.65E-03
1190	BIRC5, PBK, TK1	5.94E-04	8.42E-03
1191	BIRC5, PBK, TOP2A	5.04E-04	4.09E-03
1192	BIRC5, PLK1, PRC1	2.13E-03	1.62E-02
1193	BIRC5, PLK1, PTTG1	6.03E-04	7.58E-03
1194	BIRC5, PLK1, RAD51	9.15E-04	6.82E-03
1195	BIRC5, PLK1, RAD54L	5.80E-04	3.93E-03
1196	BIRC5, PLK1, RRM2	8.21E-04	8.58E-03
1197	BIRC5, PLK1, TK1	2.96E-03	2.66E-02
1198	BIRC5, PLK1, TOP2A	2.75E-03	1.44E-02
1199	BIRC5, PRC1, PTTG1	5.95E-04	7.03E-03
1200	BIRC5, PRC1, RAD51	1.21E-03	7.65E-03
1201	BIRC5, PRC1, RAD54L	7.75E-04	4.32E-03
1202	BIRC5, PRC1, RRM2	9.66E-04	9.03E-03
1203	BIRC5, PRC1, TK1	3.65E-03	2.77E-02
1204	BIRC5, PRC1, TOP2A	1.75E-03	9.45E-03
1205	BIRC5, PTTG1, RAD51	1.99E-04	2.36E-03
1206	BIRC5, PTTG1, RAD54L	1.12E-04	1.20E-03
1207	BIRC5, PTTG1, RRM2	1.68E-04	3.05E-03
1208	BIRC5, PTTG1, TK1	8.92E-04	1.24E-02

1209	BIRC5, PTTG1, TOP2A	6.27E-04	5.05E-03
1210	BIRC5, RAD51, RAD54L	2.67E-04	1.43E-03
1211	BIRC5, RAD51, RRM2	3.12E-04	3.14E-03
1212	BIRC5, RAD51, TK1	1.61E-03	1.25E-02
1213	BIRC5, RAD51, TOP2A	1.11E-03	5.30E-03
1214	BIRC5, RAD54L, RRM2	1.92E-04	1.71E-03
1215	BIRC5, RAD54L, TK1	9.28E-04	6.82E-03
1216	BIRC5, RAD54L, TOP2A	4.41E-04	1.99E-03
1217	BIRC5, RRM2, TK1	1.25E-03	1.41E-02
1218	BIRC5, RRM2, TOP2A	7.67E-04	5.61E-03
1219	BIRC5, TK1, TOP2A	2.76E-03	1.76E-02
1220	BUB1B, C18orf24, CDC2	1.35E-04	1.84E-03
1221	BUB1B, C18orf24, CDC20	1.52E-04	2.36E-03
1222	BUB1B, C18orf24, CDCA3	4.72E-04	5.62E-03
1223	BUB1B, C18orf24, CDCA8	1.13E-04	2.71E-03
1224	BUB1B, C18orf24, CDKN3	7.34E-05	1.79E-03
1225	BUB1B, C18orf24, CENPF	4.21E-05	7.99E-04
1226	BUB1B, C18orf24, CENPM	1.55E-04	2.59E-03
1227	BUB1B, C18orf24, CEP55	2.72E-05	5.05E-04
1228	BUB1B, C18orf24, DLGAP5	5.06E-05	7.01E-04
1229	BUB1B, C18orf24, DTL	4.25E-05	7.72E-04
1230	BUB1B, C18orf24, FOXM1	1.17E-04	2.01E-03
1231	BUB1B, C18orf24, KIAA0101	9.39E-05	1.37E-03
1232	BUB1B, C18orf24, KIF11	9.55E-06	3.40E-04
1233	BUB1B, C18orf24, KIF20A	4.63E-05	1.01E-03
1234	BUB1B, C18orf24, MCM10	2.28E-04	3.80E-03
1235	BUB1B, C18orf24, NUSAP1	2.45E-04	4.90E-03
1236	BUB1B, C18orf24, ORC6L	3.26E-05	6.06E-04
1237	BUB1B, C18orf24, PBK	1.76E-05	5.73E-04
1238	BUB1B, C18orf24, PLK1	1.76E-04	3.13E-03
1239	BUB1B, C18orf24, PRC1	1.15E-04	2.13E-03
1240	BUB1B, C18orf24, PTTG1	1.99E-05	6.85E-04
1241	BUB1B, C18orf24, RAD51	4.62E-05	8.05E-04
1242	BUB1B, C18orf24, RAD54L	2.16E-05	3.52E-04
1243	BUB1B, C18orf24, RRM2	4.18E-05	1.08E-03
1244	BUB1B, C18orf24, TK1	1.52E-04	3.55E-03
1245	BUB1B, C18orf24, TOP2A	1.13E-04	1.47E-03
1246	BUB1B, CDC2, CDC20	1.78E-03	1.20E-02
1247	BUB1B, CDC2, CDCA3	2.72E-03	1.55E-02
1248	BUB1B, CDC2, CDCA8	1.40E-03	1.39E-02
1249	BUB1B, CDC2, CDKN3	6.81E-04	7.96E-03
1250	BUB1B, CDC2, CENPF	2.67E-04	2.61E-03
1251	BUB1B, CDC2, CENPM	2.50E-03	1.53E-02
1252	BUB1B, CDC2, CEP55	3.64E-04	2.92E-03
1253	BUB1B, CDC2, DLGAP5	6.60E-04	4.17E-03
1254	BUB1B, CDC2, DTL	6.14E-04	4.49E-03
1255	BUB1B, CDC2, FOXM1	1.04E-03	8.30E-03
1256	BUB1B, CDC2, KIAA0101	1.70E-03	1.01E-02
1257	BUB1B, CDC2, KIF11	1.61E-04	2.23E-03
1258	BUB1B, CDC2, KIF20A	8.31E-04	7.32E-03
1259	BUB1B, CDC2, MCM10	2.45E-03	1.77E-02
1260	BUB1B, CDC2, NUSAP1	2.58E-03	2.11E-02
1261	BUB1B, CDC2, ORC6L	6.08E-04	4.42E-03
1262	BUB1B, CDC2, PBK	2.21E-04	3.14E-03
1263	BUB1B, CDC2, PLK1	1.35E-03	1.14E-02
1264	BUB1B, CDC2, PRC1	1.82E-03	1.31E-02
1265	BUB1B, CDC2, PTTG1	3.10E-04	4.48E-03
1266	BUB1B, CDC2, RAD51	7.49E-04	5.42E-03
1267	BUB1B, CDC2, RAD54L	3.84E-04	2.46E-03
1268	BUB1B, CDC2, RRM2	5.95E-04	6.33E-03
1269	BUB1B, CDC2, TK1	2.10E-03	1.90E-02
1270	BUB1B, CDC2, TOP2A	1.05E-03	6.18E-03
1271	BUB1B, CDC20, CDCA3	2.89E-03	1.82E-02
1272	BUB1B, CDC20, CDCA8	1.49E-03	1.54E-02
1273	BUB1B, CDC20, CDKN3	7.04E-04	8.75E-03
1274	BUB1B, CDC20, CENPF	2.98E-04	3.37E-03
1275	BUB1B, CDC20, CENPM	1.82E-03	1.35E-02
1276	BUB1B, CDC20, CEP55	2.85E-04	2.81E-03
1277	BUB1B, CDC20, DLGAP5	6.33E-04	4.56E-03
1278	BUB1B, CDC20, DTL	6.01E-04	5.17E-03
1279	BUB1B, CDC20, FOXM1	1.03E-03	9.21E-03

1280	BUB1B, CDC20, KIAA0101	1.37E-03	9.50E-03
1281	BUB1B, CDC20, KIF11	1.69E-04	2.74E-03
1282	BUB1B, CDC20, KIF20A	8.18E-04	7.84E-03
1283	BUB1B, CDC20, MCM10	2.38E-03	1.86E-02
1284	BUB1B, CDC20, NUSAP1	2.43E-03	2.20E-02
1285	BUB1B, CDC20, ORC6L	5.94E-04	4.98E-03
1286	BUB1B, CDC20, PBK	2.49E-04	3.80E-03
1287	BUB1B, CDC20, PLK1	1.29E-03	1.22E-02
1288	BUB1B, CDC20, PRC1	1.75E-03	1.38E-02
1289	BUB1B, CDC20, PTTG1	3.29E-04	5.15E-03
1290	BUB1B, CDC20, RAD51	7.22E-04	5.90E-03
1291	BUB1B, CDC20, RAD54L	4.40E-04	3.21E-03
1292	BUB1B, CDC20, RRM2	5.73E-04	6.62E-03
1293	BUB1B, CDC20, TK1	1.97E-03	1.92E-02
1294	BUB1B, CDC20, TOP2A	8.15E-04	6.00E-03
1295	BUB1B, CDCA3, CDCA8	1.86E-03	1.80E-02
1296	BUB1B, CDCA3, CDKN3	1.42E-03	1.45E-02
1297	BUB1B, CDCA3, CENPF	6.09E-04	5.70E-03
1298	BUB1B, CDCA3, CENPM	3.90E-03	2.43E-02
1299	BUB1B, CDCA3, CEP55	7.31E-04	5.16E-03
1300	BUB1B, CDCA3, DLGAP5	9.22E-04	5.60E-03
1301	BUB1B, CDCA3, DTL	8.22E-04	5.81E-03
1302	BUB1B, CDCA3, FOXM1	2.31E-03	1.55E-02
1303	BUB1B, CDCA3, KIAA0101	2.43E-03	1.30E-02
1304	BUB1B, CDCA3, KIF11	3.72E-04	4.45E-03
1305	BUB1B, CDCA3, KIF20A	9.75E-04	8.62E-03
1306	BUB1B, CDCA3, MCM10	3.78E-03	2.47E-02
1307	BUB1B, CDCA3, NUSAP1	3.90E-03	3.16E-02
1308	BUB1B, CDCA3, ORC6L	1.14E-03	8.37E-03
1309	BUB1B, CDCA3, PBK	6.98E-04	7.22E-03
1310	BUB1B, CDCA3, PLK1	2.25E-03	1.73E-02
1311	BUB1B, CDCA3, PRC1	2.41E-03	1.71E-02
1312	BUB1B, CDCA3, PTTG1	8.64E-04	1.04E-02
1313	BUB1B, CDCA3, RAD51	1.71E-03	1.13E-02
1314	BUB1B, CDCA3, RAD54L	7.00E-04	4.42E-03
1315	BUB1B, CDCA3, RRM2	1.01E-03	1.07E-02
1316	BUB1B, CDCA3, TK1	2.57E-03	2.33E-02
1317	BUB1B, CDCA3, TOP2A	1.54E-03	9.71E-03
1318	BUB1B, CDCA8, CDKN3	6.74E-04	1.17E-02
1319	BUB1B, CDCA8, CENPF	2.55E-04	4.21E-03
1320	BUB1B, CDCA8, CENPM	2.02E-03	1.96E-02
1321	BUB1B, CDCA8, CEP55	2.36E-04	3.47E-03
1322	BUB1B, CDCA8, DLGAP5	5.05E-04	5.28E-03
1323	BUB1B, CDCA8, DTL	5.68E-04	7.11E-03
1324	BUB1B, CDCA8, FOXM1	9.82E-04	1.20E-02
1325	BUB1B, CDCA8, KIAA0101	1.18E-03	1.17E-02
1326	BUB1B, CDCA8, KIF11	1.26E-04	3.16E-03
1327	BUB1B, CDCA8, KIF20A	7.50E-04	1.03E-02
1328	BUB1B, CDCA8, MCM10	2.52E-03	2.52E-02
1329	BUB1B, CDCA8, NUSAP1	2.02E-03	2.66E-02
1330	BUB1B, CDCA8, ORC6L	5.22E-04	6.26E-03
1331	BUB1B, CDCA8, PBK	1.98E-04	4.56E-03
1332	BUB1B, CDCA8, PLK1	1.19E-03	1.59E-02
1333	BUB1B, CDCA8, PRC1	2.02E-03	2.04E-02
1334	BUB1B, CDCA8, PTTG1	3.45E-04	7.47E-03
1335	BUB1B, CDCA8, RAD51	6.53E-04	7.70E-03
1336	BUB1B, CDCA8, RAD54L	3.98E-04	4.11E-03
1337	BUB1B, CDCA8, RRM2	6.76E-04	9.97E-03
1338	BUB1B, CDCA8, TK1	2.12E-03	2.68E-02
1339	BUB1B, CDCA8, TOP2A	6.07E-04	6.74E-03
1340	BUB1B, CDKN3, CENPF	1.41E-04	2.52E-03
1341	BUB1B, CDKN3, CENPM	8.85E-04	1.08E-02
1342	BUB1B, CDKN3, CEP55	1.46E-04	2.26E-03
1343	BUB1B, CDKN3, DLGAP5	2.66E-04	3.11E-03
1344	BUB1B, CDKN3, DTL	2.42E-04	3.65E-03
1345	BUB1B, CDKN3, FOXM1	5.14E-04	7.23E-03
1346	BUB1B, CDKN3, KIAA0101	5.44E-04	6.46E-03
1347	BUB1B, CDKN3, KIF11	6.62E-05	1.83E-03
1348	BUB1B, CDKN3, KIF20A	3.26E-04	5.44E-03
1349	BUB1B, CDKN3, MCM10	1.17E-03	1.45E-02
1350	BUB1B, CDKN3, NUSAP1	1.04E-03	1.64E-02

1351	BUB1B, CDKN3, ORC6L	2.36E-04	3.39E-03
1352	BUB1B, CDKN3, PBK	1.03E-04	2.70E-03
1353	BUB1B, CDKN3, PLK1	6.96E-04	1.03E-02
1354	BUB1B, CDKN3, PRC1	7.88E-04	1.04E-02
1355	BUB1B, CDKN3, PTTG1	1.43E-04	3.76E-03
1356	BUB1B, CDKN3, RAD51	2.77E-04	3.96E-03
1357	BUB1B, CDKN3, RAD54L	1.43E-04	1.86E-03
1358	BUB1B, CDKN3, RRM2	2.55E-04	4.98E-03
1359	BUB1B, CDKN3, TK1	8.82E-04	1.45E-02
1360	BUB1B, CDKN3, TOP2A	3.93E-04	4.56E-03
1361	BUB1B, CENPF, CENPM	3.26E-04	3.70E-03
1362	BUB1B, CENPF, CEP55	8.00E-05	9.19E-04
1363	BUB1B, CENPF, DLGAP5	1.15E-04	1.11E-03
1364	BUB1B, CENPF, DTL	1.36E-04	1.48E-03
1365	BUB1B, CENPF, FOXM1	2.28E-04	2.77E-03
1366	BUB1B, CENPF, KIAA0101	2.19E-04	2.17E-03
1367	BUB1B, CENPF, KIF11	2.00E-05	4.81E-04
1368	BUB1B, CENPF, KIF20A	1.27E-04	1.92E-03
1369	BUB1B, CENPF, MCM10	4.71E-04	5.57E-03
1370	BUB1B, CENPF, NUSAP1	6.08E-04	8.47E-03
1371	BUB1B, CENPF, ORC6L	8.88E-05	1.08E-03
1372	BUB1B, CENPF, PBK	2.66E-05	6.57E-04
1373	BUB1B, CENPF, PLK1	3.78E-04	4.74E-03
1374	BUB1B, CENPF, PRC1	3.39E-04	3.90E-03
1375	BUB1B, CENPF, PTTG1	5.17E-05	1.18E-03
1376	BUB1B, CENPF, RAD51	1.03E-04	1.23E-03
1377	BUB1B, CENPF, RAD54L	6.68E-05	6.86E-04
1378	BUB1B, CENPF, RRM2	1.03E-04	1.75E-03
1379	BUB1B, CENPF, TK1	3.29E-04	5.19E-03
1380	BUB1B, CENPF, TOP2A	2.46E-04	2.17E-03
1381	BUB1B, CENPM, CEP55	5.45E-04	5.32E-03
1382	BUB1B, CENPM, DLGAP5	6.58E-04	4.56E-03
1383	BUB1B, CENPM, DTL	7.48E-04	6.04E-03
1384	BUB1B, CENPM, FOXM1	1.36E-03	1.14E-02
1385	BUB1B, CENPM, KIAA0101	1.96E-03	1.26E-02
1386	BUB1B, CENPM, KIF11	2.28E-04	3.50E-03
1387	BUB1B, CENPM, KIF20A	9.71E-04	9.35E-03
1388	BUB1B, CENPM, MCM10	3.84E-03	2.73E-02
1389	BUB1B, CENPM, NUSAP1	3.22E-03	2.84E-02
1390	BUB1B, CENPM, ORC6L	7.14E-04	5.50E-03
1391	BUB1B, CENPM, PBK	3.09E-04	4.74E-03
1392	BUB1B, CENPM, PLK1	1.52E-03	1.37E-02
1393	BUB1B, CENPM, PRC1	2.41E-03	1.77E-02
1394	BUB1B, CENPM, PTTG1	4.18E-04	6.18E-03
1395	BUB1B, CENPM, RAD51	1.14E-03	8.37E-03
1396	BUB1B, CENPM, RAD54L	4.23E-04	2.96E-03
1397	BUB1B, CENPM, RRM2	8.66E-04	8.80E-03
1398	BUB1B, CENPM, TK1	2.99E-03	2.67E-02
1399	BUB1B, CENPM, TOP2A	1.98E-03	1.30E-02
1400	BUB1B, CEP55, DLGAP5	1.11E-04	9.60E-04
1401	BUB1B, CEP55, DTL	9.44E-05	9.93E-04
1402	BUB1B, CEP55, FOXM1	2.17E-04	2.35E-03
1403	BUB1B, CEP55, KIAA0101	3.12E-04	2.58E-03
1404	BUB1B, CEP55, KIF11	2.73E-05	5.75E-04
1405	BUB1B, CEP55, KIF20A	1.41E-04	1.73E-03
1406	BUB1B, CEP55, MCM10	5.54E-04	5.52E-03
1407	BUB1B, CEP55, NUSAP1	3.93E-04	5.09E-03
1408	BUB1B, CEP55, ORC6L	8.07E-05	8.76E-04
1409	BUB1B, CEP55, PBK	4.24E-05	8.38E-04
1410	BUB1B, CEP55, PLK1	2.60E-04	3.11E-03
1411	BUB1B, CEP55, PRC1	2.69E-04	2.99E-03
1412	BUB1B, CEP55, PTTG1	5.17E-05	1.02E-03
1413	BUB1B, CEP55, RAD51	1.30E-04	1.29E-03
1414	BUB1B, CEP55, RAD54L	3.72E-05	3.64E-04
1415	BUB1B, CEP55, RRM2	8.68E-05	1.32E-03
1416	BUB1B, CEP55, TK1	3.64E-04	4.83E-03
1417	BUB1B, CEP55, TOP2A	4.23E-04	3.23E-03
1418	BUB1B, DLGAP5, DTL	2.23E-04	1.69E-03
1419	BUB1B, DLGAP5, FOXM1	3.73E-04	3.16E-03
1420	BUB1B, DLGAP5, KIAA0101	5.38E-04	3.45E-03
1421	BUB1B, DLGAP5, KIF11	6.32E-05	8.92E-04

1422	BUB1B, DLGAP5, KIF20A	2.95E-04	2.64E-03
1423	BUB1B, DLGAP5, MCM10	9.96E-04	7.61E-03
1424	BUB1B, DLGAP5, NUSAP1	7.91E-04	7.34E-03
1425	BUB1B, DLGAP5, ORC6L	2.14E-04	1.58E-03
1426	BUB1B, DLGAP5, PBK	8.11E-05	1.18E-03
1427	BUB1B, DLGAP5, PLK1	4.75E-04	4.28E-03
1428	BUB1B, DLGAP5, PRC1	6.88E-04	5.10E-03
1429	BUB1B, DLGAP5, PTTG1	1.07E-04	1.55E-03
1430	BUB1B, DLGAP5, RAD51	2.86E-04	2.09E-03
1431	BUB1B, DLGAP5, RAD54L	1.54E-04	9.80E-04
1432	BUB1B, DLGAP5, RRM2	1.78E-04	1.96E-03
1433	BUB1B, DLGAP5, TK1	7.08E-04	6.88E-03
1434	BUB1B, DLGAP5, TOP2A	3.16E-04	2.03E-03
1435	BUB1B, DTL, FOXM1	4.09E-04	4.05E-03
1436	BUB1B, DTL, KIAA0101	5.38E-04	3.88E-03
1437	BUB1B, DTL, KIF11	3.26E-05	6.65E-04
1438	BUB1B, DTL, KIF20A	2.58E-04	2.87E-03
1439	BUB1B, DTL, MCM10	1.11E-03	9.78E-03
1440	BUB1B, DTL, NUSAP1	1.10E-03	1.18E-02
1441	BUB1B, DTL, ORC6L	1.77E-04	1.58E-03
1442	BUB1B, DTL, PBK	5.00E-05	1.02E-03
1443	BUB1B, DTL, PLK1	6.25E-04	6.62E-03
1444	BUB1B, DTL, PRC1	8.07E-04	6.72E-03
1445	BUB1B, DTL, PTTG1	8.64E-05	1.71E-03
1446	BUB1B, DTL, RAD51	2.62E-04	2.27E-03
1447	BUB1B, DTL, RAD54L	1.32E-04	9.61E-04
1448	BUB1B, DTL, RRM2	1.83E-04	2.40E-03
1449	BUB1B, DTL, TK1	8.23E-04	9.68E-03
1450	BUB1B, DTL, TOP2A	3.20E-04	2.44E-03
1451	BUB1B, FOXM1, KIAA0101	8.31E-04	6.82E-03
1452	BUB1B, FOXM1, KIF11	1.06E-04	1.96E-03
1453	BUB1B, FOXM1, KIF20A	4.85E-04	5.59E-03
1454	BUB1B, FOXM1, MCM10	1.72E-03	1.54E-02
1455	BUB1B, FOXM1, NUSAP1	1.65E-03	1.75E-02
1456	BUB1B, FOXM1, ORC6L	3.71E-04	3.57E-03
1457	BUB1B, FOXM1, PBK	1.64E-04	2.92E-03
1458	BUB1B, FOXM1, PLK1	1.06E-03	1.10E-02
1459	BUB1B, FOXM1, PRC1	1.27E-03	1.13E-02
1460	BUB1B, FOXM1, PTTG1	2.10E-04	3.80E-03
1461	BUB1B, FOXM1, RAD51	4.62E-04	4.41E-03
1462	BUB1B, FOXM1, RAD54L	2.54E-04	2.15E-03
1463	BUB1B, FOXM1, RRM2	4.29E-04	5.47E-03
1464	BUB1B, FOXM1, TK1	1.31E-03	1.53E-02
1465	BUB1B, FOXM1, TOP2A	5.76E-04	4.73E-03
1466	BUB1B, KIAA0101, KIF11	1.34E-04	1.96E-03
1467	BUB1B, KIAA0101, KIF20A	7.28E-04	6.29E-03
1468	BUB1B, KIAA0101, MCM10	2.33E-03	1.65E-02
1469	BUB1B, KIAA0101, NUSAP1	2.07E-03	1.77E-02
1470	BUB1B, KIAA0101, ORC6L	5.74E-04	4.05E-03
1471	BUB1B, KIAA0101, PBK	2.07E-04	2.92E-03
1472	BUB1B, KIAA0101, PLK1	9.64E-04	8.62E-03
1473	BUB1B, KIAA0101, PRC1	1.78E-03	1.21E-02
1474	BUB1B, KIAA0101, PTTG1	2.42E-04	3.56E-03
1475	BUB1B, KIAA0101, RAD51	6.95E-04	4.85E-03
1476	BUB1B, KIAA0101, RAD54L	3.52E-04	2.23E-03
1477	BUB1B, KIAA0101, RRM2	4.68E-04	4.89E-03
1478	BUB1B, KIAA0101, TK1	1.84E-03	1.62E-02
1479	BUB1B, KIAA0101, TOP2A	7.35E-04	4.64E-03
1480	BUB1B, KIF11, KIF20A	5.13E-05	1.21E-03
1481	BUB1B, KIF11, MCM10	3.02E-04	4.95E-03
1482	BUB1B, KIF11, NUSAP1	2.52E-04	5.42E-03
1483	BUB1B, KIF11, ORC6L	4.26E-05	7.97E-04
1484	BUB1B, KIF11, PBK	1.91E-05	6.17E-04
1485	BUB1B, KIF11, PLK1	1.48E-04	2.92E-03
1486	BUB1B, KIF11, PRC1	1.73E-04	3.06E-03
1487	BUB1B, KIF11, PTTG1	2.87E-05	1.05E-03
1488	BUB1B, KIF11, RAD51	5.42E-05	9.96E-04
1489	BUB1B, KIF11, RAD54L	2.65E-05	4.40E-04
1490	BUB1B, KIF11, RRM2	4.84E-05	1.22E-03
1491	BUB1B, KIF11, TK1	1.69E-04	4.01E-03
1492	BUB1B, KIF11, TOP2A	9.50E-05	1.34E-03

1493	BUB1B, KIF20A, MCM10	1.39E-03	1.34E-02
1494	BUB1B, KIF20A, NUSAP1	1.26E-03	1.58E-02
1495	BUB1B, KIF20A, ORC6L	2.71E-04	2.94E-03
1496	BUB1B, KIF20A, PBK	9.60E-05	2.02E-03
1497	BUB1B, KIF20A, PLK1	5.51E-04	7.13E-03
1498	BUB1B, KIF20A, PRC1	1.01E-03	9.90E-03
1499	BUB1B, KIF20A, PTTG1	1.47E-04	3.04E-03
1500	BUB1B, KIF20A, RAD51	3.37E-04	3.49E-03
1501	BUB1B, KIF20A, RAD54L	1.93E-04	1.80E-03
1502	BUB1B, KIF20A, RRM2	2.70E-04	4.11E-03
1503	BUB1B, KIF20A, TK1	1.02E-03	1.29E-02
1504	BUB1B, KIF20A, TOP2A	3.52E-04	3.31E-03
1505	BUB1B, MCM10, NUSAP1	3.27E-03	3.09E-02
1506	BUB1B, MCM10, ORC6L	9.91E-04	8.38E-03
1507	BUB1B, MCM10, PBK	4.85E-04	7.30E-03
1508	BUB1B, MCM10, PLK1	1.84E-03	1.84E-02
1509	BUB1B, MCM10, PRC1	3.23E-03	2.45E-02
1510	BUB1B, MCM10, PTTG1	6.57E-04	9.77E-03
1511	BUB1B, MCM10, RAD51	1.38E-03	1.13E-02
1512	BUB1B, MCM10, RAD54L	7.61E-04	5.78E-03
1513	BUB1B, MCM10, RRM2	1.06E-03	1.17E-02
1514	BUB1B, MCM10, TK1	3.42E-03	3.17E-02
1515	BUB1B, MCM10, TOP2A	1.14E-03	9.11E-03
1516	BUB1B, NUSAP1, ORC6L	7.89E-04	8.74E-03
1517	BUB1B, NUSAP1, PBK	3.27E-04	6.59E-03
1518	BUB1B, NUSAP1, PLK1	2.44E-03	2.69E-02
1519	BUB1B, NUSAP1, PRC1	2.76E-03	2.64E-02
1520	BUB1B, NUSAP1, PTTG1	5.09E-04	1.05E-02
1521	BUB1B, NUSAP1, RAD51	1.11E-03	1.16E-02
1522	BUB1B, NUSAP1, RAD54L	5.98E-04	5.91E-03
1523	BUB1B, NUSAP1, RRM2	9.86E-04	1.36E-02
1524	BUB1B, NUSAP1, TK1	2.87E-03	3.47E-02
1525	BUB1B, NUSAP1, TOP2A	1.47E-03	1.26E-02
1526	BUB1B, ORC6L, PBK	8.72E-05	1.49E-03
1527	BUB1B, ORC6L, PLK1	4.96E-04	5.20E-03
1528	BUB1B, ORC6L, PRC1	7.89E-04	6.22E-03
1529	BUB1B, ORC6L, PTTG1	7.98E-05	1.47E-03
1530	BUB1B, ORC6L, RAD51	2.52E-04	2.07E-03
1531	BUB1B, ORC6L, RAD54L	1.43E-04	1.01E-03
1532	BUB1B, ORC6L, RRM2	2.13E-04	2.66E-03
1533	BUB1B, ORC6L, TK1	7.56E-04	8.37E-03
1534	BUB1B, ORC6L, TOP2A	2.55E-04	1.99E-03
1535	BUB1B, PBK, PLK1	1.58E-04	3.16E-03
1536	BUB1B, PBK, PRC1	2.95E-04	4.71E-03
1537	BUB1B, PBK, PTTG1	3.76E-05	1.37E-03
1538	BUB1B, PBK, RAD51	1.04E-04	1.80E-03
1539	BUB1B, PBK, RAD54L	5.37E-05	8.29E-04
1540	BUB1B, PBK, RRM2	7.09E-05	1.80E-03
1541	BUB1B, PBK, TK1	2.38E-04	5.29E-03
1542	BUB1B, PBK, TOP2A	1.13E-04	1.63E-03
1543	BUB1B, PLK1, PRC1	1.48E-03	1.47E-02
1544	BUB1B, PLK1, PTTG1	3.09E-04	5.91E-03
1545	BUB1B, PLK1, RAD51	5.45E-04	5.73E-03
1546	BUB1B, PLK1, RAD54L	3.26E-04	3.01E-03
1547	BUB1B, PLK1, RRM2	5.50E-04	7.42E-03
1548	BUB1B, PLK1, TK1	1.65E-03	2.11E-02
1549	BUB1B, PLK1, TOP2A	9.18E-04	7.68E-03
1550	BUB1B, PRC1, PTTG1	4.07E-04	6.45E-03
1551	BUB1B, PRC1, RAD51	9.44E-04	7.57E-03
1552	BUB1B, PRC1, RAD54L	5.75E-04	3.95E-03
1553	BUB1B, PRC1, RRM2	8.50E-04	9.10E-03
1554	BUB1B, PRC1, TK1	2.59E-03	2.49E-02
1555	BUB1B, PRC1, TOP2A	6.68E-04	5.50E-03
1556	BUB1B, PTTG1, RAD51	1.16E-04	2.02E-03
1557	BUB1B, PTTG1, RAD54L	5.94E-05	9.04E-04
1558	BUB1B, PTTG1, RRM2	1.13E-04	2.68E-03
1559	BUB1B, PTTG1, TK1	4.58E-04	9.50E-03
1560	BUB1B, PTTG1, TOP2A	1.60E-04	2.31E-03
1561	BUB1B, RAD51, RAD54L	1.75E-04	1.24E-03
1562	BUB1B, RAD51, RRM2	2.46E-04	3.03E-03
1563	BUB1B, RAD51, TK1	9.93E-04	1.05E-02

1564	BUB1B, RAD51, TOP2A	3.67E-04	2.79E-03
1565	BUB1B, RAD54L, RRM2	1.42E-04	1.51E-03
1566	BUB1B, RAD54L, TK1	5.40E-04	5.25E-03
1567	BUB1B, RAD54L, TOP2A	1.28E-04	8.88E-04
1568	BUB1B, RRM2, TK1	8.69E-04	1.22E-02
1569	BUB1B, RRM2, TOP2A	2.77E-04	3.07E-03
1570	BUB1B, TK1, TOP2A	8.80E-04	9.21E-03
1571	C18orf24, CDC2, CDC20	4.02E-04	2.41E-03
1572	C18orf24, CDC2, CDCA3	8.91E-04	4.54E-03
1573	C18orf24, CDC2, CDCA8	1.71E-04	1.83E-03
1574	C18orf24, CDC2, CDKN3	1.33E-04	1.36E-03
1575	C18orf24, CDC2, CENPF	5.74E-05	4.34E-04
1576	C18orf24, CDC2, CENPM	3.95E-04	2.45E-03
1577	C18orf24, CDC2, CEP55	7.49E-05	4.89E-04
1578	C18orf24, CDC2, DLGAP5	1.32E-04	6.81E-04
1579	C18orf24, CDC2, DTL	8.55E-05	4.95E-04
1580	C18orf24, CDC2, FOXM1	2.01E-04	1.46E-03
1581	C18orf24, CDC2, KIAA0101	3.15E-04	1.62E-03
1582	C18orf24, CDC2, KIF11	2.20E-05	2.59E-04
1583	C18orf24, CDC2, KIF20A	1.21E-04	9.53E-04
1584	C18orf24, CDC2, MCM10	3.86E-04	2.93E-03
1585	C18orf24, CDC2, NUSAP1	5.35E-04	4.07E-03
1586	C18orf24, CDC2, ORC6L	8.71E-05	5.60E-04
1587	C18orf24, CDC2, PBK	4.25E-05	5.07E-04
1588	C18orf24, CDC2, PLK1	3.04E-04	2.19E-03
1589	C18orf24, CDC2, PRC1	1.86E-04	1.44E-03
1590	C18orf24, CDC2, PTTG1	3.59E-05	4.62E-04
1591	C18orf24, CDC2, RAD51	1.04E-04	6.66E-04
1592	C18orf24, CDC2, RAD54L	4.74E-05	2.65E-04
1593	C18orf24, CDC2, RRM2	6.40E-05	7.43E-04
1594	C18orf24, CDC2, TK1	3.16E-04	3.01E-03
1595	C18orf24, CDC2, TOP2A	3.49E-04	1.65E-03
1596	C18orf24, CDC20, CDCA3	9.84E-04	5.87E-03
1597	C18orf24, CDC20, CDCA8	1.90E-04	2.31E-03
1598	C18orf24, CDC20, CDKN3	1.31E-04	1.59E-03
1599	C18orf24, CDC20, CENPF	6.27E-05	6.18E-04
1600	C18orf24, CDC20, CENPM	2.89E-04	2.37E-03
1601	C18orf24, CDC20, CEP55	6.01E-05	5.20E-04
1602	C18orf24, CDC20, DLGAP5	1.21E-04	7.86E-04
1603	C18orf24, CDC20, DTL	8.02E-05	6.31E-04
1604	C18orf24, CDC20, FOXM1	1.91E-04	1.72E-03
1605	C18orf24, CDC20, KIAA0101	2.32E-04	1.54E-03
1606	C18orf24, CDC20, KIF11	2.29E-05	3.57E-04
1607	C18orf24, CDC20, KIF20A	1.15E-04	1.11E-03
1608	C18orf24, CDC20, MCM10	3.69E-04	3.31E-03
1609	C18orf24, CDC20, NUSAP1	4.67E-04	4.46E-03
1610	C18orf24, CDC20, ORC6L	7.93E-05	6.67E-04
1611	C18orf24, CDC20, PBK	4.48E-05	6.41E-04
1612	C18orf24, CDC20, PLK1	2.71E-04	2.47E-03
1613	C18orf24, CDC20, PRC1	1.77E-04	1.68E-03
1614	C18orf24, CDC20, PTTG1	3.78E-05	6.03E-04
1615	C18orf24, CDC20, RAD51	9.38E-05	7.66E-04
1616	C18orf24, CDC20, RAD54L	5.30E-05	3.89E-04
1617	C18orf24, CDC20, RRM2	6.06E-05	8.44E-04
1618	C18orf24, CDC20, TK1	2.88E-04	3.25E-03
1619	C18orf24, CDC20, TOP2A	2.63E-04	1.65E-03
1620	C18orf24, CDCA3, CDCA8	4.05E-04	4.27E-03
1621	C18orf24, CDCA3, CDKN3	4.63E-04	4.47E-03
1622	C18orf24, CDCA3, CENPF	2.00E-04	1.69E-03
1623	C18orf24, CDCA3, CENPM	1.16E-03	7.39E-03
1624	C18orf24, CDCA3, CEP55	2.49E-04	1.64E-03
1625	C18orf24, CDCA3, DLGAP5	2.76E-04	1.53E-03
1626	C18orf24, CDCA3, DTL	1.99E-04	1.28E-03
1627	C18orf24, CDCA3, FOXM1	7.39E-04	4.83E-03
1628	C18orf24, CDCA3, KIAA0101	7.36E-04	3.63E-03
1629	C18orf24, CDCA3, KIF11	1.19E-04	1.26E-03
1630	C18orf24, CDCA3, KIF20A	2.37E-04	2.02E-03
1631	C18orf24, CDCA3, MCM10	1.04E-03	7.07E-03
1632	C18orf24, CDCA3, NUSAP1	1.30E-03	1.05E-02
1633	C18orf24, CDCA3, ORC6L	2.93E-04	2.08E-03
1634	C18orf24, CDCA3, PBK	2.41E-04	2.26E-03

1635	C18orf24, CDCA3, PLK1	8.17E-04	5.91E-03
1636	C18orf24, CDCA3, PRC1	4.91E-04	3.78E-03
1637	C18orf24, CDCA3, PTTG1	1.94E-04	2.33E-03
1638	C18orf24, CDCA3, RAD51	4.24E-04	2.70E-03
1639	C18orf24, CDCA3, RAD54L	1.60E-04	9.94E-04
1640	C18orf24, CDCA3, RRM2	1.98E-04	2.34E-03
1641	C18orf24, CDCA3, TK1	6.36E-04	6.25E-03
1642	C18orf24, CDCA3, TOP2A	7.41E-04	3.98E-03
1643	C18orf24, CDCA8, CDKN3	6.92E-05	1.47E-03
1644	C18orf24, CDCA8, CENPF	2.92E-05	5.01E-04
1645	C18orf24, CDCA8, CENPM	1.73E-04	2.40E-03
1646	C18orf24, CDCA8, CEP55	2.64E-05	4.06E-04
1647	C18orf24, CDCA8, DLGAP5	5.16E-05	5.78E-04
1648	C18orf24, CDCA8, DTL	3.23E-05	4.83E-04
1649	C18orf24, CDCA8, FOXM1	1.04E-04	1.57E-03
1650	C18orf24, CDCA8, KIAA0101	1.04E-04	1.23E-03
1651	C18orf24, CDCA8, KIF11	7.39E-06	2.30E-04
1652	C18orf24, CDCA8, KIF20A	5.31E-05	9.36E-04
1653	C18orf24, CDCA8, MCM10	2.39E-04	3.40E-03
1654	C18orf24, CDCA8, NUSAP1	2.15E-04	3.79E-03
1655	C18orf24, CDCA8, ORC6L	3.29E-05	5.03E-04
1656	C18orf24, CDCA8, PBK	1.86E-05	4.99E-04
1657	C18orf24, CDCA8, PLK1	1.38E-04	2.17E-03
1658	C18orf24, CDCA8, PRC1	1.10E-04	1.74E-03
1659	C18orf24, CDCA8, PTTG1	1.74E-05	5.15E-04
1660	C18orf24, CDCA8, RAD51	4.04E-05	6.02E-04
1661	C18orf24, CDCA8, RAD54L	2.28E-05	2.97E-04
1662	C18orf24, CDCA8, RRM2	3.85E-05	8.87E-04
1663	C18orf24, CDCA8, TK1	1.74E-04	3.26E-03
1664	C18orf24, CDCA8, TOP2A	1.18E-04	1.26E-03
1665	C18orf24, CDKN3, CENPF	2.57E-05	4.09E-04
1666	C18orf24, CDKN3, CENPM	1.23E-04	1.69E-03
1667	C18orf24, CDKN3, CEP55	2.57E-05	3.65E-04
1668	C18orf24, CDKN3, DLGAP5	4.41E-05	4.65E-04
1669	C18orf24, CDKN3, DTL	2.55E-05	3.70E-04
1670	C18orf24, CDKN3, FOXM1	8.56E-05	1.23E-03
1671	C18orf24, CDKN3, KIAA0101	7.58E-05	8.72E-04
1672	C18orf24, CDKN3, KIF11	7.99E-06	2.11E-04
1673	C18orf24, CDKN3, KIF20A	3.67E-05	6.30E-04
1674	C18orf24, CDKN3, MCM10	1.48E-04	2.19E-03
1675	C18orf24, CDKN3, NUSAP1	1.76E-04	2.92E-03
1676	C18orf24, CDKN3, ORC6L	2.66E-05	3.87E-04
1677	C18orf24, CDKN3, PBK	1.67E-05	4.09E-04
1678	C18orf24, CDKN3, PLK1	1.37E-04	1.95E-03
1679	C18orf24, CDKN3, PRC1	6.07E-05	1.03E-03
1680	C18orf24, CDKN3, PTTG1	1.42E-05	3.81E-04
1681	C18orf24, CDKN3, RAD51	2.97E-05	4.28E-04
1682	C18orf24, CDKN3, RAD54L	1.35E-05	1.79E-04
1683	C18orf24, CDKN3, RRM2	2.31E-05	5.56E-04
1684	C18orf24, CDKN3, TK1	1.08E-04	2.09E-03
1685	C18orf24, CDKN3, TOP2A	1.21E-04	1.18E-03
1686	C18orf24, CENPF, CENPM	5.74E-05	6.15E-04
1687	C18orf24, CENPF, CEP55	1.36E-05	1.41E-04
1688	C18orf24, CENPF, DLGAP5	2.07E-05	1.64E-04
1689	C18orf24, CENPF, DTL	1.62E-05	1.56E-04
1690	C18orf24, CENPF, FOXM1	4.22E-05	4.72E-04
1691	C18orf24, CENPF, KIAA0101	3.25E-05	2.73E-04
1692	C18orf24, CENPF, KIF11	2.87E-06	5.78E-05
1693	C18orf24, CENPF, KIF20A	1.51E-05	2.12E-04
1694	C18orf24, CENPF, MCM10	6.36E-05	7.75E-04
1695	C18orf24, CENPF, NUSAP1	1.21E-04	1.62E-03
1696	C18orf24, CENPF, ORC6L	1.13E-05	1.24E-04
1697	C18orf24, CENPF, PBK	4.58E-06	9.32E-05
1698	C18orf24, CENPF, PLK1	9.00E-05	9.97E-04
1699	C18orf24, CENPF, PRC1	3.03E-05	3.73E-04
1700	C18orf24, CENPF, PTTG1	5.53E-06	1.17E-04
1701	C18orf24, CENPF, RAD51	1.18E-05	1.26E-04
1702	C18orf24, CENPF, RAD54L	7.47E-06	7.02E-05
1703	C18orf24, CENPF, RRM2	1.12E-05	1.98E-04
1704	C18orf24, CENPF, TK1	4.24E-05	7.00E-04
1705	C18orf24, CENPF, TOP2A	8.38E-05	6.17E-04

1706	C18orf24, CENPM, CEP55	9.28E-05	8.67E-04
1707	C18orf24, CENPM, DLGAP5	8.27E-05	5.83E-04
1708	C18orf24, CENPM, DTL	7.37E-05	6.15E-04
1709	C18orf24, CENPM, FOXM1	1.92E-04	1.84E-03
1710	C18orf24, CENPM, KIAA0101	2.49E-04	1.72E-03
1711	C18orf24, CENPM, KIF11	2.14E-05	3.68E-04
1712	C18orf24, CENPM, KIF20A	9.45E-05	1.05E-03
1713	C18orf24, CENPM, MCM10	4.69E-04	4.38E-03
1714	C18orf24, CENPM, NUSAP1	5.00E-04	5.31E-03
1715	C18orf24, CENPM, ORC6L	6.23E-05	5.62E-04
1716	C18orf24, CENPM, PBK	4.12E-05	6.81E-04
1717	C18orf24, CENPM, PLK1	2.43E-04	2.41E-03
1718	C18orf24, CENPM, PRC1	1.71E-04	1.76E-03
1719	C18orf24, CENPM, PTTG1	3.02E-05	5.50E-04
1720	C18orf24, CENPM, RAD51	1.09E-04	9.15E-04
1721	C18orf24, CENPM, RAD54L	3.32E-05	2.68E-04
1722	C18orf24, CENPM, RRM2	6.37E-05	9.40E-04
1723	C18orf24, CENPM, TK1	3.18E-04	3.88E-03
1724	C18orf24, CENPM, TOP2A	5.37E-04	3.31E-03
1725	C18orf24, CEP55, DLGAP5	1.83E-05	1.34E-04
1726	C18orf24, CEP55, DTL	9.44E-06	9.02E-05
1727	C18orf24, CEP55, FOXM1	3.95E-05	4.03E-04
1728	C18orf24, CEP55, KIAA0101	4.95E-05	3.51E-04
1729	C18orf24, CEP55, KIF11	3.92E-06	7.02E-05
1730	C18orf24, CEP55, KIF20A	1.76E-05	1.92E-04
1731	C18orf24, CEP55, MCM10	7.97E-05	8.16E-04
1732	C18orf24, CEP55, NUSAP1	7.43E-05	8.76E-04
1733	C18orf24, CEP55, ORC6L	1.04E-05	1.01E-04
1734	C18orf24, CEP55, PBK	7.64E-06	1.29E-04
1735	C18orf24, CEP55, PLK1	5.80E-05	6.21E-04
1736	C18orf24, CEP55, PRC1	2.53E-05	2.89E-04
1737	C18orf24, CEP55, PTTG1	5.20E-06	9.63E-05
1738	C18orf24, CEP55, RAD51	1.64E-05	1.45E-04
1739	C18orf24, CEP55, RAD54L	3.98E-06	3.44E-05
1740	C18orf24, CEP55, RRM2	9.40E-06	1.49E-04
1741	C18orf24, CEP55, TK1	4.94E-05	6.83E-04
1742	C18orf24, CEP55, TOP2A	1.32E-04	8.72E-04
1743	C18orf24, DLGAP5, DTL	2.46E-05	1.56E-04
1744	C18orf24, DLGAP5, FOXM1	6.02E-05	4.73E-04
1745	C18orf24, DLGAP5, KIAA0101	8.01E-05	4.46E-04
1746	C18orf24, DLGAP5, KIF11	7.76E-06	9.70E-05
1747	C18orf24, DLGAP5, KIF20A	3.49E-05	2.81E-04
1748	C18orf24, DLGAP5, MCM10	1.33E-04	1.07E-03
1749	C18orf24, DLGAP5, NUSAP1	1.31E-04	1.15E-03
1750	C18orf24, DLGAP5, ORC6L	2.49E-05	1.65E-04
1751	C18orf24, DLGAP5, PBK	1.31E-05	1.63E-04
1752	C18orf24, DLGAP5, PLK1	8.92E-05	7.19E-04
1753	C18orf24, DLGAP5, PRC1	5.85E-05	4.66E-04
1754	C18orf24, DLGAP5, PTTG1	9.97E-06	1.34E-04
1755	C18orf24, DLGAP5, RAD51	3.34E-05	2.18E-04
1756	C18orf24, DLGAP5, RAD54L	1.58E-05	9.05E-05
1757	C18orf24, DLGAP5, RRM2	1.51E-05	1.81E-04
1758	C18orf24, DLGAP5, TK1	8.65E-05	8.88E-04
1759	C18orf24, DLGAP5, TOP2A	9.04E-05	4.81E-04
1760	C18orf24, DTL, FOXM1	4.50E-05	4.40E-04
1761	C18orf24, DTL, KIAA0101	4.82E-05	3.06E-04
1762	C18orf24, DTL, KIF11	2.34E-06	4.29E-05
1763	C18orf24, DTL, KIF20A	1.59E-05	1.70E-04
1764	C18orf24, DTL, MCM10	9.07E-05	9.09E-04
1765	C18orf24, DTL, NUSAP1	1.28E-04	1.40E-03
1766	C18orf24, DTL, ORC6L	1.16E-05	9.86E-05
1767	C18orf24, DTL, PBK	5.17E-06	9.36E-05
1768	C18orf24, DTL, PLK1	9.05E-05	8.93E-04
1769	C18orf24, DTL, PRC1	3.49E-05	3.44E-04
1770	C18orf24, DTL, PTTG1	3.78E-06	7.80E-05
1771	C18orf24, DTL, RAD51	1.65E-05	1.36E-04
1772	C18orf24, DTL, RAD54L	7.51E-06	5.13E-05
1773	C18orf24, DTL, RRM2	9.24E-06	1.43E-04
1774	C18orf24, DTL, TK1	6.05E-05	8.36E-04
1775	C18orf24, DTL, TOP2A	8.18E-05	5.13E-04
1776	C18orf24, FOXM1, KIAA0101	1.17E-04	9.49E-04

1777	C18orf24, FOXM1, KIF11	1.25E-05	2.33E-04
1778	C18orf24, FOXM1, KIF20A	5.50E-05	6.63E-04
1779	C18orf24, FOXM1, MCM10	2.32E-04	2.45E-03
1780	C18orf24, FOXM1, NUSAP1	2.79E-04	3.20E-03
1781	C18orf24, FOXM1, ORC6L	4.20E-05	4.23E-04
1782	C18orf24, FOXM1, PBK	2.62E-05	4.56E-04
1783	C18orf24, FOXM1, PLK1	2.07E-04	2.13E-03
1784	C18orf24, FOXM1, PRC1	1.08E-04	1.21E-03
1785	C18orf24, FOXM1, PTTG1	2.04E-05	3.91E-04
1786	C18orf24, FOXM1, RAD51	5.08E-05	5.05E-04
1787	C18orf24, FOXM1, RAD54L	2.48E-05	2.20E-04
1788	C18orf24, FOXM1, RRM2	4.05E-05	6.43E-04
1789	C18orf24, FOXM1, TK1	1.63E-04	2.29E-03
1790	C18orf24, FOXM1, TOP2A	1.70E-04	1.24E-03
1791	C18orf24, KIAA0101, KIF11	1.29E-05	1.77E-04
1792	C18orf24, KIAA0101, KIF20A	7.57E-05	6.45E-04
1793	C18orf24, KIAA0101, MCM10	2.93E-04	2.37E-03
1794	C18orf24, KIAA0101, NUSAP1	3.13E-04	2.81E-03
1795	C18orf24, KIAA0101, ORC6L	5.91E-05	3.98E-04
1796	C18orf24, KIAA0101, PBK	2.92E-05	3.81E-04
1797	C18orf24, KIAA0101, PLK1	1.52E-04	1.27E-03
1798	C18orf24, KIAA0101, PRC1	1.38E-04	1.11E-03
1799	C18orf24, KIAA0101, PTTG1	1.76E-05	2.63E-04
1800	C18orf24, KIAA0101, RAD51	6.91E-05	4.66E-04
1801	C18orf24, KIAA0101, RAD54L	2.96E-05	1.82E-04
1802	C18orf24, KIAA0101, RRM2	3.58E-05	4.43E-04
1803	C18orf24, KIAA0101, TK1	2.12E-04	2.11E-03
1804	C18orf24, KIAA0101, TOP2A	1.98E-04	1.02E-03
1805	C18orf24, KIF11, KIF20A	3.68E-06	8.48E-05
1806	C18orf24, KIF11, MCM10	2.39E-05	4.79E-04
1807	C18orf24, KIF11, NUSAP1	3.06E-05	6.83E-04
1808	C18orf24, KIF11, ORC6L	3.11E-06	5.83E-05
1809	C18orf24, KIF11, PBK	2.54E-06	7.24E-05
1810	C18orf24, KIF11, PLK1	2.23E-05	4.13E-04
1811	C18orf24, KIF11, PRC1	8.17E-06	1.82E-04
1812	C18orf24, KIF11, PTTG1	1.89E-06	6.95E-05
1813	C18orf24, KIF11, RAD51	3.91E-06	7.04E-05
1814	C18orf24, KIF11, RAD54L	1.65E-06	2.76E-05
1815	C18orf24, KIF11, RRM2	2.59E-06	8.17E-05
1816	C18orf24, KIF11, TK1	1.25E-05	3.58E-04
1817	C18orf24, KIF11, TOP2A	2.77E-05	3.09E-04
1818	C18orf24, KIF20A, MCM10	1.36E-04	1.62E-03
1819	C18orf24, KIF20A, NUSAP1	1.58E-04	2.27E-03
1820	C18orf24, KIF20A, ORC6L	1.99E-05	2.25E-04
1821	C18orf24, KIF20A, PBK	1.04E-05	2.12E-04
1822	C18orf24, KIF20A, PLK1	7.07E-05	9.05E-04
1823	C18orf24, KIF20A, PRC1	5.58E-05	7.21E-04
1824	C18orf24, KIF20A, PTTG1	8.37E-06	1.87E-04
1825	C18orf24, KIF20A, RAD51	2.39E-05	2.53E-04
1826	C18orf24, KIF20A, RAD54L	1.22E-05	1.19E-04
1827	C18orf24, KIF20A, RRM2	1.54E-05	3.07E-04
1828	C18orf24, KIF20A, TK1	8.86E-05	1.38E-03
1829	C18orf24, KIF20A, TOP2A	8.24E-05	6.41E-04
1830	C18orf24, MCM10, NUSAP1	4.36E-04	5.28E-03
1831	C18orf24, MCM10, ORC6L	8.83E-05	8.92E-04
1832	C18orf24, MCM10, PBK	5.97E-05	1.03E-03
1833	C18orf24, MCM10, PLK1	2.49E-04	2.87E-03
1834	C18orf24, MCM10, PRC1	2.58E-04	2.82E-03
1835	C18orf24, MCM10, PTTG1	4.56E-05	8.89E-04
1836	C18orf24, MCM10, RAD51	1.29E-04	1.26E-03
1837	C18orf24, MCM10, RAD54L	6.10E-05	5.54E-04
1838	C18orf24, MCM10, RRM2	7.93E-05	1.28E-03
1839	C18orf24, MCM10, TK1	3.88E-04	4.92E-03
1840	C18orf24, MCM10, TOP2A	2.46E-04	1.88E-03
1841	C18orf24, NUSAP1, ORC6L	8.96E-05	1.09E-03
1842	C18orf24, NUSAP1, PBK	5.27E-05	1.06E-03
1843	C18orf24, NUSAP1, PLK1	4.88E-04	5.56E-03
1844	C18orf24, NUSAP1, PRC1	2.41E-04	3.23E-03
1845	C18orf24, NUSAP1, PTTG1	4.99E-05	1.16E-03
1846	C18orf24, NUSAP1, RAD51	1.26E-04	1.44E-03
1847	C18orf24, NUSAP1, RAD54L	6.00E-05	6.70E-04

1848	C18orf24, NUSAP1, RRM2	9.92E-05	1.82E-03
1849	C18orf24, NUSAP1, TK1	3.62E-04	5.66E-03
1850	C18orf24, NUSAP1, TOP2A	4.71E-04	3.47E-03
1851	C18orf24, ORC6L, PBK	1.02E-05	1.67E-04
1852	C18orf24, ORC6L, PLK1	6.71E-05	7.03E-04
1853	C18orf24, ORC6L, PRC1	4.10E-05	4.07E-04
1854	C18orf24, ORC6L, PTTG1	4.11E-06	8.14E-05
1855	C18orf24, ORC6L, RAD51	1.82E-05	1.51E-04
1856	C18orf24, ORC6L, RAD54L	8.88E-06	6.58E-05
1857	C18orf24, ORC6L, RRM2	1.15E-05	1.89E-04
1858	C18orf24, ORC6L, TK1	6.04E-05	8.26E-04
1859	C18orf24, ORC6L, TOP2A	6.04E-05	4.10E-04
1860	C18orf24, PBK, PLK1	2.91E-05	5.19E-04
1861	C18orf24, PBK, PRC1	2.25E-05	4.34E-04
1862	C18orf24, PBK, PTTG1	3.65E-06	1.25E-04
1863	C18orf24, PBK, RAD51	1.15E-05	1.94E-04
1864	C18orf24, PBK, RAD54L	5.13E-06	7.75E-05
1865	C18orf24, PBK, RRM2	5.95E-06	1.80E-04
1866	C18orf24, PBK, TK1	2.62E-05	6.56E-04
1867	C18orf24, PBK, TOP2A	3.50E-05	4.02E-04
1868	C18orf24, PLK1, PRC1	1.33E-04	1.61E-03
1869	C18orf24, PLK1, PTTG1	3.92E-05	7.41E-04
1870	C18orf24, PLK1, RAD51	6.91E-05	7.20E-04
1871	C18orf24, PLK1, RAD54L	3.78E-05	3.55E-04
1872	C18orf24, PLK1, RRM2	6.16E-05	9.72E-04
1873	C18orf24, PLK1, TK1	2.30E-04	3.40E-03
1874	C18orf24, PLK1, TOP2A	3.28E-04	2.37E-03
1875	C18orf24, PRC1, PTTG1	1.36E-05	3.11E-04
1876	C18orf24, PRC1, RAD51	4.68E-05	4.77E-04
1877	C18orf24, PRC1, RAD54L	2.56E-05	2.22E-04
1878	C18orf24, PRC1, RRM2	3.64E-05	6.25E-04
1879	C18orf24, PRC1, TK1	1.65E-04	2.43E-03
1880	C18orf24, PRC1, TOP2A	1.11E-04	8.74E-04
1881	C18orf24, PTTG1, RAD51	5.97E-06	1.10E-04
1882	C18orf24, PTTG1, RAD54L	2.64E-06	4.39E-05
1883	C18orf24, PTTG1, RRM2	4.77E-06	1.55E-04
1884	C18orf24, PTTG1, TK1	2.91E-05	7.92E-04
1885	C18orf24, PTTG1, TOP2A	3.63E-05	4.44E-04
1886	C18orf24, RAD51, RAD54L	1.04E-05	7.53E-05
1887	C18orf24, RAD51, RRM2	1.26E-05	2.05E-04
1888	C18orf24, RAD51, TK1	8.14E-05	1.04E-03
1889	C18orf24, RAD51, TOP2A	8.41E-05	5.52E-04
1890	C18orf24, RAD54L, RRM2	6.53E-06	9.17E-05
1891	C18orf24, RAD54L, TK1	3.76E-05	4.55E-04
1892	C18orf24, RAD54L, TOP2A	2.74E-05	1.64E-04
1893	C18orf24, RRM2, TK1	5.81E-05	1.23E-03
1894	C18orf24, RRM2, TOP2A	5.26E-05	5.71E-04
1895	C18orf24, TK1, TOP2A	1.97E-04	1.99E-03
1896	CDC2, CDC20, CDCA3	6.47E-03	1.90E-02
1897	CDC2, CDC20, CDCA8	2.75E-03	1.40E-02
1898	CDC2, CDC20, CDKN3	1.53E-03	8.63E-03
1899	CDC2, CDC20, CENPF	6.01E-04	2.89E-03
1900	CDC2, CDC20, CENPM	5.38E-03	1.68E-02
1901	CDC2, CDC20, CEP55	9.82E-04	3.69E-03
1902	CDC2, CDC20, DLGAP5	1.64E-03	5.23E-03
1903	CDC2, CDC20, DTL	1.58E-03	5.11E-03
1904	CDC2, CDC20, FOXM1	2.10E-03	8.71E-03
1905	CDC2, CDC20, KIAA0101	3.85E-03	1.17E-02
1906	CDC2, CDC20, KIF11	4.93E-04	2.91E-03
1907	CDC2, CDC20, KIF20A	2.04E-03	8.61E-03
1908	CDC2, CDC20, MCM10	4.30E-03	1.74E-02
1909	CDC2, CDC20, NUSAP1	5.58E-03	2.22E-02
1910	CDC2, CDC20, ORC6L	1.52E-03	5.37E-03
1911	CDC2, CDC20, PBK	6.37E-04	4.03E-03
1912	CDC2, CDC20, PLK1	2.77E-03	1.15E-02
1913	CDC2, CDC20, PRC1	3.25E-03	1.25E-02
1914	CDC2, CDC20, PTTG1	8.27E-04	5.23E-03
1915	CDC2, CDC20, RAD51	1.76E-03	6.24E-03
1916	CDC2, CDC20, RAD54L	1.05E-03	3.25E-03
1917	CDC2, CDC20, RRM2	1.15E-03	6.35E-03
1918	CDC2, CDC20, TK1	4.34E-03	1.96E-02

1919	CDC2, CDC20, TOP2A	2.80E-03	8.16E-03
1920	CDC2, CDCA3, CDCA8	3.29E-03	1.54E-02
1921	CDC2, CDCA3, CDKN3	2.80E-03	1.32E-02
1922	CDC2, CDCA3, CENPF	9.99E-04	4.14E-03
1923	CDC2, CDCA3, CENPM	9.43E-03	2.63E-02
1924	CDC2, CDCA3, CEP55	1.83E-03	5.45E-03
1925	CDC2, CDCA3, DLGAP5	2.17E-03	5.90E-03
1926	CDC2, CDCA3, DTL	1.98E-03	5.25E-03
1927	CDC2, CDCA3, FOXM1	4.19E-03	1.35E-02
1928	CDC2, CDCA3, KIAA0101	6.48E-03	1.55E-02
1929	CDC2, CDCA3, KIF11	9.24E-04	4.38E-03
1930	CDC2, CDCA3, KIF20A	2.34E-03	8.92E-03
1931	CDC2, CDCA3, MCM10	6.79E-03	2.27E-02
1932	CDC2, CDCA3, NUSAP1	7.83E-03	2.87E-02
1933	CDC2, CDCA3, ORC6L	2.59E-03	8.03E-03
1934	CDC2, CDCA3, PBK	1.66E-03	7.64E-03
1935	CDC2, CDCA3, PLK1	4.26E-03	1.47E-02
1936	CDC2, CDCA3, PRC1	4.39E-03	1.48E-02
1937	CDC2, CDCA3, PTTG1	1.88E-03	9.57E-03
1938	CDC2, CDCA3, RAD51	3.72E-03	1.09E-02
1939	CDC2, CDCA3, RAD54L	1.56E-03	4.16E-03
1940	CDC2, CDCA3, RRM2	1.72E-03	8.92E-03
1941	CDC2, CDCA3, TK1	5.37E-03	2.25E-02
1942	CDC2, CDCA3, TOP2A	3.84E-03	1.03E-02
1943	CDC2, CDCA8, CDKN3	9.49E-04	8.65E-03
1944	CDC2, CDCA8, CENPF	3.00E-04	2.42E-03
1945	CDC2, CDCA8, CENPM	4.06E-03	1.87E-02
1946	CDC2, CDCA8, CEP55	5.33E-04	3.31E-03
1947	CDC2, CDCA8, DLGAP5	9.44E-04	4.62E-03
1948	CDC2, CDCA8, DTL	8.43E-04	4.59E-03
1949	CDC2, CDCA8, FOXM1	1.34E-03	8.58E-03
1950	CDC2, CDCA8, KIAA0101	2.48E-03	1.15E-02
1951	CDC2, CDCA8, KIF11	2.25E-04	2.38E-03
1952	CDC2, CDCA8, KIF20A	1.29E-03	8.60E-03
1953	CDC2, CDCA8, MCM10	3.33E-03	1.91E-02
1954	CDC2, CDCA8, NUSAP1	3.30E-03	2.11E-02
1955	CDC2, CDCA8, ORC6L	9.08E-04	5.07E-03
1956	CDC2, CDCA8, PBK	3.35E-04	3.60E-03
1957	CDC2, CDCA8, PLK1	1.64E-03	1.09E-02
1958	CDC2, CDCA8, PRC1	2.50E-03	1.41E-02
1959	CDC2, CDCA8, PTTG1	4.82E-04	5.16E-03
1960	CDC2, CDCA8, RAD51	1.04E-03	5.88E-03
1961	CDC2, CDCA8, RAD54L	6.08E-04	2.93E-03
1962	CDC2, CDCA8, RRM2	8.48E-04	7.09E-03
1963	CDC2, CDCA8, TK1	3.24E-03	2.16E-02
1964	CDC2, CDCA8, TOP2A	1.58E-03	7.18E-03
1965	CDC2, CDKN3, CENPF	1.94E-04	1.58E-03
1966	CDC2, CDKN3, CENPM	2.15E-03	1.12E-02
1967	CDC2, CDKN3, CEP55	3.74E-04	2.32E-03
1968	CDC2, CDKN3, DLGAP5	5.89E-04	3.02E-03
1969	CDC2, CDKN3, DTL	4.44E-04	2.65E-03
1970	CDC2, CDKN3, FOXM1	8.13E-04	5.58E-03
1971	CDC2, CDKN3, KIAA0101	1.38E-03	6.99E-03
1972	CDC2, CDKN3, KIF11	1.39E-04	1.49E-03
1973	CDC2, CDKN3, KIF20A	6.74E-04	4.99E-03
1974	CDC2, CDKN3, MCM10	1.76E-03	1.16E-02
1975	CDC2, CDKN3, NUSAP1	1.99E-03	1.40E-02
1976	CDC2, CDKN3, ORC6L	4.85E-04	2.95E-03
1977	CDC2, CDKN3, PBK	2.09E-04	2.37E-03
1978	CDC2, CDKN3, PLK1	1.11E-03	7.66E-03
1979	CDC2, CDKN3, PRC1	1.12E-03	7.57E-03
1980	CDC2, CDKN3, PTTG1	2.43E-04	2.85E-03
1981	CDC2, CDKN3, RAD51	5.37E-04	3.37E-03
1982	CDC2, CDKN3, RAD54L	2.71E-04	1.48E-03
1983	CDC2, CDKN3, RRM2	3.65E-04	3.72E-03
1984	CDC2, CDKN3, TK1	1.59E-03	1.26E-02
1985	CDC2, CDKN3, TOP2A	1.14E-03	5.20E-03
1986	CDC2, CENPF, CENPM	7.13E-04	3.15E-03
1987	CDC2, CENPF, CEP55	1.69E-04	7.29E-04
1988	CDC2, CENPF, DLGAP5	2.25E-04	8.86E-04
1989	CDC2, CENPF, DTL	1.99E-04	7.72E-04

1990	CDC2, CENPF, FOXM1	3.06E-04	1.68E-03
1991	CDC2, CENPF, KIAA0101	5.15E-04	2.02E-03
1992	CDC2, CENPF, KIF11	3.37E-05	2.87E-04
1993	CDC2, CENPF, KIF20A	2.28E-04	1.43E-03
1994	CDC2, CENPF, MCM10	6.36E-04	3.73E-03
1995	CDC2, CENPF, NUSAP1	9.72E-04	5.93E-03
1996	CDC2, CENPF, ORC6L	1.62E-04	7.61E-04
1997	CDC2, CENPF, PBK	4.77E-05	4.62E-04
1998	CDC2, CENPF, PLK1	5.12E-04	2.81E-03
1999	CDC2, CENPF, PRC1	4.07E-04	2.19E-03
2000	CDC2, CENPF, PTTG1	6.70E-05	6.35E-04
2001	CDC2, CENPF, RAD51	1.66E-04	7.92E-04
2002	CDC2, CENPF, RAD54L	1.03E-04	4.07E-04
2003	CDC2, CENPF, RRM2	1.20E-04	9.91E-04
2004	CDC2, CENPF, TK1	5.13E-04	3.67E-03
2005	CDC2, CENPF, TOP2A	6.10E-04	2.07E-03
2006	CDC2, CENPM, CEP55	1.74E-03	6.27E-03
2007	CDC2, CENPM, DLGAP5	2.03E-03	5.65E-03
2008	CDC2, CENPM, DTL	2.23E-03	6.14E-03
2009	CDC2, CENPM, FOXM1	3.05E-03	1.12E-02
2010	CDC2, CENPM, KIAA0101	6.66E-03	1.73E-02
2011	CDC2, CENPM, KIF11	7.24E-04	3.91E-03
2012	CDC2, CENPM, KIF20A	2.94E-03	1.13E-02
2013	CDC2, CENPM, MCM10	7.58E-03	2.67E-02
2014	CDC2, CENPM, NUSAP1	8.62E-03	3.10E-02
2015	CDC2, CENPM, ORC6L	2.27E-03	6.83E-03
2016	CDC2, CENPM, PBK	9.09E-04	5.36E-03
2017	CDC2, CENPM, PLK1	3.71E-03	1.36E-02
2018	CDC2, CENPM, PRC1	5.04E-03	1.69E-02
2019	CDC2, CENPM, PTTG1	1.16E-03	6.52E-03
2020	CDC2, CENPM, RAD51	3.13E-03	9.32E-03
2021	CDC2, CENPM, RAD54L	1.16E-03	3.10E-03
2022	CDC2, CENPM, RRM2	1.86E-03	8.80E-03
2023	CDC2, CENPM, TK1	7.35E-03	2.91E-02
2024	CDC2, CENPM, TOP2A	6.23E-03	1.62E-02
2025	CDC2, CEP55, DLGAP5	3.91E-04	1.25E-03
2026	CDC2, CEP55, DTL	3.08E-04	1.00E-03
2027	CDC2, CEP55, FOXM1	5.39E-04	2.37E-03
2028	CDC2, CEP55, KIAA0101	1.19E-03	3.61E-03
2029	CDC2, CEP55, KIF11	8.35E-05	5.82E-04
2030	CDC2, CEP55, KIF20A	4.71E-04	2.12E-03
2031	CDC2, CEP55, MCM10	1.34E-03	5.95E-03
2032	CDC2, CEP55, NUSAP1	1.23E-03	5.67E-03
2033	CDC2, CEP55, ORC6L	2.93E-04	1.10E-03
2034	CDC2, CEP55, PBK	1.44E-04	1.00E-03
2035	CDC2, CEP55, PLK1	6.37E-04	2.87E-03
2036	CDC2, CEP55, PRC1	6.35E-04	2.85E-03
2037	CDC2, CEP55, PTTG1	1.45E-04	1.01E-03
2038	CDC2, CEP55, RAD51	4.35E-04	1.56E-03
2039	CDC2, CEP55, RAD54L	1.29E-04	4.17E-04
2040	CDC2, CEP55, RRM2	1.91E-04	1.22E-03
2041	CDC2, CEP55, TK1	1.06E-03	5.59E-03
2042	CDC2, CEP55, TOP2A	1.37E-03	3.93E-03
2043	CDC2, DLGAP5, DTL	5.81E-04	1.60E-03
2044	CDC2, DLGAP5, FOXM1	7.74E-04	2.91E-03
2045	CDC2, DLGAP5, KIAA0101	1.60E-03	4.37E-03
2046	CDC2, DLGAP5, KIF11	1.96E-04	9.84E-04
2047	CDC2, DLGAP5, KIF20A	7.71E-04	2.92E-03
2048	CDC2, DLGAP5, MCM10	1.81E-03	6.89E-03
2049	CDC2, DLGAP5, NUSAP1	1.97E-03	7.42E-03
2050	CDC2, DLGAP5, ORC6L	5.85E-04	1.75E-03
2051	CDC2, DLGAP5, PBK	2.20E-04	1.27E-03
2052	CDC2, DLGAP5, PLK1	1.04E-03	3.87E-03
2053	CDC2, DLGAP5, PRC1	1.27E-03	4.40E-03
2054	CDC2, DLGAP5, PTTG1	2.74E-04	1.54E-03
2055	CDC2, DLGAP5, RAD51	7.08E-04	2.18E-03
2056	CDC2, DLGAP5, RAD54L	3.76E-04	9.71E-04
2057	CDC2, DLGAP5, RRM2	3.65E-04	1.82E-03
2058	CDC2, DLGAP5, TK1	1.63E-03	7.05E-03
2059	CDC2, DLGAP5, TOP2A	1.17E-03	2.91E-03
2060	CDC2, DTL, FOXM1	7.14E-04	2.79E-03

2061	CDC2, DTL, KIAA0101	1.65E-03	4.29E-03
2062	CDC2, DTL, KIF11	8.75E-05	5.17E-04
2063	CDC2, DTL, KIF20A	6.33E-04	2.54E-03
2064	CDC2, DTL, MCM10	1.78E-03	7.16E-03
2065	CDC2, DTL, NUSAP1	2.40E-03	9.37E-03
2066	CDC2, DTL, ORC6L	4.59E-04	1.38E-03
2067	CDC2, DTL, PBK	1.29E-04	8.87E-04
2068	CDC2, DTL, PLK1	1.12E-03	4.37E-03
2069	CDC2, DTL, PRC1	1.21E-03	4.24E-03
2070	CDC2, DTL, PTTG1	1.66E-04	1.13E-03
2071	CDC2, DTL, RAD51	5.76E-04	1.78E-03
2072	CDC2, DTL, RAD54L	2.82E-04	6.87E-04
2073	CDC2, DTL, RRM2	2.88E-04	1.58E-03
2074	CDC2, DTL, TK1	1.71E-03	7.98E-03
2075	CDC2, DTL, TOP2A	1.24E-03	3.00E-03
2076	CDC2, FOXM1, KIAA0101	1.95E-03	7.05E-03
2077	CDC2, FOXM1, KIF11	2.15E-04	1.56E-03
2078	CDC2, FOXM1, KIF20A	9.46E-04	4.91E-03
2079	CDC2, FOXM1, MCM10	2.48E-03	1.19E-02
2080	CDC2, FOXM1, NUSAP1	2.96E-03	1.43E-02
2081	CDC2, FOXM1, ORC6L	7.36E-04	3.06E-03
2082	CDC2, FOXM1, PBK	3.12E-04	2.44E-03
2083	CDC2, FOXM1, PLK1	1.65E-03	7.98E-03
2084	CDC2, FOXM1, PRC1	1.74E-03	7.96E-03
2085	CDC2, FOXM1, PTTG1	3.41E-04	2.73E-03
2086	CDC2, FOXM1, RAD51	8.33E-04	3.55E-03
2087	CDC2, FOXM1, RAD54L	4.47E-04	1.62E-03
2088	CDC2, FOXM1, RRM2	6.03E-04	3.98E-03
2089	CDC2, FOXM1, TK1	2.22E-03	1.27E-02
2090	CDC2, FOXM1, TOP2A	1.58E-03	5.27E-03
2091	CDC2, KIAA0101, KIF11	4.45E-04	2.24E-03
2092	CDC2, KIAA0101, KIF20A	2.07E-03	7.52E-03
2093	CDC2, KIAA0101, MCM10	4.63E-03	1.64E-02
2094	CDC2, KIAA0101, NUSAP1	5.53E-03	1.95E-02
2095	CDC2, KIAA0101, ORC6L	1.61E-03	4.63E-03
2096	CDC2, KIAA0101, PBK	6.18E-04	3.43E-03
2097	CDC2, KIAA0101, PLK1	2.44E-03	8.81E-03
2098	CDC2, KIAA0101, PRC1	3.61E-03	1.17E-02
2099	CDC2, KIAA0101, PTTG1	7.29E-04	4.04E-03
2100	CDC2, KIAA0101, RAD51	1.93E-03	5.67E-03
2101	CDC2, KIAA0101, RAD54L	9.77E-04	2.51E-03
2102	CDC2, KIAA0101, RRM2	1.07E-03	5.08E-03
2103	CDC2, KIAA0101, TK1	4.62E-03	1.80E-02
2104	CDC2, KIAA0101, TOP2A	2.99E-03	7.08E-03
2105	CDC2, KIF11, KIF20A	1.47E-04	1.20E-03
2106	CDC2, KIF11, MCM10	6.01E-04	4.32E-03
2107	CDC2, KIF11, NUSAP1	6.12E-04	4.70E-03
2108	CDC2, KIF11, ORC6L	1.28E-04	7.99E-04
2109	CDC2, KIF11, PBK	5.94E-05	6.62E-04
2110	CDC2, KIF11, PLK1	2.86E-04	2.05E-03
2111	CDC2, KIF11, PRC1	3.18E-04	2.28E-03
2112	CDC2, KIF11, PTTG1	6.48E-05	8.28E-04
2113	CDC2, KIF11, RAD51	1.55E-04	9.71E-04
2114	CDC2, KIF11, RAD54L	7.27E-05	3.93E-04
2115	CDC2, KIF11, RRM2	8.08E-05	8.60E-04
2116	CDC2, KIF11, TK1	4.14E-04	3.75E-03
2117	CDC2, KIF11, TOP2A	3.60E-04	1.66E-03
2118	CDC2, KIF20A, MCM10	2.41E-03	1.19E-02
2119	CDC2, KIF20A, NUSAP1	2.82E-03	1.50E-02
2120	CDC2, KIF20A, ORC6L	6.77E-04	2.96E-03
2121	CDC2, KIF20A, PBK	2.44E-04	2.04E-03
2122	CDC2, KIF20A, PLK1	1.13E-03	6.09E-03
2123	CDC2, KIF20A, PRC1	1.71E-03	8.14E-03
2124	CDC2, KIF20A, PTTG1	3.38E-04	2.81E-03
2125	CDC2, KIF20A, RAD51	8.00E-04	3.47E-03
2126	CDC2, KIF20A, RAD54L	4.40E-04	1.67E-03
2127	CDC2, KIF20A, RRM2	4.93E-04	3.58E-03
2128	CDC2, KIF20A, TK1	2.21E-03	1.26E-02
2129	CDC2, KIF20A, TOP2A	1.34E-03	4.55E-03
2130	CDC2, MCM10, NUSAP1	5.45E-03	2.60E-02
2131	CDC2, MCM10, ORC6L	1.84E-03	7.60E-03

2132	CDC2, MCM10, PBK	8.28E-04	6.10E-03
2133	CDC2, MCM10, PLK1	2.80E-03	1.41E-02
2134	CDC2, MCM10, PRC1	4.28E-03	1.84E-02
2135	CDC2, MCM10, PTTG1	1.02E-03	7.53E-03
2136	CDC2, MCM10, RAD51	2.22E-03	9.23E-03
2137	CDC2, MCM10, RAD54L	1.20E-03	4.47E-03
2138	CDC2, MCM10, RRM2	1.49E-03	9.20E-03
2139	CDC2, MCM10, TK1	5.33E-03	2.68E-02
2140	CDC2, MCM10, TOP2A	3.05E-03	1.06E-02
2141	CDC2, NUSAP1, ORC6L	1.91E-03	8.30E-03
2142	CDC2, NUSAP1, PBK	7.49E-04	5.99E-03
2143	CDC2, NUSAP1, PLK1	4.52E-03	2.19E-02
2144	CDC2, NUSAP1, PRC1	4.51E-03	2.08E-02
2145	CDC2, NUSAP1, PTTG1	1.05E-03	8.62E-03
2146	CDC2, NUSAP1, RAD51	2.43E-03	1.04E-02
2147	CDC2, NUSAP1, RAD54L	1.26E-03	4.97E-03
2148	CDC2, NUSAP1, RRM2	1.68E-03	1.12E-02
2149	CDC2, NUSAP1, TK1	5.82E-03	3.17E-02
2150	CDC2, NUSAP1, TOP2A	4.76E-03	1.53E-02
2151	CDC2, ORC6L, PBK	2.21E-04	1.47E-03
2152	CDC2, ORC6L, PLK1	9.66E-04	4.05E-03
2153	CDC2, ORC6L, PRC1	1.34E-03	4.91E-03
2154	CDC2, ORC6L, PTTG1	1.88E-04	1.29E-03
2155	CDC2, ORC6L, RAD51	6.21E-04	2.06E-03
2156	CDC2, ORC6L, RAD54L	3.40E-04	9.47E-04
2157	CDC2, ORC6L, RRM2	3.57E-04	2.06E-03
2158	CDC2, ORC6L, TK1	1.67E-03	8.04E-03
2159	CDC2, ORC6L, TOP2A	1.00E-03	2.79E-03
2160	CDC2, PBK, PLK1	3.20E-04	2.56E-03
2161	CDC2, PBK, PRC1	5.00E-04	3.69E-03
2162	CDC2, PBK, PTTG1	8.85E-05	1.22E-03
2163	CDC2, PBK, RAD51	2.51E-04	1.73E-03
2164	CDC2, PBK, RAD54L	1.27E-04	7.50E-04
2165	CDC2, PBK, RRM2	1.27E-04	1.49E-03
2166	CDC2, PBK, TK1	5.27E-04	4.97E-03
2167	CDC2, PBK, TOP2A	4.20E-04	2.13E-03
2168	CDC2, PLK1, PRC1	2.07E-03	9.86E-03
2169	CDC2, PLK1, PTTG1	4.99E-04	3.97E-03
2170	CDC2, PLK1, RAD51	1.03E-03	4.46E-03
2171	CDC2, PLK1, RAD54L	5.96E-04	2.18E-03
2172	CDC2, PLK1, RRM2	7.67E-04	5.08E-03
2173	CDC2, PLK1, TK1	2.93E-03	1.73E-02
2174	CDC2, PLK1, TOP2A	2.43E-03	8.01E-03
2175	CDC2, PRC1, PTTG1	5.69E-04	4.31E-03
2176	CDC2, PRC1, RAD51	1.48E-03	5.67E-03
2177	CDC2, PRC1, RAD54L	8.64E-04	2.74E-03
2178	CDC2, PRC1, RRM2	1.07E-03	6.31E-03
2179	CDC2, PRC1, TK1	3.97E-03	1.99E-02
2180	CDC2, PRC1, TOP2A	1.84E-03	5.97E-03
2181	CDC2, PTTG1, RAD51	2.44E-04	1.68E-03
2182	CDC2, PTTG1, RAD54L	1.19E-04	6.84E-04
2183	CDC2, PTTG1, RRM2	1.60E-04	1.86E-03
2184	CDC2, PTTG1, TK1	8.98E-04	8.17E-03
2185	CDC2, PTTG1, TOP2A	5.65E-04	2.76E-03
2186	CDC2, RAD51, RAD54L	3.67E-04	1.05E-03
2187	CDC2, RAD51, RRM2	4.09E-04	2.41E-03
2188	CDC2, RAD51, TK1	2.02E-03	9.68E-03
2189	CDC2, RAD51, TOP2A	1.36E-03	3.77E-03
2190	CDC2, RAD54L, RRM2	2.29E-04	1.11E-03
2191	CDC2, RAD54L, TK1	1.07E-03	4.56E-03
2192	CDC2, RAD54L, TOP2A	4.96E-04	1.19E-03
2193	CDC2, RRM2, TK1	1.39E-03	1.02E-02
2194	CDC2, RRM2, TOP2A	6.99E-04	3.19E-03
2195	CDC2, TK1, TOP2A	2.83E-03	1.15E-02
2196	CDC20, CDCA3, CDCA8	3.46E-03	1.79E-02
2197	CDC20, CDCA3, CDKN3	2.79E-03	1.49E-02
2198	CDC20, CDCA3, CENPF	1.09E-03	5.47E-03
2199	CDC20, CDCA3, CENPM	7.32E-03	2.49E-02
2200	CDC20, CDCA3, CEP55	1.65E-03	6.12E-03
2201	CDC20, CDCA3, DLGAP5	2.09E-03	6.73E-03
2202	CDC20, CDCA3, DTL	1.84E-03	6.18E-03

2203	CDC20, CDCA3, FOXM1	4.05E-03	1.53E-02
2204	CDC20, CDCA3, KIAA0101	5.22E-03	1.50E-02
2205	CDC20, CDCA3, KIF11	9.52E-04	5.49E-03
2206	CDC20, CDCA3, KIF20A	2.25E-03	9.95E-03
2207	CDC20, CDCA3, MCM10	6.40E-03	2.43E-02
2208	CDC20, CDCA3, NUSAP1	7.16E-03	3.05E-02
2209	CDC20, CDCA3, ORC6L	2.56E-03	9.66E-03
2210	CDC20, CDCA3, PBK	1.59E-03	8.38E-03
2211	CDC20, CDCA3, PLK1	4.02E-03	1.65E-02
2212	CDC20, CDCA3, PRC1	4.12E-03	1.62E-02
2213	CDC20, CDCA3, PTTG1	1.81E-03	1.08E-02
2214	CDC20, CDCA3, RAD51	3.34E-03	1.17E-02
2215	CDC20, CDCA3, RAD54L	1.62E-03	5.28E-03
2216	CDC20, CDCA3, RRM2	1.70E-03	9.97E-03
2217	CDC20, CDCA3, TK1	5.00E-03	2.37E-02
2218	CDC20, CDCA3, TOP2A	3.47E-03	1.15E-02
2219	CDC20, CDCA8, CDKN3	9.43E-04	9.22E-03
2220	CDC20, CDCA8, CENPF	3.34E-04	3.12E-03
2221	CDC20, CDCA8, CENPM	2.89E-03	1.61E-02
2222	CDC20, CDCA8, CEP55	4.13E-04	3.17E-03
2223	CDC20, CDCA8, DLGAP5	8.77E-04	4.92E-03
2224	CDC20, CDCA8, DTL	7.99E-04	5.17E-03
2225	CDC20, CDCA8, FOXM1	1.30E-03	9.33E-03
2226	CDC20, CDCA8, KIAA0101	1.95E-03	1.05E-02
2227	CDC20, CDCA8, KIF11	2.32E-04	2.89E-03
2228	CDC20, CDCA8, KIF20A	1.21E-03	8.85E-03
2229	CDC20, CDCA8, MCM10	3.12E-03	1.96E-02
2230	CDC20, CDCA8, NUSAP1	3.01E-03	2.17E-02
2231	CDC20, CDCA8, ORC6L	8.64E-04	5.57E-03
2232	CDC20, CDCA8, PBK	3.62E-04	4.20E-03
2233	CDC20, CDCA8, PLK1	1.55E-03	1.17E-02
2234	CDC20, CDCA8, PRC1	2.33E-03	1.45E-02
2235	CDC20, CDCA8, PTTG1	4.81E-04	5.65E-03
2236	CDC20, CDCA8, RAD51	9.67E-04	6.23E-03
2237	CDC20, CDCA8, RAD54L	6.57E-04	3.64E-03
2238	CDC20, CDCA8, RRM2	7.93E-04	7.21E-03
2239	CDC20, CDCA8, TK1	2.88E-03	2.11E-02
2240	CDC20, CDCA8, TOP2A	1.22E-03	6.88E-03
2241	CDC20, CDKN3, CENPF	1.98E-04	1.93E-03
2242	CDC20, CDKN3, CENPM	1.44E-03	9.35E-03
2243	CDC20, CDKN3, CEP55	2.75E-04	2.14E-03
2244	CDC20, CDKN3, DLGAP5	5.10E-04	3.06E-03
2245	CDC20, CDKN3, DTL	3.86E-04	2.82E-03
2246	CDC20, CDKN3, FOXM1	7.41E-04	5.84E-03
2247	CDC20, CDKN3, KIAA0101	1.03E-03	6.20E-03
2248	CDC20, CDKN3, KIF11	1.34E-04	1.76E-03
2249	CDC20, CDKN3, KIF20A	6.01E-04	5.03E-03
2250	CDC20, CDKN3, MCM10	1.60E-03	1.17E-02
2251	CDC20, CDKN3, NUSAP1	1.71E-03	1.39E-02
2252	CDC20, CDKN3, ORC6L	4.42E-04	3.20E-03
2253	CDC20, CDKN3, PBK	2.09E-04	2.63E-03
2254	CDC20, CDKN3, PLK1	9.68E-04	7.79E-03
2255	CDC20, CDKN3, PRC1	1.01E-03	7.70E-03
2256	CDC20, CDKN3, PTTG1	2.28E-04	3.04E-03
2257	CDC20, CDKN3, RAD51	4.68E-04	3.42E-03
2258	CDC20, CDKN3, RAD54L	2.80E-04	1.81E-03
2259	CDC20, CDKN3, RRM2	3.32E-04	3.75E-03
2260	CDC20, CDKN3, TK1	1.37E-03	1.21E-02
2261	CDC20, CDKN3, TOP2A	8.33E-04	4.83E-03
2262	CDC20, CENPF, CENPM	4.95E-04	3.01E-03
2263	CDC20, CENPF, CEP55	1.31E-04	7.79E-04
2264	CDC20, CENPF, DLGAP5	2.05E-04	1.04E-03
2265	CDC20, CENPF, DTL	1.79E-04	9.75E-04
2266	CDC20, CENPF, FOXM1	2.98E-04	2.07E-03
2267	CDC20, CENPF, KIAA0101	3.98E-04	2.03E-03
2268	CDC20, CENPF, KIF11	3.53E-05	4.16E-04
2269	CDC20, CENPF, KIF20A	2.21E-04	1.70E-03
2270	CDC20, CENPF, MCM10	6.18E-04	4.32E-03
2271	CDC20, CENPF, NUSAP1	8.77E-04	6.61E-03
2272	CDC20, CENPF, ORC6L	1.53E-04	9.61E-04
2273	CDC20, CENPF, PBK	5.34E-05	6.32E-04

2274	CDC20, CENPF, PLK1	4.64E-04	3.26E-03
2275	CDC20, CENPF, PRC1	3.92E-04	2.61E-03
2276	CDC20, CENPF, PTTG1	6.95E-05	8.39E-04
2277	CDC20, CENPF, RAD51	1.55E-04	9.66E-04
2278	CDC20, CENPF, RAD54L	1.14E-04	6.01E-04
2279	CDC20, CENPF, RRM2	1.17E-04	1.18E-03
2280	CDC20, CENPF, TK1	4.78E-04	4.11E-03
2281	CDC20, CENPF, TOP2A	4.50E-04	2.11E-03
2282	CDC20, CENPM, CEP55	1.03E-03	5.06E-03
2283	CDC20, CENPM, DLGAP5	1.32E-03	4.75E-03
2284	CDC20, CENPM, DTL	1.25E-03	4.90E-03
2285	CDC20, CENPM, FOXM1	2.03E-03	9.60E-03
2286	CDC20, CENPM, KIAA0101	3.61E-03	1.23E-02
2287	CDC20, CENPM, KIF11	4.69E-04	3.47E-03
2288	CDC20, CENPM, KIF20A	1.86E-03	9.07E-03
2289	CDC20, CENPM, MCM10	5.23E-03	2.26E-02
2290	CDC20, CENPM, NUSAP1	5.30E-03	2.49E-02
2291	CDC20, CENPM, ORC6L	1.38E-03	5.51E-03
2292	CDC20, CENPM, PBK	6.52E-04	4.82E-03
2293	CDC20, CENPM, PLK1	2.28E-03	1.11E-02
2294	CDC20, CENPM, PRC1	3.22E-03	1.37E-02
2295	CDC20, CENPM, PTTG1	7.06E-04	5.26E-03
2296	CDC20, CENPM, RAD51	1.88E-03	7.36E-03
2297	CDC20, CENPM, RAD54L	8.35E-04	2.99E-03
2298	CDC20, CENPM, RRM2	1.16E-03	6.93E-03
2299	CDC20, CENPM, TK1	4.59E-03	2.28E-02
2300	CDC20, CENPM, TOP2A	3.78E-03	1.31E-02
2301	CDC20, CEP55, DLGAP5	2.67E-04	1.12E-03
2302	CDC20, CEP55, DTL	1.90E-04	8.78E-04
2303	CDC20, CEP55, FOXM1	3.80E-04	2.17E-03
2304	CDC20, CEP55, KIAA0101	7.03E-04	2.86E-03
2305	CDC20, CEP55, KIF11	6.03E-05	5.76E-04
2306	CDC20, CEP55, KIF20A	3.28E-04	1.91E-03
2307	CDC20, CEP55, MCM10	9.09E-04	5.07E-03
2308	CDC20, CEP55, NUSAP1	8.19E-04	5.05E-03
2309	CDC20, CEP55, ORC6L	1.86E-04	9.50E-04
2310	CDC20, CEP55, PBK	1.11E-04	9.84E-04
2311	CDC20, CEP55, PLK1	4.41E-04	2.66E-03
2312	CDC20, CEP55, PRC1	4.27E-04	2.50E-03
2313	CDC20, CEP55, PTTG1	1.02E-04	9.48E-04
2314	CDC20, CEP55, RAD51	2.72E-04	1.30E-03
2315	CDC20, CEP55, RAD54L	9.76E-05	4.38E-04
2316	CDC20, CEP55, RRM2	1.36E-04	1.12E-03
2317	CDC20, CEP55, TK1	6.95E-04	4.67E-03
2318	CDC20, CEP55, TOP2A	9.04E-04	3.46E-03
2319	CDC20, DLGAP5, DTL	4.53E-04	1.61E-03
2320	CDC20, DLGAP5, FOXM1	6.68E-04	3.04E-03
2321	CDC20, DLGAP5, KIAA0101	1.14E-03	3.80E-03
2322	CDC20, DLGAP5, KIF11	1.63E-04	1.06E-03
2323	CDC20, DLGAP5, KIF20A	6.40E-04	2.88E-03
2324	CDC20, DLGAP5, MCM10	1.57E-03	6.94E-03
2325	CDC20, DLGAP5, NUSAP1	1.59E-03	7.35E-03
2326	CDC20, DLGAP5, ORC6L	4.85E-04	1.81E-03
2327	CDC20, DLGAP5, PBK	2.04E-04	1.39E-03
2328	CDC20, DLGAP5, PLK1	8.44E-04	3.90E-03
2329	CDC20, DLGAP5, PRC1	1.07E-03	4.39E-03
2330	CDC20, DLGAP5, PTTG1	2.29E-04	1.57E-03
2331	CDC20, DLGAP5, RAD51	5.67E-04	2.13E-03
2332	CDC20, DLGAP5, RAD54L	3.49E-04	1.13E-03
2333	CDC20, DLGAP5, RRM2	3.06E-04	1.82E-03
2334	CDC20, DLGAP5, TK1	1.32E-03	6.72E-03
2335	CDC20, DLGAP5, TOP2A	8.07E-04	2.62E-03
2336	CDC20, DTL, FOXM1	5.96E-04	3.01E-03
2337	CDC20, DTL, KIAA0101	1.06E-03	3.62E-03
2338	CDC20, DTL, KIF11	7.10E-05	6.03E-04
2339	CDC20, DTL, KIF20A	5.12E-04	2.59E-03
2340	CDC20, DTL, MCM10	1.52E-03	7.41E-03
2341	CDC20, DTL, NUSAP1	1.83E-03	9.34E-03
2342	CDC20, DTL, ORC6L	3.53E-04	1.44E-03
2343	CDC20, DTL, PBK	1.20E-04	1.03E-03
2344	CDC20, DTL, PLK1	8.63E-04	4.48E-03

2345	CDC20, DTL, PRC1	9.77E-04	4.34E-03
2346	CDC20, DTL, PTTG1	1.36E-04	1.21E-03
2347	CDC20, DTL, RAD51	4.33E-04	1.76E-03
2348	CDC20, DTL, RAD54L	2.62E-04	8.73E-04
2349	CDC20, DTL, RRM2	2.31E-04	1.61E-03
2350	CDC20, DTL, TK1	1.32E-03	7.60E-03
2351	CDC20, DTL, TOP2A	7.55E-04	2.60E-03
2352	CDC20, FOXM1, KIAA0101	1.44E-03	6.35E-03
2353	CDC20, FOXM1, KIF11	1.97E-04	1.83E-03
2354	CDC20, FOXM1, KIF20A	8.29E-04	5.05E-03
2355	CDC20, FOXM1, MCM10	2.23E-03	1.22E-02
2356	CDC20, FOXM1, NUSAP1	2.49E-03	1.45E-02
2357	CDC20, FOXM1, ORC6L	6.35E-04	3.28E-03
2358	CDC20, FOXM1, PBK	3.04E-04	2.76E-03
2359	CDC20, FOXM1, PLK1	1.39E-03	8.17E-03
2360	CDC20, FOXM1, PRC1	1.53E-03	8.19E-03
2361	CDC20, FOXM1, PTTG1	3.13E-04	2.99E-03
2362	CDC20, FOXM1, RAD51	7.09E-04	3.67E-03
2363	CDC20, FOXM1, RAD54L	4.43E-04	1.99E-03
2364	CDC20, FOXM1, RRM2	5.24E-04	4.03E-03
2365	CDC20, FOXM1, TK1	1.89E-03	1.24E-02
2366	CDC20, FOXM1, TOP2A	1.11E-03	4.84E-03
2367	CDC20, KIAA0101, KIF11	3.33E-04	2.23E-03
2368	CDC20, KIAA0101, KIF20A	1.48E-03	6.47E-03
2369	CDC20, KIAA0101, MCM10	3.49E-03	1.45E-02
2370	CDC20, KIAA0101, NUSAP1	3.82E-03	1.67E-02
2371	CDC20, KIAA0101, ORC6L	1.20E-03	4.34E-03
2372	CDC20, KIAA0101, PBK	4.90E-04	3.24E-03
2373	CDC20, KIAA0101, PLK1	1.71E-03	7.74E-03
2374	CDC20, KIAA0101, PRC1	2.60E-03	1.00E-02
2375	CDC20, KIAA0101, PTTG1	5.08E-04	3.50E-03
2376	CDC20, KIAA0101, RAD51	1.31E-03	4.74E-03
2377	CDC20, KIAA0101, RAD54L	7.67E-04	2.47E-03
2378	CDC20, KIAA0101, RRM2	7.61E-04	4.35E-03
2379	CDC20, KIAA0101, TK1	3.21E-03	1.50E-02
2380	CDC20, KIAA0101, TOP2A	1.83E-03	5.77E-03
2381	CDC20, KIF11, KIF20A	1.35E-04	1.39E-03
2382	CDC20, KIF11, MCM10	5.18E-04	4.54E-03
2383	CDC20, KIF11, NUSAP1	5.25E-04	5.19E-03
2384	CDC20, KIF11, ORC6L	1.06E-04	8.84E-04
2385	CDC20, KIF11, PBK	5.45E-05	7.59E-04
2386	CDC20, KIF11, PLK1	2.60E-04	2.47E-03
2387	CDC20, KIF11, PRC1	2.79E-04	2.53E-03
2388	CDC20, KIF11, PTTG1	5.96E-05	9.88E-04
2389	CDC20, KIF11, RAD51	1.25E-04	1.04E-03
2390	CDC20, KIF11, RAD54L	7.27E-05	5.29E-04
2391	CDC20, KIF11, RRM2	7.77E-05	1.03E-03
2392	CDC20, KIF11, TK1	3.53E-04	3.94E-03
2393	CDC20, KIF11, TOP2A	2.56E-04	1.62E-03
2394	CDC20, KIF20A, MCM10	2.08E-03	1.16E-02
2395	CDC20, KIF20A, NUSAP1	2.30E-03	1.43E-02
2396	CDC20, KIF20A, ORC6L	5.90E-04	3.12E-03
2397	CDC20, KIF20A, PBK	2.34E-04	2.23E-03
2398	CDC20, KIF20A, PLK1	9.57E-04	6.16E-03
2399	CDC20, KIF20A, PRC1	1.46E-03	7.94E-03
2400	CDC20, KIF20A, PTTG1	2.92E-04	2.84E-03
2401	CDC20, KIF20A, RAD51	6.56E-04	3.38E-03
2402	CDC20, KIF20A, RAD54L	4.23E-04	1.93E-03
2403	CDC20, KIF20A, RRM2	4.24E-04	3.49E-03
2404	CDC20, KIF20A, TK1	1.80E-03	1.17E-02
2405	CDC20, KIF20A, TOP2A	9.33E-04	4.14E-03
2406	CDC20, MCM10, NUSAP1	4.67E-03	2.58E-02
2407	CDC20, MCM10, ORC6L	1.55E-03	7.53E-03
2408	CDC20, MCM10, PBK	7.98E-04	6.60E-03
2409	CDC20, MCM10, PLK1	2.41E-03	1.41E-02
2410	CDC20, MCM10, PRC1	3.73E-03	1.81E-02
2411	CDC20, MCM10, PTTG1	9.02E-04	7.65E-03
2412	CDC20, MCM10, RAD51	1.90E-03	9.17E-03
2413	CDC20, MCM10, RAD54L	1.17E-03	5.11E-03
2414	CDC20, MCM10, RRM2	1.27E-03	8.91E-03
2415	CDC20, MCM10, TK1	4.50E-03	2.55E-02

2416	CDC20, MCM10, TOP2A	2.12E-03	9.24E-03
2417	CDC20, NUSAP1, ORC6L	1.55E-03	8.43E-03
2418	CDC20, NUSAP1, PBK	6.93E-04	6.50E-03
2419	CDC20, NUSAP1, PLK1	3.55E-03	2.10E-02
2420	CDC20, NUSAP1, PRC1	3.71E-03	2.03E-02
2421	CDC20, NUSAP1, PTTG1	8.84E-04	8.72E-03
2422	CDC20, NUSAP1, RAD51	1.90E-03	1.01E-02
2423	CDC20, NUSAP1, RAD54L	1.16E-03	5.63E-03
2424	CDC20, NUSAP1, RRM2	1.36E-03	1.07E-02
2425	CDC20, NUSAP1, TK1	4.61E-03	2.94E-02
2426	CDC20, NUSAP1, TOP2A	3.11E-03	1.32E-02
2427	CDC20, ORC6L, PBK	2.10E-04	1.68E-03
2428	CDC20, ORC6L, PLK1	8.28E-04	4.43E-03
2429	CDC20, ORC6L, PRC1	1.14E-03	5.04E-03
2430	CDC20, ORC6L, PTTG1	1.67E-04	1.44E-03
2431	CDC20, ORC6L, RAD51	4.95E-04	2.07E-03
2432	CDC20, ORC6L, RAD54L	3.18E-04	1.14E-03
2433	CDC20, ORC6L, RRM2	3.21E-04	2.23E-03
2434	CDC20, ORC6L, TK1	1.37E-03	7.87E-03
2435	CDC20, ORC6L, TOP2A	6.53E-04	2.46E-03
2436	CDC20, PBK, PLK1	3.04E-04	2.90E-03
2437	CDC20, PBK, PRC1	4.80E-04	4.03E-03
2438	CDC20, PBK, PTTG1	8.83E-05	1.40E-03
2439	CDC20, PBK, RAD51	2.30E-04	1.86E-03
2440	CDC20, PBK, RAD54L	1.37E-04	9.67E-04
2441	CDC20, PBK, RRM2	1.24E-04	1.63E-03
2442	CDC20, PBK, TK1	4.92E-04	5.21E-03
2443	CDC20, PBK, TOP2A	3.26E-04	2.13E-03
2444	CDC20, PLK1, PRC1	1.74E-03	9.94E-03
2445	CDC20, PLK1, PTTG1	4.31E-04	4.21E-03
2446	CDC20, PLK1, RAD51	8.29E-04	4.47E-03
2447	CDC20, PLK1, RAD54L	5.61E-04	2.61E-03
2448	CDC20, PLK1, RRM2	6.45E-04	5.08E-03
2449	CDC20, PLK1, TK1	2.36E-03	1.63E-02
2450	CDC20, PLK1, TOP2A	1.66E-03	7.27E-03
2451	CDC20, PRC1, PTTG1	5.02E-04	4.42E-03
2452	CDC20, PRC1, RAD51	1.23E-03	5.58E-03
2453	CDC20, PRC1, RAD54L	8.31E-04	3.19E-03
2454	CDC20, PRC1, RRM2	9.07E-04	6.08E-03
2455	CDC20, PRC1, TK1	3.27E-03	1.86E-02
2456	CDC20, PRC1, TOP2A	1.25E-03	5.35E-03
2457	CDC20, PTTG1, RAD51	2.02E-04	1.71E-03
2458	CDC20, PTTG1, RAD54L	1.23E-04	8.79E-04
2459	CDC20, PTTG1, RRM2	1.40E-04	1.89E-03
2460	CDC20, PTTG1, TK1	7.33E-04	7.74E-03
2461	CDC20, PTTG1, TOP2A	3.93E-04	2.59E-03
2462	CDC20, RAD51, RAD54L	3.45E-04	1.23E-03
2463	CDC20, RAD51, RRM2	3.36E-04	2.33E-03
2464	CDC20, RAD51, TK1	1.59E-03	8.97E-03
2465	CDC20, RAD51, TOP2A	8.67E-04	3.22E-03
2466	CDC20, RAD54L, RRM2	2.22E-04	1.30E-03
2467	CDC20, RAD54L, TK1	9.87E-04	4.97E-03
2468	CDC20, RAD54L, TOP2A	3.71E-04	1.23E-03
2469	CDC20, RRM2, TK1	1.13E-03	9.35E-03
2470	CDC20, RRM2, TOP2A	4.99E-04	2.95E-03
2471	CDC20, TK1, TOP2A	1.89E-03	9.77E-03
2472	CDCA3, CDCA8, CDKN3	1.45E-03	1.29E-02
2473	CDCA3, CDCA8, CENPF	4.96E-04	4.26E-03
2474	CDCA3, CDCA8, CENPM	4.61E-03	2.41E-02
2475	CDCA3, CDCA8, CEP55	7.78E-04	4.69E-03
2476	CDCA3, CDCA8, DLGAP5	1.00E-03	5.10E-03
2477	CDCA3, CDCA8, DTL	7.83E-04	4.60E-03
2478	CDCA3, CDCA8, FOXM1	2.27E-03	1.33E-02
2479	CDCA3, CDCA8, KIAA0101	2.77E-03	1.25E-02
2480	CDCA3, CDCA8, KIF11	3.69E-04	3.82E-03
2481	CDCA3, CDCA8, KIF20A	1.15E-03	8.43E-03
2482	CDCA3, CDCA8, MCM10	4.13E-03	2.32E-02
2483	CDCA3, CDCA8, NUSAP1	3.94E-03	2.77E-02
2484	CDCA3, CDCA8, ORC6L	1.23E-03	7.62E-03
2485	CDCA3, CDCA8, PBK	7.66E-04	6.75E-03
2486	CDCA3, CDCA8, PLK1	2.04E-03	1.37E-02

2487	CDCA3, CDCA8, PRC1	2.56E-03	1.55E-02
2488	CDCA3, CDCA8, PTTG1	9.09E-04	9.32E-03
2489	CDCA3, CDCA8, RAD51	1.72E-03	9.78E-03
2490	CDCA3, CDCA8, RAD54L	7.98E-04	4.17E-03
2491	CDCA3, CDCA8, RRM2	1.04E-03	9.58E-03
2492	CDCA3, CDCA8, TK1	3.01E-03	2.23E-02
2493	CDCA3, CDCA8, TOP2A	1.67E-03	8.81E-03
2494	CDCA3, CDKN3, CENPF	4.91E-04	4.00E-03
2495	CDCA3, CDKN3, CENPM	3.70E-03	2.01E-02
2496	CDCA3, CDKN3, CEP55	8.21E-04	4.77E-03
2497	CDCA3, CDKN3, DLGAP5	9.22E-04	4.61E-03
2498	CDCA3, CDKN3, DTL	6.80E-04	4.03E-03
2499	CDCA3, CDKN3, FOXM1	2.01E-03	1.19E-02
2500	CDCA3, CDKN3, KIAA0101	2.29E-03	1.05E-02
2501	CDCA3, CDKN3, KIF11	3.82E-04	3.65E-03
2502	CDCA3, CDKN3, KIF20A	9.09E-04	6.81E-03
2503	CDCA3, CDKN3, MCM10	3.16E-03	1.87E-02
2504	CDCA3, CDKN3, NUSAP1	3.45E-03	2.43E-02
2505	CDCA3, CDKN3, ORC6L	1.06E-03	6.60E-03
2506	CDCA3, CDKN3, PBK	7.24E-04	6.16E-03
2507	CDCA3, CDKN3, PLK1	2.09E-03	1.35E-02
2508	CDCA3, CDKN3, PRC1	1.75E-03	1.17E-02
2509	CDCA3, CDKN3, PTTG1	7.62E-04	7.76E-03
2510	CDCA3, CDKN3, RAD51	1.40E-03	8.12E-03
2511	CDCA3, CDKN3, RAD54L	5.62E-04	3.12E-03
2512	CDCA3, CDKN3, RRM2	7.09E-04	7.24E-03
2513	CDCA3, CDKN3, TK1	2.22E-03	1.77E-02
2514	CDCA3, CDKN3, TOP2A	1.78E-03	9.00E-03
2515	CDCA3, CENPF, CENPM	1.33E-03	6.84E-03
2516	CDCA3, CENPF, CEP55	3.50E-04	1.67E-03
2517	CDCA3, CENPF, DLGAP5	3.41E-04	1.48E-03
2518	CDCA3, CENPF, DTL	2.93E-04	1.36E-03
2519	CDCA3, CENPF, FOXM1	8.14E-04	4.29E-03
2520	CDCA3, CENPF, KIAA0101	8.60E-04	3.43E-03
2521	CDCA3, CENPF, KIF11	1.26E-04	1.12E-03
2522	CDCA3, CENPF, KIF20A	3.12E-04	2.26E-03
2523	CDCA3, CENPF, MCM10	1.21E-03	6.87E-03
2524	CDCA3, CENPF, NUSAP1	1.63E-03	1.13E-02
2525	CDCA3, CENPF, ORC6L	3.80E-04	2.10E-03
2526	CDCA3, CENPF, PBK	2.37E-04	1.91E-03
2527	CDCA3, CENPF, PLK1	9.82E-04	5.70E-03
2528	CDCA3, CENPF, PRC1	6.82E-04	4.03E-03
2529	CDCA3, CENPF, PTTG1	2.36E-04	2.26E-03
2530	CDCA3, CENPF, RAD51	4.66E-04	2.39E-03
2531	CDCA3, CENPF, RAD54L	2.26E-04	1.06E-03
2532	CDCA3, CENPF, RRM2	2.59E-04	2.37E-03
2533	CDCA3, CENPF, TK1	7.30E-04	5.77E-03
2534	CDCA3, CENPF, TOP2A	8.76E-04	3.72E-03
2535	CDCA3, CENPM, CEP55	3.45E-03	1.25E-02
2536	CDCA3, CENPM, DLGAP5	2.28E-03	7.30E-03
2537	CDCA3, CENPM, DTL	2.42E-03	7.89E-03
2538	CDCA3, CENPM, FOXM1	5.60E-03	2.06E-02
2539	CDCA3, CENPM, KIAA0101	8.29E-03	2.25E-02
2540	CDCA3, CENPM, KIF11	1.23E-03	6.97E-03
2541	CDCA3, CENPM, KIF20A	3.01E-03	1.35E-02
2542	CDCA3, CENPM, MCM10	1.05E-02	3.81E-02
2543	CDCA3, CENPM, NUSAP1	1.09E-02	4.56E-02
2544	CDCA3, CENPM, ORC6L	3.35E-03	1.23E-02
2545	CDCA3, CENPM, PBK	1.97E-03	1.07E-02
2546	CDCA3, CENPM, PLK1	4.92E-03	2.02E-02
2547	CDCA3, CENPM, PRC1	6.01E-03	2.29E-02
2548	CDCA3, CENPM, PTTG1	2.46E-03	1.46E-02
2549	CDCA3, CENPM, RAD51	5.74E-03	1.88E-02
2550	CDCA3, CENPM, RAD54L	1.73E-03	5.58E-03
2551	CDCA3, CENPM, RRM2	2.47E-03	1.40E-02
2552	CDCA3, CENPM, TK1	7.51E-03	3.47E-02
2553	CDCA3, CENPM, TOP2A	8.16E-03	2.51E-02
2554	CDCA3, CEP55, DLGAP5	5.29E-04	1.70E-03
2555	CDCA3, CEP55, DTL	4.04E-04	1.30E-03
2556	CDCA3, CEP55, FOXM1	1.23E-03	4.89E-03
2557	CDCA3, CEP55, KIAA0101	1.88E-03	5.26E-03

2558	CDCA3, CEP55, KIF11	2.12E-04	1.24E-03
2559	CDCA3, CEP55, KIF20A	5.71E-04	2.64E-03
2560	CDCA3, CEP55, MCM10	2.18E-03	8.85E-03
2561	CDCA3, CEP55, NUSAP1	1.98E-03	9.73E-03
2562	CDCA3, CEP55, ORC6L	5.80E-04	2.23E-03
2563	CDCA3, CEP55, PBK	4.36E-04	2.45E-03
2564	CDCA3, CEP55, PLK1	1.13E-03	5.07E-03
2565	CDCA3, CEP55, PRC1	1.01E-03	4.32E-03
2566	CDCA3, CEP55, PTTG1	4.29E-04	2.74E-03
2567	CDCA3, CEP55, RAD51	1.09E-03	3.73E-03
2568	CDCA3, CEP55, RAD54L	2.57E-04	8.50E-04
2569	CDCA3, CEP55, RRM2	3.75E-04	2.48E-03
2570	CDCA3, CEP55, TK1	1.36E-03	7.35E-03
2571	CDCA3, CEP55, TOP2A	2.06E-03	6.60E-03
2572	CDCA3, DLGAP5, DTL	5.45E-04	1.55E-03
2573	CDCA3, DLGAP5, FOXM1	1.33E-03	4.65E-03
2574	CDCA3, DLGAP5, KIAA0101	1.84E-03	4.79E-03
2575	CDCA3, DLGAP5, KIF11	3.30E-04	1.63E-03
2576	CDCA3, DLGAP5, KIF20A	6.92E-04	2.77E-03
2577	CDCA3, DLGAP5, MCM10	2.37E-03	8.67E-03
2578	CDCA3, DLGAP5, NUSAP1	2.15E-03	9.16E-03
2579	CDCA3, DLGAP5, ORC6L	8.21E-04	2.69E-03
2580	CDCA3, DLGAP5, PBK	5.14E-04	2.53E-03
2581	CDCA3, DLGAP5, PLK1	1.28E-03	4.91E-03
2582	CDCA3, DLGAP5, PRC1	1.36E-03	4.92E-03
2583	CDCA3, DLGAP5, PTTG1	5.07E-04	2.79E-03
2584	CDCA3, DLGAP5, RAD51	1.16E-03	3.62E-03
2585	CDCA3, DLGAP5, RAD54L	4.91E-04	1.36E-03
2586	CDCA3, DLGAP5, RRM2	4.58E-04	2.55E-03
2587	CDCA3, DLGAP5, TK1	1.56E-03	7.31E-03
2588	CDCA3, DLGAP5, TOP2A	1.17E-03	3.45E-03
2589	CDCA3, DTL, FOXM1	1.24E-03	4.53E-03
2590	CDCA3, DTL, KIAA0101	1.69E-03	4.21E-03
2591	CDCA3, DTL, KIF11	1.61E-04	9.52E-04
2592	CDCA3, DTL, KIF20A	4.80E-04	2.14E-03
2593	CDCA3, DTL, MCM10	2.16E-03	8.42E-03
2594	CDCA3, DTL, NUSAP1	2.45E-03	1.15E-02
2595	CDCA3, DTL, ORC6L	6.05E-04	2.09E-03
2596	CDCA3, DTL, PBK	3.44E-04	1.97E-03
2597	CDCA3, DTL, PLK1	1.33E-03	5.49E-03
2598	CDCA3, DTL, PRC1	1.15E-03	4.37E-03
2599	CDCA3, DTL, PTTG1	3.27E-04	2.16E-03
2600	CDCA3, DTL, RAD51	9.45E-04	3.00E-03
2601	CDCA3, DTL, RAD54L	3.54E-04	9.66E-04
2602	CDCA3, DTL, RRM2	3.58E-04	2.23E-03
2603	CDCA3, DTL, TK1	1.41E-03	7.44E-03
2604	CDCA3, DTL, TOP2A	1.13E-03	3.37E-03
2605	CDCA3, FOXM1, KIAA0101	3.47E-03	1.09E-02
2606	CDCA3, FOXM1, KIF11	5.98E-04	3.79E-03
2607	CDCA3, FOXM1, KIF20A	1.40E-03	6.95E-03
2608	CDCA3, FOXM1, MCM10	4.73E-03	1.96E-02
2609	CDCA3, FOXM1, NUSAP1	5.06E-03	2.43E-02
2610	CDCA3, FOXM1, ORC6L	1.72E-03	7.01E-03
2611	CDCA3, FOXM1, PBK	1.11E-03	6.49E-03
2612	CDCA3, FOXM1, PLK1	3.23E-03	1.42E-02
2613	CDCA3, FOXM1, PRC1	2.95E-03	1.26E-02
2614	CDCA3, FOXM1, PTTG1	1.16E-03	7.68E-03
2615	CDCA3, FOXM1, RAD51	2.29E-03	8.76E-03
2616	CDCA3, FOXM1, RAD54L	1.01E-03	3.54E-03
2617	CDCA3, FOXM1, RRM2	1.24E-03	7.88E-03
2618	CDCA3, FOXM1, TK1	3.41E-03	1.84E-02
2619	CDCA3, FOXM1, TOP2A	2.56E-03	9.09E-03
2620	CDCA3, KIAA0101, KIF11	8.20E-04	3.78E-03
2621	CDCA3, KIAA0101, KIF20A	2.03E-03	7.36E-03
2622	CDCA3, KIAA0101, MCM10	6.19E-03	1.99E-02
2623	CDCA3, KIAA0101, NUSAP1	6.63E-03	2.43E-02
2624	CDCA3, KIAA0101, ORC6L	2.53E-03	7.46E-03
2625	CDCA3, KIAA0101, PBK	1.43E-03	6.33E-03
2626	CDCA3, KIAA0101, PLK1	3.25E-03	1.11E-02
2627	CDCA3, KIAA0101, PRC1	4.04E-03	1.28E-02
2628	CDCA3, KIAA0101, PTTG1	1.47E-03	7.24E-03

2629	CDCA3, KIAA0101, RAD51	3.33E-03	9.23E-03
2630	CDCA3, KIAA0101, RAD54L	1.36E-03	3.49E-03
2631	CDCA3, KIAA0101, RRM2	1.46E-03	7.14E-03
2632	CDCA3, KIAA0101, TK1	4.79E-03	1.88E-02
2633	CDCA3, KIAA0101, TOP2A	3.57E-03	9.26E-03
2634	CDCA3, KIF11, KIF20A	2.33E-04	1.93E-03
2635	CDCA3, KIF11, MCM10	9.91E-04	6.49E-03
2636	CDCA3, KIF11, NUSAP1	1.25E-03	9.78E-03
2637	CDCA3, KIF11, ORC6L	2.76E-04	1.77E-03
2638	CDCA3, KIF11, PBK	1.93E-04	1.81E-03
2639	CDCA3, KIF11, PLK1	6.70E-04	4.67E-03
2640	CDCA3, KIF11, PRC1	4.81E-04	3.44E-03
2641	CDCA3, KIF11, PTTG1	1.86E-04	2.12E-03
2642	CDCA3, KIF11, RAD51	4.08E-04	2.41E-03
2643	CDCA3, KIF11, RAD54L	1.40E-04	8.00E-04
2644	CDCA3, KIF11, RRM2	1.96E-04	2.16E-03
2645	CDCA3, KIF11, TK1	6.74E-04	6.12E-03
2646	CDCA3, KIF11, TOP2A	6.00E-04	3.07E-03
2647	CDCA3, KIF20A, MCM10	2.67E-03	1.32E-02
2648	CDCA3, KIF20A, NUSAP1	2.83E-03	1.74E-02
2649	CDCA3, KIF20A, ORC6L	8.25E-04	4.12E-03
2650	CDCA3, KIF20A, PBK	5.28E-04	3.78E-03
2651	CDCA3, KIF20A, PLK1	1.22E-03	6.95E-03
2652	CDCA3, KIF20A, PRC1	1.53E-03	8.06E-03
2653	CDCA3, KIF20A, PTTG1	5.40E-04	4.56E-03
2654	CDCA3, KIF20A, RAD51	1.12E-03	5.11E-03
2655	CDCA3, KIF20A, RAD54L	4.87E-04	2.09E-03
2656	CDCA3, KIF20A, RRM2	5.34E-04	4.50E-03
2657	CDCA3, KIF20A, TK1	1.79E-03	1.16E-02
2658	CDCA3, KIF20A, TOP2A	1.22E-03	5.08E-03
2659	CDCA3, MCM10, NUSAP1	7.41E-03	3.58E-02
2660	CDCA3, MCM10, ORC6L	2.90E-03	1.21E-02
2661	CDCA3, MCM10, PBK	1.88E-03	1.10E-02
2662	CDCA3, MCM10, PLK1	4.09E-03	1.92E-02
2663	CDCA3, MCM10, PRC1	5.29E-03	2.25E-02
2664	CDCA3, MCM10, PTTG1	2.19E-03	1.43E-02
2665	CDCA3, MCM10, RAD51	4.26E-03	1.65E-02
2666	CDCA3, MCM10, RAD54L	1.88E-03	6.92E-03
2667	CDCA3, MCM10, RRM2	2.16E-03	1.36E-02
2668	CDCA3, MCM10, TK1	6.18E-03	3.12E-02
2669	CDCA3, MCM10, TOP2A	3.83E-03	1.42E-02
2670	CDCA3, NUSAP1, ORC6L	3.13E-03	1.58E-02
2671	CDCA3, NUSAP1, PBK	1.89E-03	1.32E-02
2672	CDCA3, NUSAP1, PLK1	5.78E-03	3.01E-02
2673	CDCA3, NUSAP1, PRC1	5.29E-03	2.75E-02
2674	CDCA3, NUSAP1, PTTG1	2.25E-03	1.85E-02
2675	CDCA3, NUSAP1, RAD51	4.30E-03	1.97E-02
2676	CDCA3, NUSAP1, RAD54L	1.88E-03	8.69E-03
2677	CDCA3, NUSAP1, RRM2	2.33E-03	1.79E-02
2678	CDCA3, NUSAP1, TK1	6.03E-03	3.74E-02
2679	CDCA3, NUSAP1, TOP2A	4.76E-03	1.96E-02
2680	CDCA3, ORC6L, PBK	6.32E-04	3.75E-03
2681	CDCA3, ORC6L, PLK1	1.74E-03	7.96E-03
2682	CDCA3, ORC6L, PRC1	1.84E-03	7.64E-03
2683	CDCA3, ORC6L, PTTG1	5.56E-04	3.91E-03
2684	CDCA3, ORC6L, RAD51	1.39E-03	5.06E-03
2685	CDCA3, ORC6L, RAD54L	5.92E-04	1.97E-03
2686	CDCA3, ORC6L, RRM2	6.39E-04	4.33E-03
2687	CDCA3, ORC6L, TK1	2.07E-03	1.14E-02
2688	CDCA3, ORC6L, TOP2A	1.34E-03	4.64E-03
2689	CDCA3, PBK, PLK1	9.91E-04	6.37E-03
2690	CDCA3, PBK, PRC1	1.01E-03	6.39E-03
2691	CDCA3, PBK, PTTG1	3.45E-04	3.51E-03
2692	CDCA3, PBK, RAD51	8.12E-04	4.56E-03
2693	CDCA3, PBK, RAD54L	3.27E-04	1.73E-03
2694	CDCA3, PBK, RRM2	3.88E-04	3.86E-03
2695	CDCA3, PBK, TK1	1.18E-03	9.35E-03
2696	CDCA3, PBK, TOP2A	9.58E-04	4.72E-03
2697	CDCA3, PLK1, PRC1	2.60E-03	1.28E-02
2698	CDCA3, PLK1, PTTG1	1.26E-03	9.26E-03
2699	CDCA3, PLK1, RAD51	2.15E-03	9.17E-03

2700	CDCA3, PLK1, RAD54L	9.80E-04	3.89E-03
2701	CDCA3, PLK1, RRM2	1.20E-03	8.42E-03
2702	CDCA3, PLK1, TK1	3.24E-03	2.01E-02
2703	CDCA3, PLK1, TOP2A	2.94E-03	1.13E-02
2704	CDCA3, PRC1, PTTG1	1.10E-03	8.16E-03
2705	CDCA3, PRC1, RAD51	2.43E-03	9.63E-03
2706	CDCA3, PRC1, RAD54L	1.12E-03	3.96E-03
2707	CDCA3, PRC1, RRM2	1.34E-03	8.88E-03
2708	CDCA3, PRC1, TK1	3.75E-03	2.08E-02
2709	CDCA3, PRC1, TOP2A	2.07E-03	7.89E-03
2710	CDCA3, PTTG1, RAD51	8.56E-04	5.37E-03
2711	CDCA3, PTTG1, RAD54L	3.21E-04	1.89E-03
2712	CDCA3, PTTG1, RRM2	4.16E-04	4.77E-03
2713	CDCA3, PTTG1, TK1	1.49E-03	1.35E-02
2714	CDCA3, PTTG1, TOP2A	1.08E-03	5.96E-03
2715	CDCA3, RAD51, RAD54L	7.92E-04	2.45E-03
2716	CDCA3, RAD51, RRM2	8.49E-04	5.28E-03
2717	CDCA3, RAD51, TK1	2.99E-03	1.48E-02
2718	CDCA3, RAD51, TOP2A	2.23E-03	7.11E-03
2719	CDCA3, RAD54L, RRM2	3.80E-04	2.17E-03
2720	CDCA3, RAD54L, TK1	1.26E-03	6.00E-03
2721	CDCA3, RAD54L, TOP2A	6.63E-04	1.98E-03
2722	CDCA3, RRM2, TK1	1.53E-03	1.27E-02
2723	CDCA3, RRM2, TOP2A	8.84E-04	4.95E-03
2724	CDCA3, TK1, TOP2A	2.60E-03	1.29E-02
2725	CDCA8, CDKN3, CENPF	1.19E-04	1.94E-03
2726	CDCA8, CDKN3, CENPM	1.20E-03	1.16E-02
2727	CDCA8, CDKN3, CEP55	1.65E-04	2.15E-03
2728	CDCA8, CDKN3, DLGAP5	3.10E-04	2.96E-03
2729	CDCA8, CDKN3, DTL	2.36E-04	2.98E-03
2730	CDCA8, CDKN3, FOXM1	5.35E-04	6.51E-03
2731	CDCA8, CDKN3, KIAA0101	6.71E-04	6.48E-03
2732	CDCA8, CDKN3, KIF11	6.83E-05	1.61E-03
2733	CDCA8, CDKN3, KIF20A	4.14E-04	5.57E-03
2734	CDCA8, CDKN3, MCM10	1.36E-03	1.42E-02
2735	CDCA8, CDKN3, NUSAP1	1.07E-03	1.45E-02
2736	CDCA8, CDKN3, ORC6L	2.82E-04	3.32E-03
2737	CDCA8, CDKN3, PBK	1.24E-04	2.66E-03
2738	CDCA8, CDKN3, PLK1	6.61E-04	8.50E-03
2739	CDCA8, CDKN3, PRC1	8.79E-04	9.82E-03
2740	CDCA8, CDKN3, PTTG1	1.59E-04	3.50E-03
2741	CDCA8, CDKN3, RAD51	2.98E-04	3.61E-03
2742	CDCA8, CDKN3, RAD54L	1.77E-04	1.85E-03
2743	CDCA8, CDKN3, RRM2	2.88E-04	4.80E-03
2744	CDCA8, CDKN3, TK1	1.13E-03	1.47E-02
2745	CDCA8, CDKN3, TOP2A	4.85E-04	4.57E-03
2746	CDCA8, CENPF, CENPM	3.42E-04	3.32E-03
2747	CDCA8, CENPF, CEP55	6.94E-05	6.88E-04
2748	CDCA8, CENPF, DLGAP5	1.05E-04	8.58E-04
2749	CDCA8, CENPF, DTL	9.58E-05	8.94E-04
2750	CDCA8, CENPF, FOXM1	1.84E-04	2.04E-03
2751	CDCA8, CENPF, KIAA0101	2.12E-04	1.81E-03
2752	CDCA8, CENPF, KIF11	1.37E-05	3.05E-04
2753	CDCA8, CENPF, KIF20A	1.26E-04	1.66E-03
2754	CDCA8, CENPF, MCM10	4.54E-04	4.77E-03
2755	CDCA8, CENPF, NUSAP1	5.03E-04	6.45E-03
2756	CDCA8, CENPF, ORC6L	7.84E-05	8.34E-04
2757	CDCA8, CENPF, PBK	2.43E-05	5.26E-04
2758	CDCA8, CENPF, PLK1	2.78E-04	3.18E-03
2759	CDCA8, CENPF, PRC1	2.95E-04	3.04E-03
2760	CDCA8, CENPF, PTTG1	3.97E-05	8.29E-04
2761	CDCA8, CENPF, RAD51	7.89E-05	8.50E-04
2762	CDCA8, CENPF, RAD54L	6.21E-05	5.38E-04
2763	CDCA8, CENPF, RRM2	8.71E-05	1.37E-03
2764	CDCA8, CENPF, TK1	3.33E-04	4.48E-03
2765	CDCA8, CENPF, TOP2A	2.40E-04	1.78E-03
2766	CDCA8, CENPM, CEP55	6.66E-04	5.25E-03
2767	CDCA8, CENPM, DLGAP5	9.38E-04	5.03E-03
2768	CDCA8, CENPM, DTL	9.66E-04	5.95E-03
2769	CDCA8, CENPM, FOXM1	1.71E-03	1.17E-02
2770	CDCA8, CENPM, KIAA0101	2.88E-03	1.44E-02

2771	CDCA8, CENPM, KIF11	2.95E-04	3.58E-03
2772	CDCA8, CENPM, KIF20A	1.51E-03	1.10E-02
2773	CDCA8, CENPM, MCM10	5.17E-03	2.96E-02
2774	CDCA8, CENPM, NUSAP1	4.04E-03	2.86E-02
2775	CDCA8, CENPM, ORC6L	1.07E-03	6.32E-03
2776	CDCA8, CENPM, PBK	4.60E-04	5.39E-03
2777	CDCA8, CENPM, PLK1	1.81E-03	1.32E-02
2778	CDCA8, CENPM, PRC1	3.30E-03	1.91E-02
2779	CDCA8, CENPM, PTTG1	6.06E-04	6.87E-03
2780	CDCA8, CENPM, RAD51	1.53E-03	8.89E-03
2781	CDCA8, CENPM, RAD54L	6.57E-04	3.47E-03
2782	CDCA8, CENPM, RRM2	1.20E-03	9.76E-03
2783	CDCA8, CENPM, TK1	4.51E-03	3.03E-02
2784	CDCA8, CENPM, TOP2A	2.59E-03	1.34E-02
2785	CDCA8, CEP55, DLGAP5	1.35E-04	9.26E-04
2786	CDCA8, CEP55, DTL	9.53E-05	7.81E-04
2787	CDCA8, CEP55, FOXM1	2.33E-04	2.14E-03
2788	CDCA8, CEP55, KIAA0101	4.02E-04	2.67E-03
2789	CDCA8, CEP55, KIF11	2.65E-05	4.71E-04
2790	CDCA8, CEP55, KIF20A	1.88E-04	1.84E-03
2791	CDCA8, CEP55, MCM10	6.73E-04	5.59E-03
2792	CDCA8, CEP55, NUSAP1	4.20E-04	4.56E-03
2793	CDCA8, CEP55, ORC6L	9.81E-05	8.57E-04
2794	CDCA8, CEP55, PBK	5.38E-05	8.53E-04
2795	CDCA8, CEP55, PLK1	2.49E-04	2.51E-03
2796	CDCA8, CEP55, PRC1	3.11E-04	2.86E-03
2797	CDCA8, CEP55, PTTG1	5.79E-05	9.40E-04
2798	CDCA8, CEP55, RAD51	1.42E-04	1.17E-03
2799	CDCA8, CEP55, RAD54L	4.87E-05	3.70E-04
2800	CDCA8, CEP55, RRM2	1.00E-04	1.30E-03
2801	CDCA8, CEP55, TK1	4.91E-04	5.12E-03
2802	CDCA8, CEP55, TOP2A	4.78E-04	2.92E-03
2803	CDCA8, DLGAP5, DTL	2.42E-04	1.41E-03
2804	CDCA8, DLGAP5, FOXM1	4.13E-04	2.88E-03
2805	CDCA8, DLGAP5, KIAA0101	6.89E-04	3.51E-03
2806	CDCA8, DLGAP5, KIF11	7.51E-05	8.30E-04
2807	CDCA8, DLGAP5, KIF20A	3.91E-04	2.76E-03
2808	CDCA8, DLGAP5, MCM10	1.20E-03	7.53E-03
2809	CDCA8, DLGAP5, NUSAP1	8.73E-04	6.62E-03
2810	CDCA8, DLGAP5, ORC6L	2.71E-04	1.58E-03
2811	CDCA8, DLGAP5, PBK	1.04E-04	1.18E-03
2812	CDCA8, DLGAP5, PLK1	4.84E-04	3.54E-03
2813	CDCA8, DLGAP5, PRC1	8.10E-04	4.87E-03
2814	CDCA8, DLGAP5, PTTG1	1.31E-04	1.49E-03
2815	CDCA8, DLGAP5, RAD51	3.31E-04	1.94E-03
2816	CDCA8, DLGAP5, RAD54L	2.02E-04	9.95E-04
2817	CDCA8, DLGAP5, RRM2	2.15E-04	1.93E-03
2818	CDCA8, DLGAP5, TK1	9.51E-04	7.14E-03
2819	CDCA8, DLGAP5, TOP2A	4.16E-04	2.08E-03
2820	CDCA8, DTL, FOXM1	3.76E-04	3.12E-03
2821	CDCA8, DTL, KIAA0101	6.20E-04	3.49E-03
2822	CDCA8, DTL, KIF11	2.70E-05	4.52E-04
2823	CDCA8, DTL, KIF20A	3.08E-04	2.67E-03
2824	CDCA8, DTL, MCM10	1.23E-03	8.85E-03
2825	CDCA8, DTL, NUSAP1	1.01E-03	9.20E-03
2826	CDCA8, DTL, ORC6L	1.92E-04	1.33E-03
2827	CDCA8, DTL, PBK	5.56E-05	8.97E-04
2828	CDCA8, DTL, PLK1	5.06E-04	4.47E-03
2829	CDCA8, DTL, PRC1	8.22E-04	5.57E-03
2830	CDCA8, DTL, PTTG1	8.14E-05	1.30E-03
2831	CDCA8, DTL, RAD51	2.46E-04	1.72E-03
2832	CDCA8, DTL, RAD54L	1.52E-04	8.26E-04
2833	CDCA8, DTL, RRM2	1.87E-04	2.03E-03
2834	CDCA8, DTL, TK1	1.02E-03	9.08E-03
2835	CDCA8, DTL, TOP2A	3.69E-04	2.12E-03
2836	CDCA8, FOXM1, KIAA0101	9.64E-04	6.54E-03
2837	CDCA8, FOXM1, KIF11	1.01E-04	1.62E-03
2838	CDCA8, FOXM1, KIF20A	5.77E-04	5.47E-03
2839	CDCA8, FOXM1, MCM10	1.91E-03	1.46E-02
2840	CDCA8, FOXM1, NUSAP1	1.62E-03	1.50E-02
2841	CDCA8, FOXM1, ORC6L	4.12E-04	3.31E-03

2842	CDCA8, FOXM1, PBK	1.85E-04	2.75E-03
2843	CDCA8, FOXM1, PLK1	9.77E-04	8.78E-03
2844	CDCA8, FOXM1, PRC1	1.34E-03	1.02E-02
2845	CDCA8, FOXM1, PTTG1	2.17E-04	3.34E-03
2846	CDCA8, FOXM1, RAD51	4.69E-04	3.82E-03
2847	CDCA8, FOXM1, RAD54L	2.93E-04	2.02E-03
2848	CDCA8, FOXM1, RRM2	4.56E-04	5.04E-03
2849	CDCA8, FOXM1, TK1	1.57E-03	1.49E-02
2850	CDCA8, FOXM1, TOP2A	6.72E-04	4.52E-03
2851	CDCA8, KIAA0101, KIF11	1.59E-04	1.88E-03
2852	CDCA8, KIAA0101, KIF20A	9.99E-04	6.80E-03
2853	CDCA8, KIAA0101, MCM10	2.88E-03	1.68E-02
2854	CDCA8, KIAA0101, NUSAP1	2.36E-03	1.66E-02
2855	CDCA8, KIAA0101, ORC6L	7.56E-04	4.25E-03
2856	CDCA8, KIAA0101, PBK	2.76E-04	3.06E-03
2857	CDCA8, KIAA0101, PLK1	1.04E-03	7.60E-03
2858	CDCA8, KIAA0101, PRC1	2.17E-03	1.21E-02
2859	CDCA8, KIAA0101, PTTG1	3.16E-04	3.65E-03
2860	CDCA8, KIAA0101, RAD51	8.39E-04	4.77E-03
2861	CDCA8, KIAA0101, RAD54L	4.83E-04	2.39E-03
2862	CDCA8, KIAA0101, RRM2	5.94E-04	5.07E-03
2863	CDCA8, KIAA0101, TK1	2.54E-03	1.72E-02
2864	CDCA8, KIAA0101, TOP2A	1.02E-03	5.04E-03
2865	CDCA8, KIF11, KIF20A	6.50E-05	1.21E-03
2866	CDCA8, KIF11, MCM10	3.44E-04	4.71E-03
2867	CDCA8, KIF11, NUSAP1	2.44E-04	4.50E-03
2868	CDCA8, KIF11, ORC6L	4.79E-05	7.25E-04
2869	CDCA8, KIF11, PBK	2.24E-05	5.89E-04
2870	CDCA8, KIF11, PLK1	1.23E-04	2.10E-03
2871	CDCA8, KIF11, PRC1	1.86E-04	2.73E-03
2872	CDCA8, KIF11, PTTG1	2.95E-05	8.97E-04
2873	CDCA8, KIF11, RAD51	5.45E-05	8.36E-04
2874	CDCA8, KIF11, RAD54L	3.18E-05	4.14E-04
2875	CDCA8, KIF11, RRM2	5.14E-05	1.11E-03
2876	CDCA8, KIF11, TK1	2.18E-04	4.00E-03
2877	CDCA8, KIF11, TOP2A	1.06E-04	1.20E-03
2878	CDCA8, KIF20A, MCM10	1.76E-03	1.39E-02
2879	CDCA8, KIF20A, NUSAP1	1.48E-03	1.50E-02
2880	CDCA8, KIF20A, ORC6L	3.77E-04	3.20E-03
2881	CDCA8, KIF20A, PBK	1.35E-04	2.19E-03
2882	CDCA8, KIF20A, PLK1	6.04E-04	6.39E-03
2883	CDCA8, KIF20A, PRC1	1.27E-03	1.00E-02
2884	CDCA8, KIF20A, PTTG1	1.98E-04	3.21E-03
2885	CDCA8, KIF20A, RAD51	4.24E-04	3.54E-03
2886	CDCA8, KIF20A, RAD54L	2.76E-04	1.98E-03
2887	CDCA8, KIF20A, RRM2	3.57E-04	4.37E-03
2888	CDCA8, KIF20A, TK1	1.46E-03	1.40E-02
2889	CDCA8, KIF20A, TOP2A	5.11E-04	3.71E-03
2890	CDCA8, MCM10, NUSAP1	3.56E-03	2.87E-02
2891	CDCA8, MCM10, ORC6L	1.23E-03	8.54E-03
2892	CDCA8, MCM10, PBK	6.00E-04	7.37E-03
2893	CDCA8, MCM10, PLK1	1.94E-03	1.65E-02
2894	CDCA8, MCM10, PRC1	3.75E-03	2.39E-02
2895	CDCA8, MCM10, PTTG1	7.87E-04	9.62E-03
2896	CDCA8, MCM10, RAD51	1.58E-03	1.09E-02
2897	CDCA8, MCM10, RAD54L	9.62E-04	5.91E-03
2898	CDCA8, MCM10, RRM2	1.26E-03	1.17E-02
2899	CDCA8, MCM10, TK1	4.34E-03	3.24E-02
2900	CDCA8, MCM10, TOP2A	1.50E-03	9.64E-03
2901	CDCA8, NUSAP1, ORC6L	8.69E-04	7.95E-03
2902	CDCA8, NUSAP1, PBK	3.65E-04	6.05E-03
2903	CDCA8, NUSAP1, PLK1	2.23E-03	2.16E-02
2904	CDCA8, NUSAP1, PRC1	2.89E-03	2.35E-02
2905	CDCA8, NUSAP1, PTTG1	5.26E-04	9.11E-03
2906	CDCA8, NUSAP1, RAD51	1.12E-03	9.94E-03
2907	CDCA8, NUSAP1, RAD54L	6.86E-04	5.47E-03
2908	CDCA8, NUSAP1, RRM2	1.04E-03	1.23E-02
2909	CDCA8, NUSAP1, TK1	3.40E-03	3.29E-02
2910	CDCA8, NUSAP1, TOP2A	1.71E-03	1.19E-02
2911	CDCA8, ORC6L, PBK	1.14E-04	1.55E-03
2912	CDCA8, ORC6L, PLK1	5.00E-04	4.32E-03

2913	CDCA8, ORC6L, PRC1	9.50E-04	6.09E-03
2914	CDCA8, ORC6L, PTTG1	1.01E-04	1.47E-03
2915	CDCA8, ORC6L, RAD51	2.97E-04	1.98E-03
2916	CDCA8, ORC6L, RAD54L	1.95E-04	1.07E-03
2917	CDCA8, ORC6L, RRM2	2.64E-04	2.70E-03
2918	CDCA8, ORC6L, TK1	1.06E-03	8.97E-03
2919	CDCA8, ORC6L, TOP2A	3.39E-04	2.07E-03
2920	CDCA8, PBK, PLK1	1.62E-04	2.69E-03
2921	CDCA8, PBK, PRC1	3.59E-04	4.64E-03
2922	CDCA8, PBK, PTTG1	4.81E-05	1.37E-03
2923	CDCA8, PBK, RAD51	1.25E-04	1.74E-03
2924	CDCA8, PBK, RAD54L	7.40E-05	8.78E-04
2925	CDCA8, PBK, RRM2	8.99E-05	1.85E-03
2926	CDCA8, PBK, TK1	3.39E-04	5.67E-03
2927	CDCA8, PBK, TOP2A	1.54E-04	1.73E-03
2928	CDCA8, PLK1, PRC1	1.44E-03	1.22E-02
2929	CDCA8, PLK1, PTTG1	2.78E-04	4.56E-03
2930	CDCA8, PLK1, RAD51	4.89E-04	4.38E-03
2931	CDCA8, PLK1, RAD54L	3.44E-04	2.54E-03
2932	CDCA8, PLK1, RRM2	5.31E-04	6.22E-03
2933	CDCA8, PLK1, TK1	1.85E-03	1.92E-02
2934	CDCA8, PLK1, TOP2A	9.98E-04	6.78E-03
2935	CDCA8, PRC1, PTTG1	4.66E-04	6.05E-03
2936	CDCA8, PRC1, RAD51	1.04E-03	6.96E-03
2937	CDCA8, PRC1, RAD54L	7.11E-04	3.91E-03
2938	CDCA8, PRC1, RRM2	9.79E-04	8.80E-03
2939	CDCA8, PRC1, TK1	3.30E-03	2.51E-02
2940	CDCA8, PRC1, TOP2A	8.51E-04	5.59E-03
2941	CDCA8, PTTG1, RAD51	1.26E-04	1.82E-03
2942	CDCA8, PTTG1, RAD54L	7.80E-05	9.14E-04
2943	CDCA8, PTTG1, RRM2	1.32E-04	2.60E-03
2944	CDCA8, PTTG1, TK1	6.28E-04	9.86E-03
2945	CDCA8, PTTG1, TOP2A	2.04E-04	2.31E-03
2946	CDCA8, RAD51, RAD54L	2.13E-04	1.20E-03
2947	CDCA8, RAD51, RRM2	2.73E-04	2.86E-03
2948	CDCA8, RAD51, TK1	1.27E-03	1.06E-02
2949	CDCA8, RAD51, TOP2A	4.43E-04	2.70E-03
2950	CDCA8, RAD54L, RRM2	1.83E-04	1.56E-03
2951	CDCA8, RAD54L, TK1	7.81E-04	5.71E-03
2952	CDCA8, RAD54L, TOP2A	1.85E-04	9.69E-04
2953	CDCA8, RRM2, TK1	1.14E-03	1.27E-02
2954	CDCA8, RRM2, TOP2A	3.46E-04	3.16E-03
2955	CDCA8, TK1, TOP2A	1.27E-03	1.01E-02
2956	CDKN3, CENPF, CENPM	2.02E-04	2.05E-03
2957	CDKN3, CENPF, CEP55	5.66E-05	5.39E-04
2958	CDKN3, CENPF, DLGAP5	7.43E-05	5.98E-04
2959	CDKN3, CENPF, DTL	5.83E-05	5.63E-04
2960	CDKN3, CENPF, FOXM1	1.27E-04	1.41E-03
2961	CDKN3, CENPF, KIAA0101	1.29E-04	1.13E-03
2962	CDKN3, CENPF, KIF11	1.16E-05	2.32E-04
2963	CDKN3, CENPF, KIF20A	7.19E-05	9.80E-04
2964	CDKN3, CENPF, MCM10	2.46E-04	2.81E-03
2965	CDKN3, CENPF, NUSAP1	3.42E-04	4.47E-03
2966	CDKN3, CENPF, ORC6L	5.01E-05	5.38E-04
2967	CDKN3, CENPF, PBK	1.81E-05	3.75E-04
2968	CDKN3, CENPF, PLK1	2.27E-04	2.49E-03
2969	CDKN3, CENPF, PRC1	1.39E-04	1.61E-03
2970	CDKN3, CENPF, PTTG1	2.46E-05	5.05E-04
2971	CDKN3, CENPF, RAD51	4.69E-05	5.12E-04
2972	CDKN3, CENPF, RAD54L	2.99E-05	2.78E-04
2973	CDKN3, CENPF, RRM2	4.27E-05	7.47E-04
2974	CDKN3, CENPF, TK1	1.72E-04	2.56E-03
2975	CDKN3, CENPF, TOP2A	2.06E-04	1.47E-03
2976	CDKN3, CENPM, CEP55	4.36E-04	3.57E-03
2977	CDKN3, CENPM, DLGAP5	5.13E-04	3.01E-03
2978	CDKN3, CENPM, DTL	4.31E-04	3.11E-03
2979	CDKN3, CENPM, FOXM1	9.32E-04	7.18E-03
2980	CDKN3, CENPM, KIAA0101	1.43E-03	8.21E-03
2981	CDKN3, CENPM, KIF11	1.59E-04	2.13E-03
2982	CDKN3, CENPM, KIF20A	6.88E-04	5.97E-03
2983	CDKN3, CENPM, MCM10	2.52E-03	1.74E-02

2984	CDKN3, CENPM, NUSAP1	2.22E-03	1.82E-02
2985	CDKN3, CENPM, ORC6L	5.05E-04	3.50E-03
2986	CDKN3, CENPM, PBK	2.51E-04	3.30E-03
2987	CDKN3, CENPM, PLK1	1.11E-03	8.75E-03
2988	CDKN3, CENPM, PRC1	1.29E-03	9.64E-03
2989	CDKN3, CENPM, PTTG1	2.56E-04	3.48E-03
2990	CDKN3, CENPM, RAD51	6.80E-04	4.69E-03
2991	CDKN3, CENPM, RAD54L	2.41E-04	1.56E-03
2992	CDKN3, CENPM, RRM2	4.63E-04	4.90E-03
2993	CDKN3, CENPM, TK1	1.99E-03	1.69E-02
2994	CDKN3, CENPM, TOP2A	1.74E-03	9.47E-03
2995	CDKN3, CEP55, DLGAP5	1.08E-04	7.16E-04
2996	CDKN3, CEP55, DTL	6.56E-05	5.53E-04
2997	CDKN3, CEP55, FOXM1	1.80E-04	1.63E-03
2998	CDKN3, CEP55, KIAA0101	2.73E-04	1.83E-03
2999	CDKN3, CEP55, KIF11	2.38E-05	3.78E-04
3000	CDKN3, CEP55, KIF20A	1.22E-04	1.21E-03
3001	CDKN3, CEP55, MCM10	4.20E-04	3.68E-03
3002	CDKN3, CEP55, NUSAP1	3.23E-04	3.44E-03
3003	CDKN3, CEP55, ORC6L	6.95E-05	5.95E-04
3004	CDKN3, CEP55, PBK	4.46E-05	6.72E-04
3005	CDKN3, CEP55, PLK1	2.31E-04	2.18E-03
3006	CDKN3, CEP55, PRC1	1.66E-04	1.68E-03
3007	CDKN3, CEP55, PTTG1	4.09E-05	6.40E-04
3008	CDKN3, CEP55, RAD51	9.69E-05	7.97E-04
3009	CDKN3, CEP55, RAD54L	2.67E-05	2.11E-04
3010	CDKN3, CEP55, RRM2	5.44E-05	7.69E-04
3011	CDKN3, CEP55, TK1	2.93E-04	3.27E-03
3012	CDKN3, CEP55, TOP2A	4.17E-04	2.48E-03
3013	CDKN3, DLGAP5, DTL	1.42E-04	8.71E-04
3014	CDKN3, DLGAP5, FOXM1	2.66E-04	1.93E-03
3015	CDKN3, DLGAP5, KIAA0101	4.09E-04	2.20E-03
3016	CDKN3, DLGAP5, KIF11	5.40E-05	5.85E-04
3017	CDKN3, DLGAP5, KIF20A	2.19E-04	1.64E-03
3018	CDKN3, DLGAP5, MCM10	6.53E-04	4.55E-03
3019	CDKN3, DLGAP5, NUSAP1	5.59E-04	4.43E-03
3020	CDKN3, DLGAP5, ORC6L	1.63E-04	9.93E-04
3021	CDKN3, DLGAP5, PBK	7.10E-05	8.19E-04
3022	CDKN3, DLGAP5, PLK1	3.61E-04	2.65E-03
3023	CDKN3, DLGAP5, PRC1	3.82E-04	2.64E-03
3024	CDKN3, DLGAP5, PTTG1	7.52E-05	8.85E-04
3025	CDKN3, DLGAP5, RAD51	1.86E-04	1.16E-03
3026	CDKN3, DLGAP5, RAD54L	9.74E-05	5.23E-04
3027	CDKN3, DLGAP5, RRM2	9.86E-05	1.02E-03
3028	CDKN3, DLGAP5, TK1	4.92E-04	4.17E-03
3029	CDKN3, DLGAP5, TOP2A	3.37E-04	1.66E-03
3030	CDKN3, DTL, FOXM1	2.13E-04	1.91E-03
3031	CDKN3, DTL, KIAA0101	3.03E-04	1.91E-03
3032	CDKN3, DTL, KIF11	1.78E-05	2.94E-04
3033	CDKN3, DTL, KIF20A	1.37E-04	1.35E-03
3034	CDKN3, DTL, MCM10	5.44E-04	4.66E-03
3035	CDKN3, DTL, NUSAP1	5.60E-04	5.60E-03
3036	CDKN3, DTL, ORC6L	9.43E-05	7.30E-04
3037	CDKN3, DTL, PBK	3.37E-05	5.69E-04
3038	CDKN3, DTL, PLK1	3.52E-04	3.19E-03
3039	CDKN3, DTL, PRC1	2.89E-04	2.47E-03
3040	CDKN3, DTL, PTTG1	3.65E-05	6.49E-04
3041	CDKN3, DTL, RAD51	1.10E-04	8.72E-04
3042	CDKN3, DTL, RAD54L	5.32E-05	3.43E-04
3043	CDKN3, DTL, RRM2	6.47E-05	8.98E-04
3044	CDKN3, DTL, TK1	4.08E-04	4.53E-03
3045	CDKN3, DTL, TOP2A	2.81E-04	1.64E-03
3046	CDKN3, FOXM1, KIAA0101	5.52E-04	4.06E-03
3047	CDKN3, FOXM1, KIF11	7.05E-05	1.12E-03
3048	CDKN3, FOXM1, KIF20A	3.11E-04	3.25E-03
3049	CDKN3, FOXM1, MCM10	1.03E-03	8.96E-03
3050	CDKN3, FOXM1, NUSAP1	1.02E-03	1.01E-02
3051	CDKN3, FOXM1, ORC6L	2.39E-04	2.08E-03
3052	CDKN3, FOXM1, PBK	1.21E-04	1.87E-03
3053	CDKN3, FOXM1, PLK1	6.99E-04	6.41E-03
3054	CDKN3, FOXM1, PRC1	6.26E-04	5.67E-03

3055	CDKN3, FOXM1, PTTG1	1.19E-04	1.96E-03
3056	CDKN3, FOXM1, RAD51	2.53E-04	2.26E-03
3057	CDKN3, FOXM1, RAD54L	1.35E-04	1.05E-03
3058	CDKN3, FOXM1, RRM2	2.12E-04	2.79E-03
3059	CDKN3, FOXM1, TK1	7.95E-04	8.79E-03
3060	CDKN3, FOXM1, TOP2A	5.25E-04	3.52E-03
3061	CDKN3, KIAA0101, KIF11	9.55E-05	1.16E-03
3062	CDKN3, KIAA0101, KIF20A	4.98E-04	3.80E-03
3063	CDKN3, KIAA0101, MCM10	1.47E-03	9.89E-03
3064	CDKN3, KIAA0101, NUSAP1	1.35E-03	1.06E-02
3065	CDKN3, KIAA0101, ORC6L	3.91E-04	2.43E-03
3066	CDKN3, KIAA0101, PBK	1.65E-04	1.95E-03
3067	CDKN3, KIAA0101, PLK1	6.68E-04	5.11E-03
3068	CDKN3, KIAA0101, PRC1	9.37E-04	6.29E-03
3069	CDKN3, KIAA0101, PTTG1	1.50E-04	1.92E-03
3070	CDKN3, KIAA0101, RAD51	4.11E-04	2.62E-03
3071	CDKN3, KIAA0101, RAD54L	2.01E-04	1.15E-03
3072	CDKN3, KIAA0101, RRM2	2.39E-04	2.52E-03
3073	CDKN3, KIAA0101, TK1	1.19E-03	9.66E-03
3074	CDKN3, KIAA0101, TOP2A	7.12E-04	3.58E-03
3075	CDKN3, KIF11, KIF20A	3.59E-05	7.00E-04
3076	CDKN3, KIF11, MCM10	1.81E-04	2.76E-03
3077	CDKN3, KIF11, NUSAP1	1.63E-04	3.06E-03
3078	CDKN3, KIF11, ORC6L	2.89E-05	4.42E-04
3079	CDKN3, KIF11, PBK	1.67E-05	4.20E-04
3080	CDKN3, KIF11, PLK1	1.05E-04	1.68E-03
3081	CDKN3, KIF11, PRC1	8.02E-05	1.39E-03
3082	CDKN3, KIF11, PTTG1	1.81E-05	5.41E-04
3083	CDKN3, KIF11, RAD51	3.15E-05	4.97E-04
3084	CDKN3, KIF11, RAD54L	1.47E-05	2.08E-04
3085	CDKN3, KIF11, RRM2	2.23E-05	5.62E-04
3086	CDKN3, KIF11, TK1	1.08E-04	2.25E-03
3087	CDKN3, KIF11, TOP2A	9.74E-05	1.01E-03
3088	CDKN3, KIF20A, MCM10	8.39E-04	7.85E-03
3089	CDKN3, KIF20A, NUSAP1	8.05E-04	9.30E-03
3090	CDKN3, KIF20A, ORC6L	1.80E-04	1.73E-03
3091	CDKN3, KIF20A, PBK	7.54E-05	1.32E-03
3092	CDKN3, KIF20A, PLK1	3.70E-04	4.13E-03
3093	CDKN3, KIF20A, PRC1	5.03E-04	4.97E-03
3094	CDKN3, KIF20A, PTTG1	8.76E-05	1.61E-03
3095	CDKN3, KIF20A, RAD51	1.90E-04	1.81E-03
3096	CDKN3, KIF20A, RAD54L	1.05E-04	8.97E-04
3097	CDKN3, KIF20A, RRM2	1.32E-04	2.08E-03
3098	CDKN3, KIF20A, TK1	6.37E-04	7.49E-03
3099	CDKN3, KIF20A, TOP2A	3.47E-04	2.54E-03
3100	CDKN3, MCM10, NUSAP1	1.91E-03	1.80E-02
3101	CDKN3, MCM10, ORC6L	6.00E-04	4.84E-03
3102	CDKN3, MCM10, PBK	3.23E-04	4.51E-03
3103	CDKN3, MCM10, PLK1	1.11E-03	1.05E-02
3104	CDKN3, MCM10, PRC1	1.63E-03	1.31E-02
3105	CDKN3, MCM10, PTTG1	3.42E-04	5.03E-03
3106	CDKN3, MCM10, RAD51	7.33E-04	5.94E-03
3107	CDKN3, MCM10, RAD54L	3.89E-04	2.89E-03
3108	CDKN3, MCM10, RRM2	5.12E-04	6.12E-03
3109	CDKN3, MCM10, TK1	2.03E-03	1.88E-02
3110	CDKN3, MCM10, TOP2A	9.42E-04	6.44E-03
3111	CDKN3, NUSAP1, ORC6L	4.98E-04	5.03E-03
3112	CDKN3, NUSAP1, PBK	2.37E-04	4.12E-03
3113	CDKN3, NUSAP1, PLK1	1.58E-03	1.58E-02
3114	CDKN3, NUSAP1, PRC1	1.35E-03	1.36E-02
3115	CDKN3, NUSAP1, PTTG1	2.83E-04	5.39E-03
3116	CDKN3, NUSAP1, RAD51	5.96E-04	5.96E-03
3117	CDKN3, NUSAP1, RAD54L	3.15E-04	2.95E-03
3118	CDKN3, NUSAP1, RRM2	4.84E-04	7.06E-03
3119	CDKN3, NUSAP1, TK1	1.71E-03	2.00E-02
3120	CDKN3, NUSAP1, TOP2A	1.34E-03	9.24E-03
3121	CDKN3, ORC6L, PBK	6.98E-05	9.99E-04
3122	CDKN3, ORC6L, PLK1	3.36E-04	3.02E-03
3123	CDKN3, ORC6L, PRC1	3.81E-04	3.01E-03
3124	CDKN3, ORC6L, PTTG1	4.69E-05	7.57E-04
3125	CDKN3, ORC6L, RAD51	1.42E-04	1.06E-03

3126	CDKN3, ORC6L, RAD54L	7.70E-05	4.94E-04
3127	CDKN3, ORC6L, RRM2	1.00E-04	1.29E-03
3128	CDKN3, ORC6L, TK1	4.70E-04	4.82E-03
3129	CDKN3, ORC6L, TOP2A	2.47E-04	1.50E-03
3130	CDKN3, PBK, PLK1	1.25E-04	2.03E-03
3131	CDKN3, PBK, PRC1	1.66E-04	2.56E-03
3132	CDKN3, PBK, PTTG1	2.84E-05	8.35E-04
3133	CDKN3, PBK, RAD51	7.12E-05	1.07E-03
3134	CDKN3, PBK, RAD54L	3.51E-05	4.70E-04
3135	CDKN3, PBK, RRM2	4.08E-05	1.01E-03
3136	CDKN3, PBK, TK1	1.71E-04	3.31E-03
3137	CDKN3, PBK, TOP2A	1.30E-04	1.40E-03
3138	CDKN3, PLK1, PRC1	7.30E-04	7.16E-03
3139	CDKN3, PLK1, PTTG1	1.89E-04	3.09E-03
3140	CDKN3, PLK1, RAD51	3.11E-04	2.92E-03
3141	CDKN3, PLK1, RAD54L	1.82E-04	1.48E-03
3142	CDKN3, PLK1, RRM2	2.81E-04	3.75E-03
3143	CDKN3, PLK1, TK1	1.04E-03	1.21E-02
3144	CDKN3, PLK1, TOP2A	8.90E-04	5.86E-03
3145	CDKN3, PRC1, PTTG1	1.57E-04	2.65E-03
3146	CDKN3, PRC1, RAD51	3.85E-04	3.22E-03
3147	CDKN3, PRC1, RAD54L	2.29E-04	1.60E-03
3148	CDKN3, PRC1, RRM2	3.19E-04	3.95E-03
3149	CDKN3, PRC1, TK1	1.25E-03	1.27E-02
3150	CDKN3, PRC1, TOP2A	4.78E-04	3.42E-03
3151	CDKN3, PTTG1, RAD51	5.41E-05	8.76E-04
3152	CDKN3, PTTG1, RAD54L	2.66E-05	3.71E-04
3153	CDKN3, PTTG1, RRM2	4.43E-05	1.13E-03
3154	CDKN3, PTTG1, TK1	2.51E-04	4.89E-03
3155	CDKN3, PTTG1, TOP2A	1.54E-04	1.68E-03
3156	CDKN3, RAD51, RAD54L	7.71E-05	5.10E-04
3157	CDKN3, RAD51, RRM2	9.58E-05	1.29E-03
3158	CDKN3, RAD51, TK1	5.30E-04	5.43E-03
3159	CDKN3, RAD51, TOP2A	3.14E-04	1.93E-03
3160	CDKN3, RAD54L, RRM2	5.39E-05	6.13E-04
3161	CDKN3, RAD54L, TK1	2.76E-04	2.58E-03
3162	CDKN3, RAD54L, TOP2A	1.10E-04	6.01E-04
3163	CDKN3, RRM2, TK1	4.10E-04	6.21E-03
3164	CDKN3, RRM2, TOP2A	2.02E-04	1.99E-03
3165	CDKN3, TK1, TOP2A	7.86E-04	6.71E-03
3166	CENPF, CENPM, CEP55	2.16E-04	1.27E-03
3167	CENPF, CENPM, DLGAP5	1.74E-04	8.40E-04
3168	CENPF, CENPM, DTL	1.90E-04	9.71E-04
3169	CENPF, CENPM, FOXM1	3.25E-04	2.21E-03
3170	CENPF, CENPM, KIAA0101	4.71E-04	2.29E-03
3171	CENPF, CENPM, KIF11	3.60E-05	4.31E-04
3172	CENPF, CENPM, KIF20A	2.08E-04	1.71E-03
3173	CENPF, CENPM, MCM10	8.40E-04	5.71E-03
3174	CENPF, CENPM, NUSAP1	1.06E-03	8.21E-03
3175	CENPF, CENPM, ORC6L	1.42E-04	8.58E-04
3176	CENPF, CENPM, PBK	5.11E-05	6.48E-04
3177	CENPF, CENPM, PLK1	4.72E-04	3.29E-03
3178	CENPF, CENPM, PRC1	4.17E-04	2.78E-03
3179	CENPF, CENPM, PTTG1	6.45E-05	7.91E-04
3180	CENPF, CENPM, RAD51	1.89E-04	1.11E-03
3181	CENPF, CENPM, RAD54L	8.36E-05	4.39E-04
3182	CENPF, CENPM, RRM2	1.39E-04	1.35E-03
3183	CENPF, CENPM, TK1	5.87E-04	4.98E-03
3184	CENPF, CENPM, TOP2A	9.50E-04	4.10E-03
3185	CENPF, CEP55, DLGAP5	5.18E-05	2.41E-04
3186	CENPF, CEP55, DTL	3.95E-05	2.05E-04
3187	CENPF, CEP55, FOXM1	8.68E-05	5.75E-04
3188	CENPF, CEP55, KIAA0101	1.24E-04	5.74E-04
3189	CENPF, CEP55, KIF11	7.87E-06	9.11E-05
3190	CENPF, CEP55, KIF20A	5.09E-05	3.84E-04
3191	CENPF, CEP55, MCM10	1.88E-04	1.29E-03
3192	CENPF, CEP55, NUSAP1	1.94E-04	1.63E-03
3193	CENPF, CEP55, ORC6L	3.11E-05	1.85E-04
3194	CENPF, CEP55, PBK	1.25E-05	1.44E-04
3195	CENPF, CEP55, PLK1	1.46E-04	1.02E-03
3196	CENPF, CEP55, PRC1	8.23E-05	5.67E-04

3197	CENPF, CEP55, PTTG1	1.57E-05	1.77E-04
3198	CENPF, CEP55, RAD51	4.14E-05	2.27E-04
3199	CENPF, CEP55, RAD54L	1.45E-05	7.29E-05
3200	CENPF, CEP55, RRM2	2.63E-05	2.52E-04
3201	CENPF, CEP55, TK1	1.22E-04	1.07E-03
3202	CENPF, CEP55, TOP2A	3.03E-04	1.29E-03
3203	CENPF, DLGAP5, DTL	6.76E-05	2.81E-04
3204	CENPF, DLGAP5, FOXM1	1.06E-04	6.05E-04
3205	CENPF, DLGAP5, KIAA0101	1.55E-04	6.36E-04
3206	CENPF, DLGAP5, KIF11	1.41E-05	1.24E-04
3207	CENPF, DLGAP5, KIF20A	7.70E-05	4.82E-04
3208	CENPF, DLGAP5, MCM10	2.48E-04	1.49E-03
3209	CENPF, DLGAP5, NUSAP1	2.79E-04	1.89E-03
3210	CENPF, DLGAP5, ORC6L	5.61E-05	2.64E-04
3211	CENPF, DLGAP5, PBK	1.70E-05	1.64E-04
3212	CENPF, DLGAP5, PLK1	1.73E-04	1.03E-03
3213	CENPF, DLGAP5, PRC1	1.49E-04	8.05E-04
3214	CENPF, DLGAP5, PTTG1	2.26E-05	2.13E-04
3215	CENPF, DLGAP5, RAD51	6.24E-05	2.96E-04
3216	CENPF, DLGAP5, RAD54L	3.99E-05	1.57E-04
3217	CENPF, DLGAP5, RRM2	3.55E-05	2.85E-04
3218	CENPF, DLGAP5, TK1	1.65E-04	1.22E-03
3219	CENPF, DLGAP5, TOP2A	1.85E-04	6.88E-04
3220	CENPF, DTL, FOXM1	1.03E-04	6.45E-04
3221	CENPF, DTL, KIAA0101	1.36E-04	5.56E-04
3222	CENPF, DTL, KIF11	6.01E-06	6.63E-05
3223	CENPF, DTL, KIF20A	5.83E-05	4.19E-04
3224	CENPF, DTL, MCM10	2.23E-04	1.49E-03
3225	CENPF, DTL, NUSAP1	3.87E-04	2.89E-03
3226	CENPF, DTL, ORC6L	4.23E-05	2.13E-04
3227	CENPF, DTL, PBK	8.42E-06	1.04E-04
3228	CENPF, DTL, PLK1	2.34E-04	1.51E-03
3229	CENPF, DTL, PRC1	1.46E-04	8.13E-04
3230	CENPF, DTL, PTTG1	1.52E-05	1.79E-04
3231	CENPF, DTL, RAD51	4.61E-05	2.33E-04
3232	CENPF, DTL, RAD54L	3.20E-05	1.27E-04
3233	CENPF, DTL, RRM2	3.12E-05	2.78E-04
3234	CENPF, DTL, TK1	1.62E-04	1.38E-03
3235	CENPF, DTL, TOP2A	2.14E-04	8.40E-04
3236	CENPF, FOXM1, KIAA0101	2.06E-04	1.21E-03
3237	CENPF, FOXM1, KIF11	1.86E-05	2.47E-04
3238	CENPF, FOXM1, KIF20A	1.10E-04	1.01E-03
3239	CENPF, FOXM1, MCM10	3.93E-04	3.11E-03
3240	CENPF, FOXM1, NUSAP1	5.32E-04	4.71E-03
3241	CENPF, FOXM1, ORC6L	8.30E-05	5.83E-04
3242	CENPF, FOXM1, PBK	3.04E-05	4.16E-04
3243	CENPF, FOXM1, PLK1	3.51E-04	2.69E-03
3244	CENPF, FOXM1, PRC1	2.47E-04	1.84E-03
3245	CENPF, FOXM1, PTTG1	3.68E-05	5.06E-04
3246	CENPF, FOXM1, RAD51	8.48E-05	5.97E-04
3247	CENPF, FOXM1, RAD54L	5.62E-05	3.32E-04
3248	CENPF, FOXM1, RRM2	7.69E-05	8.45E-04
3249	CENPF, FOXM1, TK1	2.72E-04	2.78E-03
3250	CENPF, FOXM1, TOP2A	2.95E-04	1.52E-03
3251	CENPF, KIAA0101, KIF11	2.30E-05	2.21E-04
3252	CENPF, KIAA0101, KIF20A	1.70E-04	1.11E-03
3253	CENPF, KIAA0101, MCM10	5.43E-04	3.26E-03
3254	CENPF, KIAA0101, NUSAP1	6.83E-04	4.64E-03
3255	CENPF, KIAA0101, ORC6L	1.30E-04	6.22E-04
3256	CENPF, KIAA0101, PBK	3.82E-05	3.87E-04
3257	CENPF, KIAA0101, PLK1	3.01E-04	1.84E-03
3258	CENPF, KIAA0101, PRC1	3.55E-04	1.89E-03
3259	CENPF, KIAA0101, PTTG1	3.97E-05	4.14E-04
3260	CENPF, KIAA0101, RAD51	1.31E-04	6.31E-04
3261	CENPF, KIAA0101, RAD54L	7.78E-05	3.21E-04
3262	CENPF, KIAA0101, RRM2	8.10E-05	6.76E-04
3263	CENPF, KIAA0101, TK1	3.90E-04	2.81E-03
3264	CENPF, KIAA0101, TOP2A	3.79E-04	1.39E-03
3265	CENPF, KIF11, KIF20A	7.60E-06	1.35E-04
3266	CENPF, KIF11, MCM10	4.29E-05	6.16E-04
3267	CENPF, KIF11, NUSAP1	5.84E-05	1.02E-03

3268	CENPF, KIF11, ORC6L	6.24E-06	7.86E-05
3269	CENPF, KIF11, PBK	3.16E-06	7.05E-05
3270	CENPF, KIF11, PLK1	3.86E-05	5.14E-04
3271	CENPF, KIF11, PRC1	1.96E-05	2.81E-04
3272	CENPF, KIF11, PTTG1	3.40E-06	8.90E-05
3273	CENPF, KIF11, RAD51	6.26E-06	7.81E-05
3274	CENPF, KIF11, RAD54L	3.97E-06	4.26E-05
3275	CENPF, KIF11, RRM2	5.07E-06	1.07E-04
3276	CENPF, KIF11, TK1	2.11E-05	4.27E-04
3277	CENPF, KIF11, TOP2A	4.38E-05	3.42E-04
3278	CENPF, KIF20A, MCM10	2.89E-04	2.60E-03
3279	CENPF, KIF20A, NUSAP1	4.15E-04	4.44E-03
3280	CENPF, KIF20A, ORC6L	5.42E-05	4.53E-04
3281	CENPF, KIF20A, PBK	1.54E-05	2.61E-04
3282	CENPF, KIF20A, PLK1	1.63E-04	1.58E-03
3283	CENPF, KIF20A, PRC1	1.78E-04	1.55E-03
3284	CENPF, KIF20A, PTTG1	2.29E-05	3.85E-04
3285	CENPF, KIF20A, RAD51	5.41E-05	4.39E-04
3286	CENPF, KIF20A, RAD54L	3.94E-05	2.73E-04
3287	CENPF, KIF20A, RRM2	4.25E-05	5.95E-04
3288	CENPF, KIF20A, TK1	1.91E-04	2.21E-03
3289	CENPF, KIF20A, TOP2A	1.77E-04	1.02E-03
3290	CENPF, MCM10, NUSAP1	9.06E-04	8.23E-03
3291	CENPF, MCM10, ORC6L	1.91E-04	1.38E-03
3292	CENPF, MCM10, PBK	7.95E-05	1.09E-03
3293	CENPF, MCM10, PLK1	4.73E-04	4.04E-03
3294	CENPF, MCM10, PRC1	6.11E-04	4.50E-03
3295	CENPF, MCM10, PTTG1	9.46E-05	1.33E-03
3296	CENPF, MCM10, RAD51	2.35E-04	1.69E-03
3297	CENPF, MCM10, RAD54L	1.46E-04	9.15E-04
3298	CENPF, MCM10, RRM2	1.69E-04	1.89E-03
3299	CENPF, MCM10, TK1	6.89E-04	6.46E-03
3300	CENPF, MCM10, TOP2A	4.60E-04	2.55E-03
3301	CENPF, NUSAP1, ORC6L	2.42E-04	2.14E-03
3302	CENPF, NUSAP1, PBK	8.17E-05	1.36E-03
3303	CENPF, NUSAP1, PLK1	1.02E-03	8.84E-03
3304	CENPF, NUSAP1, PRC1	7.21E-04	6.39E-03
3305	CENPF, NUSAP1, PTTG1	1.30E-04	2.22E-03
3306	CENPF, NUSAP1, RAD51	2.76E-04	2.42E-03
3307	CENPF, NUSAP1, RAD54L	1.81E-04	1.43E-03
3308	CENPF, NUSAP1, RRM2	2.53E-04	3.26E-03
3309	CENPF, NUSAP1, TK1	7.74E-04	8.79E-03
3310	CENPF, NUSAP1, TOP2A	9.24E-04	5.18E-03
3311	CENPF, ORC6L, PBK	1.40E-05	1.77E-04
3312	CENPF, ORC6L, PLK1	1.48E-04	1.10E-03
3313	CENPF, ORC6L, PRC1	1.30E-04	8.19E-04
3314	CENPF, ORC6L, PTTG1	1.12E-05	1.49E-04
3315	CENPF, ORC6L, RAD51	3.90E-05	2.24E-04
3316	CENPF, ORC6L, RAD54L	2.82E-05	1.34E-04
3317	CENPF, ORC6L, RRM2	2.99E-05	3.20E-04
3318	CENPF, ORC6L, TK1	1.31E-04	1.23E-03
3319	CENPF, ORC6L, TOP2A	1.31E-04	5.96E-04
3320	CENPF, PBK, PLK1	3.80E-05	5.37E-04
3321	CENPF, PBK, PRC1	3.89E-05	5.34E-04
3322	CENPF, PBK, PTTG1	4.45E-06	1.23E-04
3323	CENPF, PBK, RAD51	1.31E-05	1.72E-04
3324	CENPF, PBK, RAD54L	8.31E-06	9.01E-05
3325	CENPF, PBK, RRM2	8.29E-06	1.88E-04
3326	CENPF, PBK, TK1	3.16E-05	6.35E-04
3327	CENPF, PBK, TOP2A	4.72E-05	3.97E-04
3328	CENPF, PLK1, PRC1	3.48E-04	2.79E-03
3329	CENPF, PLK1, PTTG1	8.29E-05	1.12E-03
3330	CENPF, PLK1, RAD51	1.32E-04	9.86E-04
3331	CENPF, PLK1, RAD54L	9.69E-05	6.14E-04
3332	CENPF, PLK1, RRM2	1.32E-04	1.45E-03
3333	CENPF, PLK1, TK1	4.35E-04	4.62E-03
3334	CENPF, PLK1, TOP2A	6.12E-04	3.19E-03
3335	CENPF, PRC1, PTTG1	4.55E-05	6.39E-04
3336	CENPF, PRC1, RAD51	1.25E-04	8.20E-04
3337	CENPF, PRC1, RAD54L	9.55E-05	5.00E-04
3338	CENPF, PRC1, RRM2	1.13E-04	1.17E-03

3339	CENPF, PRC1, TK1	4.16E-04	3.91E-03
3340	CENPF, PRC1, TOP2A	2.69E-04	1.39E-03
3341	CENPF, PTTG1, RAD51	1.23E-05	1.59E-04
3342	CENPF, PTTG1, RAD54L	8.79E-06	9.18E-05
3343	CENPF, PTTG1, RRM2	1.24E-05	2.62E-04
3344	CENPF, PTTG1, TK1	6.03E-05	1.14E-03
3345	CENPF, PTTG1, TOP2A	7.99E-05	6.50E-04
3346	CENPF, RAD51, RAD54L	2.67E-05	1.26E-04
3347	CENPF, RAD51, RRM2	2.74E-05	2.94E-04
3348	CENPF, RAD51, TK1	1.44E-04	1.33E-03
3349	CENPF, RAD51, TOP2A	1.58E-04	7.09E-04
3350	CENPF, RAD54L, RRM2	2.09E-05	1.79E-04
3351	CENPF, RAD54L, TK1	9.47E-05	7.43E-04
3352	CENPF, RAD54L, TOP2A	6.87E-05	2.67E-04
3353	CENPF, RRM2, TK1	1.24E-04	1.76E-03
3354	CENPF, RRM2, TOP2A	1.13E-04	8.10E-04
3355	CENPF, TK1, TOP2A	3.83E-04	2.66E-03
3356	CENPM, CEP55, DLGAP5	3.44E-04	1.45E-03
3357	CENPM, CEP55, DTL	3.60E-04	1.58E-03
3358	CENPM, CEP55, FOXM1	6.72E-04	3.79E-03
3359	CENPM, CEP55, KIAA0101	1.21E-03	4.76E-03
3360	CENPM, CEP55, KIF11	1.17E-04	1.13E-03
3361	CENPM, CEP55, KIF20A	4.53E-04	2.76E-03
3362	CENPM, CEP55, MCM10	1.63E-03	9.01E-03
3363	CENPM, CEP55, NUSAP1	1.52E-03	9.27E-03
3364	CENPM, CEP55, ORC6L	3.12E-04	1.54E-03
3365	CENPM, CEP55, PBK	1.70E-04	1.62E-03
3366	CENPM, CEP55, PLK1	8.87E-04	5.21E-03
3367	CENPM, CEP55, PRC1	7.61E-04	4.33E-03
3368	CENPM, CEP55, PTTG1	1.54E-04	1.48E-03
3369	CENPM, CEP55, RAD51	4.43E-04	2.10E-03
3370	CENPM, CEP55, RAD54L	1.45E-04	6.32E-04
3371	CENPM, CEP55, RRM2	3.05E-04	2.34E-03
3372	CENPM, CEP55, TK1	1.42E-03	9.25E-03
3373	CENPM, CEP55, TOP2A	1.87E-03	6.71E-03
3374	CENPM, DLGAP5, DTL	4.25E-04	1.34E-03
3375	CENPM, DLGAP5, FOXM1	7.06E-04	2.98E-03
3376	CENPM, DLGAP5, KIAA0101	1.43E-03	4.25E-03
3377	CENPM, DLGAP5, KIF11	1.54E-04	9.71E-04
3378	CENPM, DLGAP5, KIF20A	6.51E-04	2.79E-03
3379	CENPM, DLGAP5, MCM10	2.21E-03	8.93E-03
3380	CENPM, DLGAP5, NUSAP1	1.75E-03	7.88E-03
3381	CENPM, DLGAP5, ORC6L	4.74E-04	1.54E-03
3382	CENPM, DLGAP5, PBK	2.05E-04	1.38E-03
3383	CENPM, DLGAP5, PLK1	7.86E-04	3.40E-03
3384	CENPM, DLGAP5, PRC1	1.22E-03	4.55E-03
3385	CENPM, DLGAP5, PTTG1	2.04E-04	1.34E-03
3386	CENPM, DLGAP5, RAD51	7.31E-04	2.39E-03
3387	CENPM, DLGAP5, RAD54L	2.77E-04	7.90E-04
3388	CENPM, DLGAP5, RRM2	3.42E-04	1.83E-03
3389	CENPM, DLGAP5, TK1	1.65E-03	7.76E-03
3390	CENPM, DLGAP5, TOP2A	1.41E-03	4.21E-03
3391	CENPM, DTL, FOXM1	7.30E-04	3.41E-03
3392	CENPM, DTL, KIAA0101	1.51E-03	4.53E-03
3393	CENPM, DTL, KIF11	8.18E-05	6.56E-04
3394	CENPM, DTL, KIF20A	5.41E-04	2.67E-03
3395	CENPM, DTL, MCM10	2.43E-03	1.07E-02
3396	CENPM, DTL, NUSAP1	2.40E-03	1.19E-02
3397	CENPM, DTL, ORC6L	3.88E-04	1.37E-03
3398	CENPM, DTL, PBK	1.29E-04	1.12E-03
3399	CENPM, DTL, PLK1	9.56E-04	4.62E-03
3400	CENPM, DTL, PRC1	1.26E-03	5.08E-03
3401	CENPM, DTL, PTTG1	1.42E-04	1.20E-03
3402	CENPM, DTL, RAD51	6.69E-04	2.34E-03
3403	CENPM, DTL, RAD54L	2.24E-04	6.60E-04
3404	CENPM, DTL, RRM2	3.32E-04	2.00E-03
3405	CENPM, DTL, TK1	1.99E-03	1.04E-02
3406	CENPM, DTL, TOP2A	1.93E-03	5.80E-03
3407	CENPM, FOXM1, KIAA0101	2.08E-03	8.40E-03
3408	CENPM, FOXM1, KIF11	2.52E-04	2.23E-03
3409	CENPM, FOXM1, KIF20A	9.96E-04	5.96E-03

3410	CENPM, FOXM1, MCM10	3.59E-03	1.80E-02
3411	CENPM, FOXM1, NUSAP1	3.35E-03	1.89E-02
3412	CENPM, FOXM1, ORC6L	7.66E-04	3.58E-03
3413	CENPM, FOXM1, PBK	3.88E-04	3.49E-03
3414	CENPM, FOXM1, PLK1	1.66E-03	9.19E-03
3415	CENPM, FOXM1, PRC1	2.07E-03	1.03E-02
3416	CENPM, FOXM1, PTTG1	3.74E-04	3.41E-03
3417	CENPM, FOXM1, RAD51	1.10E-03	5.10E-03
3418	CENPM, FOXM1, RAD54L	4.24E-04	1.77E-03
3419	CENPM, FOXM1, RRM2	7.59E-04	5.24E-03
3420	CENPM, FOXM1, TK1	2.83E-03	1.72E-02
3421	CENPM, FOXM1, TOP2A	2.48E-03	9.81E-03
3422	CENPM, KIAA0101, KIF11	5.07E-04	3.11E-03
3423	CENPM, KIAA0101, KIF20A	2.10E-03	8.62E-03
3424	CENPM, KIAA0101, MCM10	6.20E-03	2.32E-02
3425	CENPM, KIAA0101, NUSAP1	5.81E-03	2.39E-02
3426	CENPM, KIAA0101, ORC6L	1.73E-03	5.45E-03
3427	CENPM, KIAA0101, PBK	7.06E-04	4.48E-03
3428	CENPM, KIAA0101, PLK1	2.23E-03	9.28E-03
3429	CENPM, KIAA0101, PRC1	4.02E-03	1.41E-02
3430	CENPM, KIAA0101, PTTG1	6.94E-04	4.42E-03
3431	CENPM, KIAA0101, RAD51	2.34E-03	7.35E-03
3432	CENPM, KIAA0101, RAD54L	8.59E-04	2.49E-03
3433	CENPM, KIAA0101, RRM2	1.23E-03	6.19E-03
3434	CENPM, KIAA0101, TK1	5.48E-03	2.29E-02
3435	CENPM, KIAA0101, TOP2A	3.94E-03	1.12E-02
3436	CENPM, KIF11, KIF20A	1.57E-04	1.62E-03
3437	CENPM, KIF11, MCM10	8.53E-04	6.93E-03
3438	CENPM, KIF11, NUSAP1	7.74E-04	7.34E-03
3439	CENPM, KIF11, ORC6L	1.35E-04	1.03E-03
3440	CENPM, KIF11, PBK	5.48E-05	8.01E-04
3441	CENPM, KIF11, PLK1	3.09E-04	2.80E-03
3442	CENPM, KIF11, PRC1	4.02E-04	3.32E-03
3443	CENPM, KIF11, PTTG1	7.12E-05	1.15E-03
3444	CENPM, KIF11, RAD51	1.99E-04	1.48E-03
3445	CENPM, KIF11, RAD54L	6.51E-05	4.46E-04
3446	CENPM, KIF11, RRM2	1.27E-04	1.45E-03
3447	CENPM, KIF11, TK1	5.35E-04	5.59E-03
3448	CENPM, KIF11, TOP2A	6.70E-04	3.82E-03
3449	CENPM, KIF20A, MCM10	3.27E-03	1.72E-02
3450	CENPM, KIF20A, NUSAP1	3.02E-03	1.90E-02
3451	CENPM, KIF20A, ORC6L	6.67E-04	3.34E-03
3452	CENPM, KIF20A, PBK	2.72E-04	2.70E-03
3453	CENPM, KIF20A, PLK1	1.00E-03	6.45E-03
3454	CENPM, KIF20A, PRC1	1.88E-03	9.96E-03
3455	CENPM, KIF20A, PTTG1	3.16E-04	3.12E-03
3456	CENPM, KIF20A, RAD51	9.43E-04	4.52E-03
3457	CENPM, KIF20A, RAD54L	3.77E-04	1.68E-03
3458	CENPM, KIF20A, RRM2	5.73E-04	4.46E-03
3459	CENPM, KIF20A, TK1	2.60E-03	1.62E-02
3460	CENPM, KIF20A, TOP2A	1.73E-03	7.25E-03
3461	CENPM, MCM10, NUSAP1	7.53E-03	3.88E-02
3462	CENPM, MCM10, ORC6L	2.36E-03	1.03E-02
3463	CENPM, MCM10, PBK	1.30E-03	1.02E-02
3464	CENPM, MCM10, PLK1	3.50E-03	1.90E-02
3465	CENPM, MCM10, PRC1	6.28E-03	2.77E-02
3466	CENPM, MCM10, PTTG1	1.47E-03	1.14E-02
3467	CENPM, MCM10, RAD51	3.67E-03	1.55E-02
3468	CENPM, MCM10, RAD54L	1.52E-03	6.12E-03
3469	CENPM, MCM10, RRM2	2.24E-03	1.38E-02
3470	CENPM, MCM10, TK1	8.21E-03	4.13E-02
3471	CENPM, MCM10, TOP2A	4.61E-03	1.84E-02
3472	CENPM, NUSAP1, ORC6L	1.94E-03	1.01E-02
3473	CENPM, NUSAP1, PBK	9.13E-04	8.75E-03
3474	CENPM, NUSAP1, PLK1	4.42E-03	2.55E-02
3475	CENPM, NUSAP1, PRC1	5.15E-03	2.72E-02
3476	CENPM, NUSAP1, PTTG1	1.15E-03	1.12E-02
3477	CENPM, NUSAP1, RAD51	3.09E-03	1.52E-02
3478	CENPM, NUSAP1, RAD54L	1.18E-03	5.77E-03
3479	CENPM, NUSAP1, RRM2	2.06E-03	1.49E-02
3480	CENPM, NUSAP1, TK1	7.13E-03	4.27E-02

3481	CENPM, NUSAP1, TOP2A	7.17E-03	2.73E-02
3482	CENPM, ORC6L, PBK	2.51E-04	1.92E-03
3483	CENPM, ORC6L, PLK1	9.24E-04	4.47E-03
3484	CENPM, ORC6L, PRC1	1.49E-03	5.82E-03
3485	CENPM, ORC6L, PTTG1	1.79E-04	1.39E-03
3486	CENPM, ORC6L, RAD51	7.47E-04	2.61E-03
3487	CENPM, ORC6L, RAD54L	2.85E-04	8.80E-04
3488	CENPM, ORC6L, RRM2	4.61E-04	2.73E-03
3489	CENPM, ORC6L, TK1	1.99E-03	1.01E-02
3490	CENPM, ORC6L, TOP2A	1.49E-03	4.96E-03
3491	CENPM, PBK, PLK1	3.35E-04	3.20E-03
3492	CENPM, PBK, PRC1	6.37E-04	5.25E-03
3493	CENPM, PBK, PTTG1	9.55E-05	1.59E-03
3494	CENPM, PBK, RAD51	3.48E-04	2.67E-03
3495	CENPM, PBK, RAD54L	1.24E-04	8.82E-04
3496	CENPM, PBK, RRM2	1.76E-04	2.20E-03
3497	CENPM, PBK, TK1	7.19E-04	7.39E-03
3498	CENPM, PBK, TOP2A	6.67E-04	4.17E-03
3499	CENPM, PLK1, PRC1	2.10E-03	1.12E-02
3500	CENPM, PLK1, PTTG1	4.72E-04	4.40E-03
3501	CENPM, PLK1, RAD51	1.17E-03	5.65E-03
3502	CENPM, PLK1, RAD54L	4.76E-04	2.08E-03
3503	CENPM, PLK1, RRM2	8.65E-04	6.07E-03
3504	CENPM, PLK1, TK1	3.23E-03	2.08E-02
3505	CENPM, PLK1, TOP2A	4.22E-03	1.63E-02
3506	CENPM, PRC1, PTTG1	6.59E-04	5.38E-03
3507	CENPM, PRC1, RAD51	2.05E-03	8.19E-03
3508	CENPM, PRC1, RAD54L	8.60E-04	3.02E-03
3509	CENPM, PRC1, RRM2	1.39E-03	8.25E-03
3510	CENPM, PRC1, TK1	5.19E-03	2.68E-02
3511	CENPM, PRC1, TOP2A	2.95E-03	1.11E-02
3512	CENPM, PTTG1, RAD51	2.99E-04	2.24E-03
3513	CENPM, PTTG1, RAD54L	1.03E-04	6.87E-04
3514	CENPM, PTTG1, RRM2	2.14E-04	2.48E-03
3515	CENPM, PTTG1, TK1	1.12E-03	1.08E-02
3516	CENPM, PTTG1, TOP2A	8.52E-04	5.12E-03
3517	CENPM, RAD51, RAD54L	4.09E-04	1.27E-03
3518	CENPM, RAD51, RRM2	6.15E-04	3.60E-03
3519	CENPM, RAD51, TK1	2.99E-03	1.46E-02
3520	CENPM, RAD51, TOP2A	1.90E-03	6.37E-03
3521	CENPM, RAD54L, RRM2	2.41E-04	1.26E-03
3522	CENPM, RAD54L, TK1	1.14E-03	5.33E-03
3523	CENPM, RAD54L, TOP2A	7.78E-04	2.28E-03
3524	CENPM, RRM2, TK1	1.92E-03	1.38E-02
3525	CENPM, RRM2, TOP2A	1.44E-03	7.16E-03
3526	CENPM, TK1, TOP2A	4.82E-03	2.20E-02
3527	CEP55, DLGAP5, DTL	7.17E-05	2.64E-04
3528	CEP55, DLGAP5, FOXM1	1.39E-04	6.78E-04
3529	CEP55, DLGAP5, KIAA0101	2.95E-04	1.01E-03
3530	CEP55, DLGAP5, KIF11	2.59E-05	1.95E-04
3531	CEP55, DLGAP5, KIF20A	1.24E-04	5.97E-04
3532	CEP55, DLGAP5, MCM10	3.84E-04	1.90E-03
3533	CEP55, DLGAP5, NUSAP1	2.77E-04	1.47E-03
3534	CEP55, DLGAP5, ORC6L	7.19E-05	2.87E-04
3535	CEP55, DLGAP5, PBK	3.81E-05	2.89E-04
3536	CEP55, DLGAP5, PLK1	1.67E-04	8.69E-04
3537	CEP55, DLGAP5, PRC1	1.70E-04	8.29E-04
3538	CEP55, DLGAP5, PTTG1	3.41E-05	2.61E-04
3539	CEP55, DLGAP5, RAD51	1.14E-04	4.39E-04
3540	CEP55, DLGAP5, RAD54L	3.44E-05	1.18E-04
3541	CEP55, DLGAP5, RRM2	4.21E-05	2.83E-04
3542	CEP55, DLGAP5, TK1	2.54E-04	1.51E-03
3543	CEP55, DLGAP5, TOP2A	3.60E-04	1.16E-03
3544	CEP55, DTL, FOXM1	1.07E-04	5.94E-04
3545	CEP55, DTL, KIAA0101	2.35E-04	8.17E-04
3546	CEP55, DTL, KIF11	8.96E-06	9.02E-05
3547	CEP55, DTL, KIF20A	7.39E-05	4.12E-04
3548	CEP55, DTL, MCM10	3.18E-04	1.75E-03
3549	CEP55, DTL, NUSAP1	2.57E-04	1.57E-03
3550	CEP55, DTL, ORC6L	4.10E-05	1.85E-04
3551	CEP55, DTL, PBK	1.69E-05	1.67E-04

3552	CEP55, DTL, PLK1	1.62E-04	9.73E-04
3553	CEP55, DTL, PRC1	1.22E-04	6.54E-04
3554	CEP55, DTL, PTTG1	1.51E-05	1.55E-04
3555	CEP55, DTL, RAD51	7.12E-05	2.96E-04
3556	CEP55, DTL, RAD54L	1.77E-05	6.32E-05
3557	CEP55, DTL, RRM2	2.77E-05	2.13E-04
3558	CEP55, DTL, TK1	2.15E-04	1.49E-03
3559	CEP55, DTL, TOP2A	3.86E-04	1.31E-03
3560	CEP55, FOXM1, KIAA0101	3.90E-04	1.85E-03
3561	CEP55, FOXM1, KIF11	3.38E-05	3.81E-04
3562	CEP55, FOXM1, KIF20A	1.70E-04	1.18E-03
3563	CEP55, FOXM1, MCM10	5.93E-04	3.79E-03
3564	CEP55, FOXM1, NUSAP1	4.76E-04	3.48E-03
3565	CEP55, FOXM1, ORC6L	1.07E-04	6.29E-04
3566	CEP55, FOXM1, PBK	6.57E-05	6.95E-04
3567	CEP55, FOXM1, PLK1	3.33E-04	2.25E-03
3568	CEP55, FOXM1, PRC1	2.70E-04	1.81E-03
3569	CEP55, FOXM1, PTTG1	5.52E-05	6.04E-04
3570	CEP55, FOXM1, RAD51	1.52E-04	8.58E-04
3571	CEP55, FOXM1, RAD54L	4.64E-05	2.41E-04
3572	CEP55, FOXM1, RRM2	9.04E-05	8.34E-04
3573	CEP55, FOXM1, TK1	4.12E-04	3.32E-03
3574	CEP55, FOXM1, TOP2A	6.00E-04	2.62E-03
3575	CEP55, KIAA0101, KIF11	6.60E-05	4.98E-04
3576	CEP55, KIAA0101, KIF20A	3.76E-04	1.79E-03
3577	CEP55, KIAA0101, MCM10	1.12E-03	5.25E-03
3578	CEP55, KIAA0101, NUSAP1	9.16E-04	4.73E-03
3579	CEP55, KIAA0101, ORC6L	2.32E-04	8.98E-04
3580	CEP55, KIAA0101, PBK	1.23E-04	9.13E-04
3581	CEP55, KIAA0101, PLK1	4.23E-04	2.14E-03
3582	CEP55, KIAA0101, PRC1	5.64E-04	2.61E-03
3583	CEP55, KIAA0101, PTTG1	1.01E-04	7.71E-04
3584	CEP55, KIAA0101, RAD51	3.52E-04	1.32E-03
3585	CEP55, KIAA0101, RAD54L	1.02E-04	3.56E-04
3586	CEP55, KIAA0101, RRM2	1.45E-04	9.47E-04
3587	CEP55, KIAA0101, TK1	8.50E-04	4.63E-03
3588	CEP55, KIAA0101, TOP2A	8.74E-04	2.65E-03
3589	CEP55, KIF11, KIF20A	1.81E-05	2.27E-04
3590	CEP55, KIF11, MCM10	1.09E-04	1.19E-03
3591	CEP55, KIF11, NUSAP1	7.44E-05	9.65E-04
3592	CEP55, KIF11, ORC6L	1.31E-05	1.34E-04
3593	CEP55, KIF11, PBK	7.49E-06	1.29E-04
3594	CEP55, KIF11, PLK1	4.40E-05	5.24E-04
3595	CEP55, KIF11, PRC1	3.47E-05	4.27E-04
3596	CEP55, KIF11, PTTG1	7.54E-06	1.55E-04
3597	CEP55, KIF11, RAD51	2.09E-05	1.96E-04
3598	CEP55, KIF11, RAD54L	4.81E-06	4.47E-05
3599	CEP55, KIF11, RRM2	7.63E-06	1.32E-04
3600	CEP55, KIF11, TK1	5.32E-05	7.93E-04
3601	CEP55, KIF11, TOP2A	1.14E-04	7.70E-04
3602	CEP55, KIF20A, MCM10	5.17E-04	3.44E-03
3603	CEP55, KIF20A, NUSAP1	3.95E-04	3.32E-03
3604	CEP55, KIF20A, ORC6L	8.02E-05	4.92E-04
3605	CEP55, KIF20A, PBK	4.18E-05	4.75E-04
3606	CEP55, KIF20A, PLK1	1.79E-04	1.37E-03
3607	CEP55, KIF20A, PRC1	2.24E-04	1.60E-03
3608	CEP55, KIF20A, PTTG1	4.19E-05	4.85E-04
3609	CEP55, KIF20A, RAD51	1.21E-04	6.81E-04
3610	CEP55, KIF20A, RAD54L	3.79E-05	2.03E-04
3611	CEP55, KIF20A, RRM2	5.72E-05	5.93E-04
3612	CEP55, KIF20A, TK1	3.51E-04	2.88E-03
3613	CEP55, KIF20A, TOP2A	3.69E-04	1.64E-03
3614	CEP55, MCM10, NUSAP1	1.03E-03	7.40E-03
3615	CEP55, MCM10, ORC6L	3.16E-04	1.82E-03
3616	CEP55, MCM10, PBK	1.95E-04	1.95E-03
3617	CEP55, MCM10, PLK1	5.73E-04	4.06E-03
3618	CEP55, MCM10, PRC1	7.93E-04	5.03E-03
3619	CEP55, MCM10, PTTG1	1.84E-04	1.90E-03
3620	CEP55, MCM10, RAD51	4.73E-04	2.61E-03
3621	CEP55, MCM10, RAD54L	1.55E-04	8.24E-04
3622	CEP55, MCM10, RRM2	2.50E-04	2.21E-03

3623	CEP55, MCM10, TK1	1.16E-03	8.30E-03
3624	CEP55, MCM10, TOP2A	1.01E-03	4.58E-03
3625	CEP55, NUSAP1, ORC6L	2.07E-04	1.42E-03
3626	CEP55, NUSAP1, PBK	1.15E-04	1.42E-03
3627	CEP55, NUSAP1, PLK1	6.85E-04	5.26E-03
3628	CEP55, NUSAP1, PRC1	5.27E-04	4.17E-03
3629	CEP55, NUSAP1, PTTG1	1.11E-04	1.49E-03
3630	CEP55, NUSAP1, RAD51	3.46E-04	2.16E-03
3631	CEP55, NUSAP1, RAD54L	9.66E-05	6.23E-04
3632	CEP55, NUSAP1, RRM2	1.79E-04	1.99E-03
3633	CEP55, NUSAP1, TK1	8.23E-04	7.34E-03
3634	CEP55, NUSAP1, TOP2A	1.38E-03	6.14E-03
3635	CEP55, ORC6L, PBK	3.16E-05	3.00E-04
3636	CEP55, ORC6L, PLK1	1.24E-04	7.97E-04
3637	CEP55, ORC6L, PRC1	1.34E-04	7.69E-04
3638	CEP55, ORC6L, PTTG1	1.64E-05	1.68E-04
3639	CEP55, ORC6L, RAD51	7.34E-05	3.33E-04
3640	CEP55, ORC6L, RAD54L	2.20E-05	9.08E-05
3641	CEP55, ORC6L, RRM2	3.21E-05	2.78E-04
3642	CEP55, ORC6L, TK1	2.04E-04	1.49E-03
3643	CEP55, ORC6L, TOP2A	2.74E-04	1.04E-03
3644	CEP55, PBK, PLK1	5.95E-05	6.74E-04
3645	CEP55, PBK, PRC1	7.28E-05	8.14E-04
3646	CEP55, PBK, PTTG1	1.29E-05	2.49E-04
3647	CEP55, PBK, RAD51	4.41E-05	4.11E-04
3648	CEP55, PBK, RAD54L	1.21E-05	1.06E-04
3649	CEP55, PBK, RRM2	1.71E-05	2.92E-04
3650	CEP55, PBK, TK1	8.89E-05	1.21E-03
3651	CEP55, PBK, TOP2A	1.45E-04	9.64E-04
3652	CEP55, PLK1, PRC1	2.71E-04	2.05E-03
3653	CEP55, PLK1, PTTG1	7.95E-05	9.16E-04
3654	CEP55, PLK1, RAD51	1.70E-04	1.04E-03
3655	CEP55, PLK1, RAD54L	5.46E-05	3.13E-04
3656	CEP55, PLK1, RRM2	1.05E-04	1.01E-03
3657	CEP55, PLK1, TK1	4.79E-04	4.24E-03
3658	CEP55, PLK1, TOP2A	1.08E-03	4.79E-03
3659	CEP55, PRC1, PTTG1	5.67E-05	6.76E-04
3660	CEP55, PRC1, RAD51	1.85E-04	1.04E-03
3661	CEP55, PRC1, RAD54L	6.22E-05	3.11E-04
3662	CEP55, PRC1, RRM2	1.08E-04	1.01E-03
3663	CEP55, PRC1, TK1	5.33E-04	4.24E-03
3664	CEP55, PRC1, TOP2A	5.10E-04	2.26E-03
3665	CEP55, PTTG1, RAD51	2.96E-05	2.74E-04
3666	CEP55, PTTG1, RAD54L	7.28E-06	6.31E-05
3667	CEP55, PTTG1, RRM2	1.59E-05	2.63E-04
3668	CEP55, PTTG1, TK1	1.17E-04	1.60E-03
3669	CEP55, PTTG1, TOP2A	1.66E-04	1.10E-03
3670	CEP55, RAD51, RAD54L	3.07E-05	1.19E-04
3671	CEP55, RAD51, RRM2	4.84E-05	3.94E-04
3672	CEP55, RAD51, TK1	3.21E-04	2.15E-03
3673	CEP55, RAD51, TOP2A	3.70E-04	1.35E-03
3674	CEP55, RAD54L, RRM2	1.43E-05	1.05E-04
3675	CEP55, RAD54L, TK1	9.53E-05	6.25E-04
3676	CEP55, RAD54L, TOP2A	1.27E-04	4.13E-04
3677	CEP55, RRM2, TK1	1.77E-04	1.96E-03
3678	CEP55, RRM2, TOP2A	2.30E-04	1.34E-03
3679	CEP55, TK1, TOP2A	9.28E-04	5.06E-03
3680	DLGAP5, DTL, FOXM1	2.01E-04	8.58E-04
3681	DLGAP5, DTL, KIAA0101	4.11E-04	1.17E-03
3682	DLGAP5, DTL, KIF11	3.21E-05	2.05E-04
3683	DLGAP5, DTL, KIF20A	1.79E-04	7.48E-04
3684	DLGAP5, DTL, MCM10	5.99E-04	2.59E-03
3685	DLGAP5, DTL, NUSAP1	5.53E-04	2.50E-03
3686	DLGAP5, DTL, ORC6L	1.28E-04	4.02E-04
3687	DLGAP5, DTL, PBK	3.78E-05	2.72E-04
3688	DLGAP5, DTL, PLK1	3.05E-04	1.36E-03
3689	DLGAP5, DTL, PRC1	3.66E-04	1.36E-03
3690	DLGAP5, DTL, PTTG1	4.37E-05	3.12E-04
3691	DLGAP5, DTL, RAD51	1.75E-04	5.69E-04
3692	DLGAP5, DTL, RAD54L	9.05E-05	2.30E-04
3693	DLGAP5, DTL, RRM2	6.40E-05	3.59E-04

3694	DLGAP5, DTL, TK1	4.48E-04	2.30E-03
3695	DLGAP5, DTL, TOP2A	2.93E-04	8.02E-04
3696	DLGAP5, FOXM1, KIAA0101	5.44E-04	2.14E-03
3697	DLGAP5, FOXM1, KIF11	6.99E-05	5.51E-04
3698	DLGAP5, FOXM1, KIF20A	2.85E-04	1.56E-03
3699	DLGAP5, FOXM1, MCM10	8.92E-04	4.65E-03
3700	DLGAP5, FOXM1, NUSAP1	7.98E-04	4.49E-03
3701	DLGAP5, FOXM1, ORC6L	2.19E-04	9.54E-04
3702	DLGAP5, FOXM1, PBK	9.65E-05	8.10E-04
3703	DLGAP5, FOXM1, PLK1	4.92E-04	2.66E-03
3704	DLGAP5, FOXM1, PRC1	5.63E-04	2.73E-03
3705	DLGAP5, FOXM1, PTTG1	9.25E-05	7.91E-04
3706	DLGAP5, FOXM1, RAD51	2.62E-04	1.17E-03
3707	DLGAP5, FOXM1, RAD54L	1.46E-04	5.45E-04
3708	DLGAP5, FOXM1, RRM2	1.53E-04	1.07E-03
3709	DLGAP5, FOXM1, TK1	6.50E-04	4.11E-03
3710	DLGAP5, FOXM1, TOP2A	4.25E-04	1.57E-03
3711	DLGAP5, KIAA0101, KIF11	1.38E-04	7.66E-04
3712	DLGAP5, KIAA0101, KIF20A	5.78E-04	2.24E-03
3713	DLGAP5, KIAA0101, MCM10	1.52E-03	5.94E-03
3714	DLGAP5, KIAA0101, NUSAP1	1.37E-03	5.63E-03
3715	DLGAP5, KIAA0101, ORC6L	4.74E-04	1.44E-03
3716	DLGAP5, KIAA0101, PBK	1.75E-04	1.05E-03
3717	DLGAP5, KIAA0101, PLK1	6.48E-04	2.61E-03
3718	DLGAP5, KIAA0101, PRC1	1.06E-03	3.68E-03
3719	DLGAP5, KIAA0101, PTTG1	1.74E-04	1.05E-03
3720	DLGAP5, KIAA0101, RAD51	5.51E-04	1.71E-03
3721	DLGAP5, KIAA0101, RAD54L	2.85E-04	7.60E-04
3722	DLGAP5, KIAA0101, RRM2	2.48E-04	1.25E-03
3723	DLGAP5, KIAA0101, TK1	1.25E-03	5.47E-03
3724	DLGAP5, KIAA0101, TOP2A	7.77E-04	2.03E-03
3725	DLGAP5, KIF11, KIF20A	5.16E-05	4.28E-04
3726	DLGAP5, KIF11, MCM10	2.03E-04	1.59E-03
3727	DLGAP5, KIF11, NUSAP1	1.78E-04	1.53E-03
3728	DLGAP5, KIF11, ORC6L	4.52E-05	2.88E-04
3729	DLGAP5, KIF11, PBK	2.00E-05	2.32E-04
3730	DLGAP5, KIF11, PLK1	9.79E-05	7.91E-04
3731	DLGAP5, KIF11, PRC1	1.11E-04	8.35E-04
3732	DLGAP5, KIF11, PTTG1	2.45E-05	3.08E-04
3733	DLGAP5, KIF11, RAD51	5.72E-05	3.70E-04
3734	DLGAP5, KIF11, RAD54L	2.71E-05	1.52E-04
3735	DLGAP5, KIF11, RRM2	2.34E-05	2.55E-04
3736	DLGAP5, KIF11, TK1	1.30E-04	1.25E-03
3737	DLGAP5, KIF11, TOP2A	1.05E-04	5.38E-04
3738	DLGAP5, KIF20A, MCM10	8.45E-04	4.44E-03
3739	DLGAP5, KIF20A, NUSAP1	7.34E-04	4.48E-03
3740	DLGAP5, KIF20A, ORC6L	2.09E-04	9.22E-04
3741	DLGAP5, KIF20A, PBK	7.52E-05	6.45E-04
3742	DLGAP5, KIF20A, PLK1	3.30E-04	1.90E-03
3743	DLGAP5, KIF20A, PRC1	5.46E-04	2.68E-03
3744	DLGAP5, KIF20A, PTTG1	9.15E-05	7.79E-04
3745	DLGAP5, KIF20A, RAD51	2.51E-04	1.10E-03
3746	DLGAP5, KIF20A, RAD54L	1.44E-04	5.41E-04
3747	DLGAP5, KIF20A, RRM2	1.21E-04	9.00E-04
3748	DLGAP5, KIF20A, TK1	6.36E-04	3.92E-03
3749	DLGAP5, KIF20A, TOP2A	3.58E-04	1.31E-03
3750	DLGAP5, MCM10, NUSAP1	1.74E-03	9.62E-03
3751	DLGAP5, MCM10, ORC6L	6.14E-04	2.66E-03
3752	DLGAP5, MCM10, PBK	2.97E-04	2.35E-03
3753	DLGAP5, MCM10, PLK1	9.43E-04	5.23E-03
3754	DLGAP5, MCM10, PRC1	1.59E-03	7.35E-03
3755	DLGAP5, MCM10, PTTG1	3.24E-04	2.57E-03
3756	DLGAP5, MCM10, RAD51	8.19E-04	3.58E-03
3757	DLGAP5, MCM10, RAD54L	4.57E-04	1.76E-03
3758	DLGAP5, MCM10, RRM2	4.45E-04	2.96E-03
3759	DLGAP5, MCM10, TK1	1.85E-03	1.04E-02
3760	DLGAP5, MCM10, TOP2A	8.98E-04	3.45E-03
3761	DLGAP5, NUSAP1, ORC6L	4.83E-04	2.35E-03
3762	DLGAP5, NUSAP1, PBK	2.00E-04	1.83E-03
3763	DLGAP5, NUSAP1, PLK1	1.16E-03	6.69E-03
3764	DLGAP5, NUSAP1, PRC1	1.24E-03	6.59E-03

3765	DLGAP5, NUSAP1, PTTG1	2.28E-04	2.17E-03
3766	DLGAP5, NUSAP1, RAD51	6.45E-04	3.07E-03
3767	DLGAP5, NUSAP1, RAD54L	3.47E-04	1.49E-03
3768	DLGAP5, NUSAP1, RRM2	3.61E-04	2.80E-03
3769	DLGAP5, NUSAP1, TK1	1.47E-03	9.67E-03
3770	DLGAP5, NUSAP1, TOP2A	1.15E-03	4.27E-03
3771	DLGAP5, ORC6L, PBK	6.94E-05	4.72E-04
3772	DLGAP5, ORC6L, PLK1	2.95E-04	1.34E-03
3773	DLGAP5, ORC6L, PRC1	4.29E-04	1.60E-03
3774	DLGAP5, ORC6L, PTTG1	5.31E-05	3.65E-04
3775	DLGAP5, ORC6L, RAD51	1.95E-04	6.49E-04
3776	DLGAP5, ORC6L, RAD54L	1.11E-04	3.03E-04
3777	DLGAP5, ORC6L, RRM2	9.27E-05	5.34E-04
3778	DLGAP5, ORC6L, TK1	4.79E-04	2.44E-03
3779	DLGAP5, ORC6L, TOP2A	2.59E-04	7.65E-04
3780	DLGAP5, PBK, PLK1	9.68E-05	8.37E-04
3781	DLGAP5, PBK, PRC1	1.62E-04	1.25E-03
3782	DLGAP5, PBK, PTTG1	2.51E-05	3.56E-04
3783	DLGAP5, PBK, RAD51	8.20E-05	5.77E-04
3784	DLGAP5, PBK, RAD54L	4.27E-05	2.54E-04
3785	DLGAP5, PBK, RRM2	3.13E-05	3.83E-04
3786	DLGAP5, PBK, TK1	1.53E-04	1.56E-03
3787	DLGAP5, PBK, TOP2A	1.17E-04	6.47E-04
3788	DLGAP5, PLK1, PRC1	6.37E-04	3.28E-03
3789	DLGAP5, PLK1, PTTG1	1.35E-04	1.18E-03
3790	DLGAP5, PLK1, RAD51	3.14E-04	1.46E-03
3791	DLGAP5, PLK1, RAD54L	1.88E-04	7.35E-04
3792	DLGAP5, PLK1, RRM2	1.91E-04	1.35E-03
3793	DLGAP5, PLK1, TK1	8.12E-04	5.41E-03
3794	DLGAP5, PLK1, TOP2A	6.71E-04	2.54E-03
3795	DLGAP5, PRC1, PTTG1	1.65E-04	1.28E-03
3796	DLGAP5, PRC1, RAD51	4.96E-04	1.94E-03
3797	DLGAP5, PRC1, RAD54L	3.02E-04	9.66E-04
3798	DLGAP5, PRC1, RRM2	2.89E-04	1.75E-03
3799	DLGAP5, PRC1, TK1	1.22E-03	6.63E-03
3800	DLGAP5, PRC1, TOP2A	5.00E-04	1.76E-03
3801	DLGAP5, PTTG1, RAD51	7.14E-05	4.94E-04
3802	DLGAP5, PTTG1, RAD54L	3.66E-05	2.09E-04
3803	DLGAP5, PTTG1, RRM2	3.40E-05	4.07E-04
3804	DLGAP5, PTTG1, TK1	2.24E-04	2.23E-03
3805	DLGAP5, PTTG1, TOP2A	1.34E-04	7.29E-04
3806	DLGAP5, RAD51, RAD54L	1.29E-04	3.67E-04
3807	DLGAP5, RAD51, RRM2	1.05E-04	6.21E-04
3808	DLGAP5, RAD51, TK1	6.08E-04	3.09E-03
3809	DLGAP5, RAD51, TOP2A	3.65E-04	1.10E-03
3810	DLGAP5, RAD54L, RRM2	6.16E-05	2.93E-04
3811	DLGAP5, RAD54L, TK1	3.32E-04	1.47E-03
3812	DLGAP5, RAD54L, TOP2A	1.36E-04	3.44E-04
3813	DLGAP5, RRM2, TK1	3.34E-04	2.67E-03
3814	DLGAP5, RRM2, TOP2A	1.64E-04	8.05E-04
3815	DLGAP5, TK1, TOP2A	7.10E-04	3.26E-03
3816	DTL, FOXM1, KIAA0101	4.91E-04	2.03E-03
3817	DTL, FOXM1, KIF11	3.01E-05	3.17E-04
3818	DTL, FOXM1, KIF20A	2.17E-04	1.39E-03
3819	DTL, FOXM1, MCM10	8.85E-04	5.15E-03
3820	DTL, FOXM1, NUSAP1	9.64E-04	6.11E-03
3821	DTL, FOXM1, ORC6L	1.61E-04	7.89E-04
3822	DTL, FOXM1, PBK	5.81E-05	6.29E-04
3823	DTL, FOXM1, PLK1	5.76E-04	3.49E-03
3824	DTL, FOXM1, PRC1	5.42E-04	2.87E-03
3825	DTL, FOXM1, PTTG1	5.59E-05	6.36E-04
3826	DTL, FOXM1, RAD51	2.03E-04	1.01E-03
3827	DTL, FOXM1, RAD54L	1.08E-04	4.24E-04
3828	DTL, FOXM1, RRM2	1.29E-04	1.05E-03
3829	DTL, FOXM1, TK1	6.52E-04	4.86E-03
3830	DTL, FOXM1, TOP2A	4.24E-04	1.71E-03
3831	DTL, KIAA0101, KIF11	6.10E-05	4.05E-04
3832	DTL, KIAA0101, KIF20A	4.87E-04	1.99E-03
3833	DTL, KIAA0101, MCM10	1.58E-03	6.43E-03
3834	DTL, KIAA0101, NUSAP1	1.68E-03	7.26E-03
3835	DTL, KIAA0101, ORC6L	3.81E-04	1.15E-03

3836	DTL, KIAA0101, PBK	1.07E-04	7.61E-04
3837	DTL, KIAA0101, PLK1	6.60E-04	2.85E-03
3838	DTL, KIAA0101, PRC1	1.09E-03	3.77E-03
3839	DTL, KIAA0101, PTTG1	1.02E-04	7.50E-04
3840	DTL, KIAA0101, RAD51	4.72E-04	1.46E-03
3841	DTL, KIAA0101, RAD54L	2.21E-04	5.58E-04
3842	DTL, KIAA0101, RRM2	1.96E-04	1.06E-03
3843	DTL, KIAA0101, TK1	1.34E-03	6.25E-03
3844	DTL, KIAA0101, TOP2A	7.55E-04	1.94E-03
3845	DTL, KIF11, KIF20A	1.45E-05	1.75E-04
3846	DTL, KIF11, MCM10	9.99E-05	1.04E-03
3847	DTL, KIF11, NUSAP1	1.03E-04	1.25E-03
3848	DTL, KIF11, ORC6L	1.22E-05	1.06E-04
3849	DTL, KIF11, PBK	4.77E-06	8.79E-05
3850	DTL, KIF11, PLK1	5.63E-05	6.13E-04
3851	DTL, KIF11, PRC1	4.27E-05	4.29E-04
3852	DTL, KIF11, PTTG1	5.14E-06	1.14E-04
3853	DTL, KIF11, RAD51	1.60E-05	1.39E-04
3854	DTL, KIF11, RAD54L	7.24E-06	5.11E-05
3855	DTL, KIF11, RRM2	7.20E-06	1.11E-04
3856	DTL, KIF11, TK1	5.50E-05	7.95E-04
3857	DTL, KIF11, TOP2A	6.04E-05	3.71E-04
3858	DTL, KIF20A, MCM10	7.46E-04	4.49E-03
3859	DTL, KIF20A, NUSAP1	7.88E-04	5.75E-03
3860	DTL, KIF20A, ORC6L	1.29E-04	6.51E-04
3861	DTL, KIF20A, PBK	3.50E-05	4.06E-04
3862	DTL, KIF20A, PLK1	2.82E-04	1.95E-03
3863	DTL, KIF20A, PRC1	4.67E-04	2.55E-03
3864	DTL, KIF20A, PTTG1	4.54E-05	5.31E-04
3865	DTL, KIF20A, RAD51	1.64E-04	8.02E-04
3866	DTL, KIF20A, RAD54L	9.19E-05	3.69E-04
3867	DTL, KIF20A, RRM2	7.94E-05	7.28E-04
3868	DTL, KIF20A, TK1	5.57E-04	4.11E-03
3869	DTL, KIF20A, TOP2A	2.80E-04	1.12E-03
3870	DTL, MCM10, NUSAP1	2.05E-03	1.28E-02
3871	DTL, MCM10, ORC6L	4.92E-04	2.37E-03
3872	DTL, MCM10, PBK	2.03E-04	2.03E-03
3873	DTL, MCM10, PLK1	9.72E-04	6.22E-03
3874	DTL, MCM10, PRC1	1.71E-03	8.50E-03
3875	DTL, MCM10, PTTG1	2.26E-04	2.32E-03
3876	DTL, MCM10, RAD51	7.37E-04	3.53E-03
3877	DTL, MCM10, RAD54L	3.76E-04	1.54E-03
3878	DTL, MCM10, RRM2	3.91E-04	3.02E-03
3879	DTL, MCM10, TK1	2.08E-03	1.31E-02
3880	DTL, MCM10, TOP2A	8.24E-04	3.45E-03
3881	DTL, NUSAP1, ORC6L	4.62E-04	2.60E-03
3882	DTL, NUSAP1, PBK	1.49E-04	1.81E-03
3883	DTL, NUSAP1, PLK1	1.77E-03	1.13E-02
3884	DTL, NUSAP1, PRC1	1.56E-03	9.19E-03
3885	DTL, NUSAP1, PTTG1	1.95E-04	2.53E-03
3886	DTL, NUSAP1, RAD51	6.79E-04	3.66E-03
3887	DTL, NUSAP1, RAD54L	3.43E-04	1.64E-03
3888	DTL, NUSAP1, RRM2	4.08E-04	3.76E-03
3889	DTL, NUSAP1, TK1	1.91E-03	1.45E-02
3890	DTL, NUSAP1, TOP2A	1.51E-03	5.98E-03
3891	DTL, ORC6L, PBK	3.19E-05	2.82E-04
3892	DTL, ORC6L, PLK1	2.64E-04	1.38E-03
3893	DTL, ORC6L, PRC1	3.50E-04	1.35E-03
3894	DTL, ORC6L, PTTG1	2.00E-05	1.88E-04
3895	DTL, ORC6L, RAD51	1.22E-04	4.25E-04
3896	DTL, ORC6L, RAD54L	6.79E-05	1.84E-04
3897	DTL, ORC6L, RRM2	5.82E-05	3.96E-04
3898	DTL, ORC6L, TK1	3.95E-04	2.35E-03
3899	DTL, ORC6L, TOP2A	2.05E-04	6.51E-04
3900	DTL, PBK, PLK1	6.20E-05	7.05E-04
3901	DTL, PBK, PRC1	9.59E-05	9.32E-04
3902	DTL, PBK, PTTG1	7.75E-06	1.80E-04
3903	DTL, PBK, RAD51	3.88E-05	3.54E-04
3904	DTL, PBK, RAD54L	1.84E-05	1.34E-04
3905	DTL, PBK, RRM2	1.46E-05	2.52E-04
3906	DTL, PBK, TK1	8.99E-05	1.27E-03

3907	DTL, PBK, TOP2A	7.18E-05	4.80E-04
3908	DTL, PLK1, PRC1	6.80E-04	3.95E-03
3909	DTL, PLK1, PTTG1	1.16E-04	1.33E-03
3910	DTL, PLK1, RAD51	2.82E-04	1.51E-03
3911	DTL, PLK1, RAD54L	1.68E-04	7.22E-04
3912	DTL, PLK1, RRM2	1.97E-04	1.63E-03
3913	DTL, PLK1, TK1	9.59E-04	7.62E-03
3914	DTL, PLK1, TOP2A	8.92E-04	3.67E-03
3915	DTL, PRC1, PTTG1	1.00E-04	1.00E-03
3916	DTL, PRC1, RAD51	4.16E-04	1.71E-03
3917	DTL, PRC1, RAD54L	2.54E-04	7.92E-04
3918	DTL, PRC1, RRM2	2.57E-04	1.73E-03
3919	DTL, PRC1, TK1	1.33E-03	8.09E-03
3920	DTL, PRC1, TOP2A	4.35E-04	1.62E-03
3921	DTL, PTTG1, RAD51	3.17E-05	2.90E-04
3922	DTL, PTTG1, RAD54L	1.60E-05	1.11E-04
3923	DTL, PTTG1, RRM2	1.75E-05	2.86E-04
3924	DTL, PTTG1, TK1	1.57E-04	2.18E-03
3925	DTL, PTTG1, TOP2A	9.74E-05	6.46E-04
3926	DTL, RAD51, RAD54L	8.16E-05	2.27E-04
3927	DTL, RAD51, RRM2	6.84E-05	4.70E-04
3928	DTL, RAD51, TK1	5.45E-04	3.17E-03
3929	DTL, RAD51, TOP2A	3.01E-04	9.56E-04
3930	DTL, RAD54L, RRM2	3.96E-05	2.03E-04
3931	DTL, RAD54L, TK1	2.81E-04	1.37E-03
3932	DTL, RAD54L, TOP2A	9.97E-05	2.55E-04
3933	DTL, RRM2, TK1	3.18E-04	3.03E-03
3934	DTL, RRM2, TOP2A	1.46E-04	7.94E-04
3935	DTL, TK1, TOP2A	7.32E-04	3.83E-03
3936	FOXM1, KIAA0101, KIF11	1.45E-04	1.20E-03
3937	FOXM1, KIAA0101, KIF20A	7.00E-04	3.77E-03
3938	FOXM1, KIAA0101, MCM10	2.08E-03	1.03E-02
3939	FOXM1, KIAA0101, NUSAP1	2.05E-03	1.10E-02
3940	FOXM1, KIAA0101, ORC6L	5.80E-04	2.48E-03
3941	FOXM1, KIAA0101, PBK	2.46E-04	2.02E-03
3942	FOXM1, KIAA0101, PLK1	1.01E-03	5.40E-03
3943	FOXM1, KIAA0101, PRC1	1.46E-03	6.68E-03
3944	FOXM1, KIAA0101, PTTG1	2.11E-04	1.86E-03
3945	FOXM1, KIAA0101, RAD51	6.40E-04	2.79E-03
3946	FOXM1, KIAA0101, RAD54L	3.34E-04	1.27E-03
3947	FOXM1, KIAA0101, RRM2	4.02E-04	2.74E-03
3948	FOXM1, KIAA0101, TK1	1.69E-03	9.87E-03
3949	FOXM1, KIAA0101, TOP2A	9.98E-04	3.62E-03
3950	FOXM1, KIF11, KIF20A	5.27E-05	6.91E-04
3951	FOXM1, KIF11, MCM10	2.78E-04	2.94E-03
3952	FOXM1, KIF11, NUSAP1	2.52E-04	3.14E-03
3953	FOXM1, KIF11, ORC6L	4.77E-05	4.75E-04
3954	FOXM1, KIF11, PBK	2.59E-05	4.46E-04
3955	FOXM1, KIF11, PLK1	1.64E-04	1.79E-03
3956	FOXM1, KIF11, PRC1	1.41E-04	1.54E-03
3957	FOXM1, KIF11, PTTG1	2.41E-05	5.04E-04
3958	FOXM1, KIF11, RAD51	5.37E-05	5.48E-04
3959	FOXM1, KIF11, RAD54L	2.69E-05	2.38E-04
3960	FOXM1, KIF11, RRM2	4.01E-05	6.25E-04
3961	FOXM1, KIF11, TK1	1.62E-04	2.34E-03
3962	FOXM1, KIF11, TOP2A	1.40E-04	1.04E-03
3963	FOXM1, KIF20A, MCM10	1.19E-03	8.05E-03
3964	FOXM1, KIF20A, NUSAP1	1.17E-03	9.39E-03
3965	FOXM1, KIF20A, ORC6L	2.62E-04	1.70E-03
3966	FOXM1, KIF20A, PBK	1.10E-04	1.33E-03
3967	FOXM1, KIF20A, PLK1	5.51E-04	4.25E-03
3968	FOXM1, KIF20A, PRC1	7.76E-04	5.16E-03
3969	FOXM1, KIF20A, PTTG1	1.17E-04	1.48E-03
3970	FOXM1, KIF20A, RAD51	2.93E-04	1.88E-03
3971	FOXM1, KIF20A, RAD54L	1.72E-04	9.57E-04
3972	FOXM1, KIF20A, RRM2	2.16E-04	2.18E-03
3973	FOXM1, KIF20A, TK1	8.89E-04	7.50E-03
3974	FOXM1, KIF20A, TOP2A	4.77E-04	2.49E-03
3975	FOXM1, MCM10, NUSAP1	2.91E-03	1.93E-02
3976	FOXM1, MCM10, ORC6L	8.83E-04	5.04E-03
3977	FOXM1, MCM10, PBK	4.82E-04	4.81E-03

3978	FOXM1, MCM10, PLK1	1.67E-03	1.13E-02
3979	FOXM1, MCM10, PRC1	2.46E-03	1.40E-02
3980	FOXM1, MCM10, PTTG1	4.95E-04	5.14E-03
3981	FOXM1, MCM10, RAD51	1.13E-03	6.46E-03
3982	FOXM1, MCM10, RAD54L	6.38E-04	3.26E-03
3983	FOXM1, MCM10, RRM2	8.22E-04	6.68E-03
3984	FOXM1, MCM10, TK1	2.84E-03	1.95E-02
3985	FOXM1, MCM10, TOP2A	1.33E-03	6.65E-03
3986	FOXM1, NUSAP1, ORC6L	7.97E-04	5.27E-03
3987	FOXM1, NUSAP1, PBK	3.78E-04	4.41E-03
3988	FOXM1, NUSAP1, PLK1	2.41E-03	1.66E-02
3989	FOXM1, NUSAP1, PRC1	2.23E-03	1.47E-02
3990	FOXM1, NUSAP1, PTTG1	4.19E-04	5.36E-03
3991	FOXM1, NUSAP1, RAD51	1.01E-03	6.55E-03
3992	FOXM1, NUSAP1, RAD54L	5.55E-04	3.31E-03
3993	FOXM1, NUSAP1, RRM2	8.15E-04	7.65E-03
3994	FOXM1, NUSAP1, TK1	2.58E-03	2.10E-02
3995	FOXM1, NUSAP1, TOP2A	1.89E-03	9.33E-03
3996	FOXM1, ORC6L, PBK	1.07E-04	1.03E-03
3997	FOXM1, ORC6L, PLK1	5.21E-04	3.19E-03
3998	FOXM1, ORC6L, PRC1	6.26E-04	3.23E-03
3999	FOXM1, ORC6L, PTTG1	6.81E-05	7.22E-04
4000	FOXM1, ORC6L, RAD51	2.32E-04	1.15E-03
4001	FOXM1, ORC6L, RAD54L	1.35E-04	5.56E-04
4002	FOXM1, ORC6L, RRM2	1.77E-04	1.42E-03
4003	FOXM1, ORC6L, TK1	6.83E-04	4.90E-03
4004	FOXM1, ORC6L, TOP2A	3.66E-04	1.57E-03
4005	FOXM1, PBK, PLK1	1.98E-04	2.21E-03
4006	FOXM1, PBK, PRC1	2.76E-04	2.80E-03
4007	FOXM1, PBK, PTTG1	4.05E-05	8.24E-04
4008	FOXM1, PBK, RAD51	1.15E-04	1.16E-03
4009	FOXM1, PBK, RAD54L	6.12E-05	5.32E-04
4010	FOXM1, PBK, RRM2	7.16E-05	1.13E-03
4011	FOXM1, PBK, TK1	2.55E-04	3.48E-03
4012	FOXM1, PBK, TOP2A	1.87E-04	1.44E-03
4013	FOXM1, PLK1, PRC1	1.22E-03	7.93E-03
4014	FOXM1, PLK1, PTTG1	2.71E-04	3.08E-03
4015	FOXM1, PLK1, RAD51	5.18E-04	3.27E-03
4016	FOXM1, PLK1, RAD54L	3.18E-04	1.71E-03
4017	FOXM1, PLK1, RRM2	4.76E-04	4.16E-03
4018	FOXM1, PLK1, TK1	1.52E-03	1.27E-02
4019	FOXM1, PLK1, TOP2A	1.20E-03	5.90E-03
4020	FOXM1, PRC1, PTTG1	2.55E-04	2.75E-03
4021	FOXM1, PRC1, RAD51	6.82E-04	3.68E-03
4022	FOXM1, PRC1, RAD54L	4.24E-04	1.89E-03
4023	FOXM1, PRC1, RRM2	5.74E-04	4.45E-03
4024	FOXM1, PRC1, TK1	1.92E-03	1.35E-02
4025	FOXM1, PRC1, TOP2A	7.54E-04	3.67E-03
4026	FOXM1, PTTG1, RAD51	8.44E-05	8.94E-04
4027	FOXM1, PTTG1, RAD54L	4.49E-05	3.96E-04
4028	FOXM1, PTTG1, RRM2	7.32E-05	1.17E-03
4029	FOXM1, PTTG1, TK1	3.44E-04	4.78E-03
4030	FOXM1, PTTG1, TOP2A	2.03E-04	1.58E-03
4031	FOXM1, RAD51, RAD54L	1.47E-04	6.17E-04
4032	FOXM1, RAD51, RRM2	1.82E-04	1.50E-03
4033	FOXM1, RAD51, TK1	8.19E-04	5.82E-03
4034	FOXM1, RAD51, TOP2A	4.76E-04	2.05E-03
4035	FOXM1, RAD54L, RRM2	1.09E-04	7.38E-04
4036	FOXM1, RAD54L, TK1	4.55E-04	2.87E-03
4037	FOXM1, RAD54L, TOP2A	1.79E-04	6.69E-04
4038	FOXM1, RRM2, TK1	6.60E-04	6.67E-03
4039	FOXM1, RRM2, TOP2A	3.20E-04	2.13E-03
4040	FOXM1, TK1, TOP2A	1.08E-03	6.76E-03
4041	KIAA0101, KIF11, KIF20A	1.12E-04	1.01E-03
4042	KIAA0101, KIF11, MCM10	4.92E-04	3.83E-03
4043	KIAA0101, KIF11, NUSAP1	4.39E-04	3.94E-03
4044	KIAA0101, KIF11, ORC6L	9.43E-05	6.33E-04
4045	KIAA0101, KIF11, PBK	4.36E-05	5.46E-04
4046	KIAA0101, KIF11, PLK1	1.75E-04	1.50E-03
4047	KIAA0101, KIF11, PRC1	2.71E-04	2.07E-03
4048	KIAA0101, KIF11, PTTG1	4.03E-05	6.05E-04

4049	KIAA0101, KIF11, RAD51	1.17E-04	8.02E-04
4050	KIAA0101, KIF11, RAD54L	5.26E-05	3.22E-04
4051	KIAA0101, KIF11, RRM2	5.62E-05	6.45E-04
4052	KIAA0101, KIF11, TK1	3.20E-04	3.09E-03
4053	KIAA0101, KIF11, TOP2A	2.22E-04	1.12E-03
4054	KIAA0101, KIF20A, MCM10	2.11E-03	1.04E-02
4055	KIAA0101, KIF20A, NUSAP1	2.10E-03	1.19E-02
4056	KIAA0101, KIF20A, ORC6L	6.00E-04	2.61E-03
4057	KIAA0101, KIF20A, PBK	2.10E-04	1.77E-03
4058	KIAA0101, KIF20A, PLK1	7.48E-04	4.31E-03
4059	KIAA0101, KIF20A, PRC1	1.54E-03	7.09E-03
4060	KIAA0101, KIF20A, PTTG1	2.35E-04	2.04E-03
4061	KIAA0101, KIF20A, RAD51	6.69E-04	2.86E-03
4062	KIAA0101, KIF20A, RAD54L	3.61E-04	1.39E-03
4063	KIAA0101, KIF20A, RRM2	3.61E-04	2.60E-03
4064	KIAA0101, KIF20A, TK1	1.78E-03	1.01E-02
4065	KIAA0101, KIF20A, TOP2A	9.01E-04	3.27E-03
4066	KIAA0101, MCM10, NUSAP1	4.50E-03	2.27E-02
4067	KIAA0101, MCM10, ORC6L	1.69E-03	6.95E-03
4068	KIAA0101, MCM10, PBK	7.80E-04	5.79E-03
4069	KIAA0101, MCM10, PLK1	2.14E-03	1.14E-02
4070	KIAA0101, MCM10, PRC1	4.08E-03	1.72E-02
4071	KIAA0101, MCM10, PTTG1	8.28E-04	6.31E-03
4072	KIAA0101, MCM10, RAD51	2.05E-03	8.45E-03
4073	KIAA0101, MCM10, RAD54L	1.10E-03	4.16E-03
4074	KIAA0101, MCM10, RRM2	1.21E-03	7.48E-03
4075	KIAA0101, MCM10, TK1	4.72E-03	2.37E-02
4076	KIAA0101, MCM10, TOP2A	2.27E-03	8.42E-03
4077	KIAA0101, NUSAP1, ORC6L	1.50E-03	7.01E-03
4078	KIAA0101, NUSAP1, PBK	5.95E-04	5.15E-03
4079	KIAA0101, NUSAP1, PLK1	2.81E-03	1.56E-02
4080	KIAA0101, NUSAP1, PRC1	3.70E-03	1.77E-02
4081	KIAA0101, NUSAP1, PTTG1	6.64E-04	6.23E-03
4082	KIAA0101, NUSAP1, RAD51	1.85E-03	8.44E-03
4083	KIAA0101, NUSAP1, RAD54L	9.44E-04	4.08E-03
4084	KIAA0101, NUSAP1, RRM2	1.14E-03	8.16E-03
4085	KIAA0101, NUSAP1, TK1	4.35E-03	2.51E-02
4086	KIAA0101, NUSAP1, TOP2A	3.06E-03	1.11E-02
4087	KIAA0101, ORC6L, PBK	2.06E-04	1.38E-03
4088	KIAA0101, ORC6L, PLK1	7.04E-04	3.14E-03
4089	KIAA0101, ORC6L, PRC1	1.31E-03	4.65E-03
4090	KIAA0101, ORC6L, PTTG1	1.44E-04	1.01E-03
4091	KIAA0101, ORC6L, RAD51	5.63E-04	1.83E-03
4092	KIAA0101, ORC6L, RAD54L	2.98E-04	8.32E-04
4093	KIAA0101, ORC6L, RRM2	2.96E-04	1.67E-03
4094	KIAA0101, ORC6L, TK1	1.47E-03	6.93E-03
4095	KIAA0101, ORC6L, TOP2A	6.74E-04	1.93E-03
4096	KIAA0101, PBK, PLK1	2.26E-04	1.97E-03
4097	KIAA0101, PBK, PRC1	4.83E-04	3.48E-03
4098	KIAA0101, PBK, PTTG1	6.62E-05	9.69E-04
4099	KIAA0101, PBK, RAD51	2.25E-04	1.55E-03
4100	KIAA0101, PBK, RAD54L	1.10E-04	6.71E-04
4101	KIAA0101, PBK, RRM2	9.88E-05	1.17E-03
4102	KIAA0101, PBK, TK1	4.64E-04	4.33E-03
4103	KIAA0101, PBK, TOP2A	3.06E-04	1.68E-03
4104	KIAA0101, PLK1, PRC1	1.56E-03	7.68E-03
4105	KIAA0101, PLK1, PTTG1	2.60E-04	2.41E-03
4106	KIAA0101, PLK1, RAD51	7.02E-04	3.20E-03
4107	KIAA0101, PLK1, RAD54L	3.90E-04	1.55E-03
4108	KIAA0101, PLK1, RRM2	4.55E-04	3.21E-03
4109	KIAA0101, PLK1, TK1	1.98E-03	1.24E-02
4110	KIAA0101, PLK1, TOP2A	1.45E-03	5.31E-03
4111	KIAA0101, PRC1, PTTG1	4.71E-04	3.52E-03
4112	KIAA0101, PRC1, RAD51	1.40E-03	5.16E-03
4113	KIAA0101, PRC1, RAD54L	8.10E-04	2.54E-03
4114	KIAA0101, PRC1, RRM2	8.90E-04	5.02E-03
4115	KIAA0101, PRC1, TK1	3.56E-03	1.72E-02
4116	KIAA0101, PRC1, TOP2A	1.37E-03	4.63E-03
4117	KIAA0101, PTTG1, RAD51	1.78E-04	1.25E-03
4118	KIAA0101, PTTG1, RAD54L	8.27E-05	5.05E-04
4119	KIAA0101, PTTG1, RRM2	9.53E-05	1.15E-03

4120	KIAA0101, PTTG1, TK1	6.37E-04	5.97E-03
4121	KIAA0101, PTTG1, TOP2A	3.08E-04	1.69E-03
4122	KIAA0101, RAD51, RAD54L	3.17E-04	9.05E-04
4123	KIAA0101, RAD51, RRM2	3.13E-04	1.78E-03
4124	KIAA0101, RAD51, TK1	1.71E-03	8.00E-03
4125	KIAA0101, RAD51, TOP2A	9.29E-04	2.70E-03
4126	KIAA0101, RAD54L, RRM2	1.70E-04	8.22E-04
4127	KIAA0101, RAD54L, TK1	8.94E-04	3.79E-03
4128	KIAA0101, RAD54L, TOP2A	3.25E-04	8.23E-04
4129	KIAA0101, RRM2, TK1	1.03E-03	7.45E-03
4130	KIAA0101, RRM2, TOP2A	4.50E-04	2.16E-03
4131	KIAA0101, TK1, TOP2A	1.97E-03	8.46E-03
4132	KIF11, KIF20A, MCM10	1.94E-04	2.32E-03
4133	KIF11, KIF20A, NUSAP1	1.72E-04	2.69E-03
4134	KIF11, KIF20A, ORC6L	2.72E-05	3.18E-04
4135	KIF11, KIF20A, PBK	1.38E-05	2.81E-04
4136	KIF11, KIF20A, PLK1	6.13E-05	8.68E-04
4137	KIF11, KIF20A, PRC1	9.26E-05	1.18E-03
4138	KIF11, KIF20A, PTTG1	1.46E-05	3.55E-04
4139	KIF11, KIF20A, RAD51	3.24E-05	3.68E-04
4140	KIF11, KIF20A, RAD54L	1.72E-05	1.75E-04
4141	KIF11, KIF20A, RRM2	1.90E-05	3.76E-04
4142	KIF11, KIF20A, TK1	1.09E-04	1.73E-03
4143	KIF11, KIF20A, TOP2A	7.24E-05	5.88E-04
4144	KIF11, MCM10, NUSAP1	5.77E-04	6.88E-03
4145	KIF11, MCM10, ORC6L	1.59E-04	1.52E-03
4146	KIF11, MCM10, PBK	7.76E-05	1.26E-03
4147	KIF11, MCM10, PLK1	2.91E-04	3.37E-03
4148	KIF11, MCM10, PRC1	4.72E-04	4.65E-03
4149	KIF11, MCM10, PTTG1	9.07E-05	1.71E-03
4150	KIF11, MCM10, RAD51	1.98E-04	1.91E-03
4151	KIF11, MCM10, RAD54L	9.88E-05	8.64E-04
4152	KIF11, MCM10, RRM2	1.28E-04	1.84E-03
4153	KIF11, MCM10, TK1	5.48E-04	6.55E-03
4154	KIF11, MCM10, TOP2A	3.02E-04	2.32E-03
4155	KIF11, NUSAP1, ORC6L	1.24E-04	1.48E-03
4156	KIF11, NUSAP1, PBK	6.00E-05	1.21E-03
4157	KIF11, NUSAP1, PLK1	4.35E-04	5.35E-03
4158	KIF11, NUSAP1, PRC1	3.69E-04	4.66E-03
4159	KIF11, NUSAP1, PTTG1	7.28E-05	1.80E-03
4160	KIF11, NUSAP1, RAD51	1.63E-04	1.89E-03
4161	KIF11, NUSAP1, RAD54L	7.86E-05	8.73E-04
4162	KIF11, NUSAP1, RRM2	1.14E-04	2.07E-03
4163	KIF11, NUSAP1, TK1	4.15E-04	6.51E-03
4164	KIF11, NUSAP1, TOP2A	4.11E-04	3.19E-03
4165	KIF11, ORC6L, PBK	1.18E-05	1.85E-04
4166	KIF11, ORC6L, PLK1	6.53E-05	6.85E-04
4167	KIF11, ORC6L, PRC1	8.06E-05	7.42E-04
4168	KIF11, ORC6L, PTTG1	8.60E-06	1.69E-04
4169	KIF11, ORC6L, RAD51	2.91E-05	2.39E-04
4170	KIF11, ORC6L, RAD54L	1.50E-05	1.06E-04
4171	KIF11, ORC6L, RRM2	1.62E-05	2.34E-04
4172	KIF11, ORC6L, TK1	8.90E-05	1.15E-03
4173	KIF11, ORC6L, TOP2A	6.34E-05	4.16E-04
4174	KIF11, PBK, PLK1	2.90E-05	5.14E-04
4175	KIF11, PBK, PRC1	3.07E-05	5.51E-04
4176	KIF11, PBK, PTTG1	4.32E-06	1.51E-04
4177	KIF11, PBK, RAD51	1.25E-05	2.06E-04
4178	KIF11, PBK, RAD54L	5.59E-06	8.15E-05
4179	KIF11, PBK, RRM2	7.50E-06	2.06E-04
4180	KIF11, PBK, TK1	3.62E-05	8.40E-04
4181	KIF11, PBK, TOP2A	3.38E-05	3.70E-04
4182	KIF11, PLK1, PRC1	1.63E-04	1.94E-03
4183	KIF11, PLK1, PTTG1	4.29E-05	8.84E-04
4184	KIF11, PLK1, RAD51	6.80E-05	7.32E-04
4185	KIF11, PLK1, RAD54L	3.85E-05	3.61E-04
4186	KIF11, PLK1, RRM2	5.55E-05	8.64E-04
4187	KIF11, PLK1, TK1	2.11E-04	3.26E-03
4188	KIF11, PLK1, TOP2A	2.51E-04	1.84E-03
4189	KIF11, PRC1, PTTG1	3.44E-05	7.37E-04
4190	KIF11, PRC1, RAD51	8.68E-05	8.44E-04

4191	KIF11, PRC1, RAD54L	5.00E-05	4.01E-04
4192	KIF11, PRC1, RRM2	6.75E-05	9.76E-04
4193	KIF11, PRC1, TK1	2.78E-04	3.68E-03
4194	KIF11, PRC1, TOP2A	1.31E-04	1.01E-03
4195	KIF11, PTTG1, RAD51	1.18E-05	2.28E-04
4196	KIF11, PTTG1, RAD54L	5.31E-06	8.97E-05
4197	KIF11, PTTG1, RRM2	8.11E-06	2.51E-04
4198	KIF11, PTTG1, TK1	5.22E-05	1.37E-03
4199	KIF11, PTTG1, TOP2A	4.13E-05	5.19E-04
4200	KIF11, RAD51, RAD54L	1.58E-05	1.14E-04
4201	KIF11, RAD51, RRM2	1.82E-05	2.70E-04
4202	KIF11, RAD51, TK1	1.12E-04	1.42E-03
4203	KIF11, RAD51, TOP2A	9.15E-05	5.85E-04
4204	KIF11, RAD54L, RRM2	9.97E-06	1.22E-04
4205	KIF11, RAD54L, TK1	5.42E-05	6.24E-04
4206	KIF11, RAD54L, TOP2A	2.88E-05	1.64E-04
4207	KIF11, RRM2, TK1	7.77E-05	1.49E-03
4208	KIF11, RRM2, TOP2A	4.47E-05	4.72E-04
4209	KIF11, TK1, TOP2A	1.87E-04	1.92E-03
4210	KIF20A, MCM10, NUSAP1	2.64E-03	1.90E-02
4211	KIF20A, MCM10, ORC6L	8.21E-04	4.89E-03
4212	KIF20A, MCM10, PBK	3.75E-04	3.98E-03
4213	KIF20A, MCM10, PLK1	1.15E-03	8.74E-03
4214	KIF20A, MCM10, PRC1	2.33E-03	1.36E-02
4215	KIF20A, MCM10, PTTG1	4.57E-04	4.92E-03
4216	KIF20A, MCM10, RAD51	1.04E-03	6.02E-03
4217	KIF20A, MCM10, RAD54L	5.98E-04	3.16E-03
4218	KIF20A, MCM10, RRM2	6.66E-04	5.89E-03
4219	KIF20A, MCM10, TK1	2.67E-03	1.85E-02
4220	KIF20A, MCM10, TOP2A	1.10E-03	5.76E-03
4221	KIF20A, NUSAP1, ORC6L	7.28E-04	5.49E-03
4222	KIF20A, NUSAP1, PBK	2.85E-04	3.85E-03
4223	KIF20A, NUSAP1, PLK1	1.60E-03	1.35E-02
4224	KIF20A, NUSAP1, PRC1	2.10E-03	1.52E-02
4225	KIF20A, NUSAP1, PTTG1	3.98E-04	5.68E-03
4226	KIF20A, NUSAP1, RAD51	9.02E-04	6.51E-03
4227	KIF20A, NUSAP1, RAD54L	5.29E-04	3.56E-03
4228	KIF20A, NUSAP1, RRM2	6.65E-04	7.26E-03
4229	KIF20A, NUSAP1, TK1	2.40E-03	2.07E-02
4230	KIF20A, NUSAP1, TOP2A	1.51E-03	8.43E-03
4231	KIF20A, ORC6L, PBK	7.62E-05	8.04E-04
4232	KIF20A, ORC6L, PLK1	3.05E-04	2.15E-03
4233	KIF20A, ORC6L, PRC1	5.91E-04	3.21E-03
4234	KIF20A, ORC6L, PTTG1	6.18E-05	7.00E-04
4235	KIF20A, ORC6L, RAD51	2.10E-04	1.06E-03
4236	KIF20A, ORC6L, RAD54L	1.28E-04	5.54E-04
4237	KIF20A, ORC6L, RRM2	1.29E-04	1.18E-03
4238	KIF20A, ORC6L, TK1	6.48E-04	4.68E-03
4239	KIF20A, ORC6L, TOP2A	2.61E-04	1.16E-03
4240	KIF20A, PBK, PLK1	9.38E-05	1.26E-03
4241	KIF20A, PBK, PRC1	2.10E-04	2.30E-03
4242	KIF20A, PBK, PTTG1	2.84E-05	6.29E-04
4243	KIF20A, PBK, RAD51	8.32E-05	8.77E-04
4244	KIF20A, PBK, RAD54L	4.57E-05	4.25E-04
4245	KIF20A, PBK, RRM2	4.18E-05	7.72E-04
4246	KIF20A, PBK, TK1	1.95E-04	2.78E-03
4247	KIF20A, PBK, TOP2A	1.15E-04	9.54E-04
4248	KIF20A, PLK1, PRC1	7.88E-04	5.88E-03
4249	KIF20A, PLK1, PTTG1	1.44E-04	1.97E-03
4250	KIF20A, PLK1, RAD51	2.99E-04	2.09E-03
4251	KIF20A, PLK1, RAD54L	1.96E-04	1.18E-03
4252	KIF20A, PLK1, RRM2	2.36E-04	2.56E-03
4253	KIF20A, PLK1, TK1	9.93E-04	9.31E-03
4254	KIF20A, PLK1, TOP2A	7.00E-04	3.76E-03
4255	KIF20A, PRC1, PTTG1	2.46E-04	2.77E-03
4256	KIF20A, PRC1, RAD51	6.39E-04	3.51E-03
4257	KIF20A, PRC1, RAD54L	4.14E-04	1.93E-03
4258	KIF20A, PRC1, RRM2	4.69E-04	3.98E-03
4259	KIF20A, PRC1, TK1	1.86E-03	1.31E-02
4260	KIF20A, PRC1, TOP2A	5.85E-04	3.02E-03
4261	KIF20A, PTTG1, RAD51	7.71E-05	8.31E-04

4262	KIF20A, PTTG1, RAD54L	4.36E-05	4.03E-04
4263	KIF20A, PTTG1, RRM2	5.26E-05	9.68E-04
4264	KIF20A, PTTG1, TK1	3.27E-04	4.54E-03
4265	KIF20A, PTTG1, TOP2A	1.44E-04	1.19E-03
4266	KIF20A, RAD51, RAD54L	1.37E-04	5.87E-04
4267	KIF20A, RAD51, RRM2	1.34E-04	1.20E-03
4268	KIF20A, RAD51, TK1	7.69E-04	5.36E-03
4269	KIF20A, RAD51, TOP2A	3.54E-04	1.53E-03
4270	KIF20A, RAD54L, RRM2	8.48E-05	6.40E-04
4271	KIF20A, RAD54L, TK1	4.43E-04	2.78E-03
4272	KIF20A, RAD54L, TOP2A	1.37E-04	5.25E-04
4273	KIF20A, RRM2, TK1	5.30E-04	5.73E-03
4274	KIF20A, RRM2, TOP2A	1.98E-04	1.48E-03
4275	KIF20A, TK1, TOP2A	8.76E-04	5.62E-03
4276	MCM10, NUSAP1, ORC6L	1.69E-03	1.07E-02
4277	MCM10, NUSAP1, PBK	8.84E-04	9.53E-03
4278	MCM10, NUSAP1, PLK1	3.47E-03	2.49E-02
4279	MCM10, NUSAP1, PRC1	4.80E-03	2.87E-02
4280	MCM10, NUSAP1, PTTG1	1.05E-03	1.21E-02
4281	MCM10, NUSAP1, RAD51	2.40E-03	1.46E-02
4282	MCM10, NUSAP1, RAD54L	1.32E-03	7.59E-03
4283	MCM10, NUSAP1, RRM2	1.67E-03	1.46E-02
4284	MCM10, NUSAP1, TK1	5.62E-03	3.92E-02
4285	MCM10, NUSAP1, TOP2A	3.04E-03	1.55E-02
4286	MCM10, ORC6L, PBK	3.24E-04	2.87E-03
4287	MCM10, ORC6L, PLK1	9.61E-04	5.96E-03
4288	MCM10, ORC6L, PRC1	1.78E-03	8.52E-03
4289	MCM10, ORC6L, PTTG1	2.64E-04	2.47E-03
4290	MCM10, ORC6L, RAD51	7.56E-04	3.56E-03
4291	MCM10, ORC6L, RAD54L	4.32E-04	1.78E-03
4292	MCM10, ORC6L, RRM2	5.09E-04	3.73E-03
4293	MCM10, ORC6L, TK1	1.99E-03	1.21E-02
4294	MCM10, ORC6L, TOP2A	8.02E-04	3.48E-03
4295	MCM10, PBK, PLK1	4.07E-04	4.55E-03
4296	MCM10, PBK, PRC1	8.74E-04	7.70E-03
4297	MCM10, PBK, PTTG1	1.57E-04	2.72E-03
4298	MCM10, PBK, RAD51	4.05E-04	3.63E-03
4299	MCM10, PBK, RAD54L	2.17E-04	1.76E-03
4300	MCM10, PBK, RRM2	2.22E-04	3.06E-03
4301	MCM10, PBK, TK1	8.44E-04	9.28E-03
4302	MCM10, PBK, TOP2A	4.22E-04	3.25E-03
4303	MCM10, PLK1, PRC1	2.45E-03	1.55E-02
4304	MCM10, PLK1, PTTG1	5.19E-04	6.01E-03
4305	MCM10, PLK1, RAD51	1.10E-03	6.94E-03
4306	MCM10, PLK1, RAD54L	6.55E-04	3.64E-03
4307	MCM10, PLK1, RRM2	8.37E-04	7.40E-03
4308	MCM10, PLK1, TK1	3.04E-03	2.32E-02
4309	MCM10, PLK1, TOP2A	1.66E-03	8.63E-03
4310	MCM10, PRC1, PTTG1	9.66E-04	8.66E-03
4311	MCM10, PRC1, RAD51	2.20E-03	1.08E-02
4312	MCM10, PRC1, RAD54L	1.34E-03	5.74E-03
4313	MCM10, PRC1, RRM2	1.60E-03	1.10E-02
4314	MCM10, PRC1, TK1	5.35E-03	3.08E-02
4315	MCM10, PRC1, TOP2A	1.73E-03	8.33E-03
4316	MCM10, PTTG1, RAD51	3.76E-04	3.45E-03
4317	MCM10, PTTG1, RAD54L	1.94E-04	1.58E-03
4318	MCM10, PTTG1, RRM2	2.53E-04	3.50E-03
4319	MCM10, PTTG1, TK1	1.24E-03	1.33E-02
4320	MCM10, PTTG1, TOP2A	4.57E-04	3.58E-03
4321	MCM10, RAD51, RAD54L	5.49E-04	2.29E-03
4322	MCM10, RAD51, RRM2	6.00E-04	4.43E-03
4323	MCM10, RAD51, TK1	2.62E-03	1.55E-02
4324	MCM10, RAD51, TOP2A	1.11E-03	4.80E-03
4325	MCM10, RAD54L, RRM2	3.49E-04	2.25E-03
4326	MCM10, RAD54L, TK1	1.48E-03	8.14E-03
4327	MCM10, RAD54L, TOP2A	4.22E-04	1.66E-03
4328	MCM10, RRM2, TK1	1.84E-03	1.54E-02
4329	MCM10, RRM2, TOP2A	6.55E-04	4.36E-03
4330	MCM10, TK1, TOP2A	2.43E-03	1.40E-02
4331	NUSAP1, ORC6L, PBK	2.19E-04	2.44E-03
4332	NUSAP1, ORC6L, PLK1	1.25E-03	8.58E-03

4333	NUSAP1, ORC6L, PRC1	1.41E-03	8.30E-03
4334	NUSAP1, ORC6L, PTTG1	1.75E-04	2.25E-03
4335	NUSAP1, ORC6L, RAD51	5.82E-04	3.30E-03
4336	NUSAP1, ORC6L, RAD54L	3.28E-04	1.69E-03
4337	NUSAP1, ORC6L, RRM2	4.31E-04	3.98E-03
4338	NUSAP1, ORC6L, TK1	1.56E-03	1.20E-02
4339	NUSAP1, ORC6L, TOP2A	9.93E-04	4.48E-03
4340	NUSAP1, PBK, PLK1	4.39E-04	5.43E-03
4341	NUSAP1, PBK, PRC1	5.84E-04	6.58E-03
4342	NUSAP1, PBK, PTTG1	9.51E-05	2.22E-03
4343	NUSAP1, PBK, RAD51	2.70E-04	2.99E-03
4344	NUSAP1, PBK, RAD54L	1.41E-04	1.46E-03
4345	NUSAP1, PBK, RRM2	1.62E-04	2.83E-03
4346	NUSAP1, PBK, TK1	5.40E-04	7.89E-03
4347	NUSAP1, PBK, TOP2A	4.68E-04	3.71E-03
4348	NUSAP1, PLK1, PRC1	2.97E-03	2.09E-02
4349	NUSAP1, PLK1, PTTG1	7.51E-04	9.48E-03
4350	NUSAP1, PLK1, RAD51	1.41E-03	9.66E-03
4351	NUSAP1, PLK1, RAD54L	8.33E-04	5.22E-03
4352	NUSAP1, PLK1, RRM2	1.23E-03	1.16E-02
4353	NUSAP1, PLK1, TK1	3.74E-03	3.17E-02
4354	NUSAP1, PLK1, TOP2A	3.38E-03	1.65E-02
4355	NUSAP1, PRC1, PTTG1	6.74E-04	8.29E-03
4356	NUSAP1, PRC1, RAD51	1.72E-03	1.02E-02
4357	NUSAP1, PRC1, RAD54L	1.05E-03	5.52E-03
4358	NUSAP1, PRC1, RRM2	1.41E-03	1.18E-02
4359	NUSAP1, PRC1, TK1	4.41E-03	3.18E-02
4360	NUSAP1, PRC1, TOP2A	2.04E-03	1.05E-02
4361	NUSAP1, PTTG1, RAD51	2.51E-04	3.04E-03
4362	NUSAP1, PTTG1, RAD54L	1.32E-04	1.45E-03
4363	NUSAP1, PTTG1, RRM2	2.15E-04	3.88E-03
4364	NUSAP1, PTTG1, TK1	8.99E-04	1.33E-02
4365	NUSAP1, PTTG1, TOP2A	6.57E-04	5.24E-03
4366	NUSAP1, RAD51, RAD54L	4.06E-04	2.04E-03
4367	NUSAP1, RAD51, RRM2	5.08E-04	4.60E-03
4368	NUSAP1, RAD51, TK1	2.10E-03	1.53E-02
4369	NUSAP1, RAD51, TOP2A	1.48E-03	6.43E-03
4370	NUSAP1, RAD54L, RRM2	3.00E-04	2.43E-03
4371	NUSAP1, RAD54L, TK1	1.14E-03	7.86E-03
4372	NUSAP1, RAD54L, TOP2A	5.25E-04	2.18E-03
4373	NUSAP1, RRM2, TK1	1.62E-03	1.67E-02
4374	NUSAP1, RRM2, TOP2A	9.12E-04	6.30E-03
4375	NUSAP1, TK1, TOP2A	2.98E-03	1.81E-02
4376	ORC6L, PBK, PLK1	1.09E-04	1.12E-03
4377	ORC6L, PBK, PRC1	2.00E-04	1.68E-03
4378	ORC6L, PBK, PTTG1	2.04E-05	3.76E-04
4379	ORC6L, PBK, RAD51	8.07E-05	6.54E-04
4380	ORC6L, PBK, RAD54L	4.33E-05	2.98E-04
4381	ORC6L, PBK, RRM2	4.16E-05	6.01E-04
4382	ORC6L, PBK, TK1	1.76E-04	2.09E-03
4383	ORC6L, PBK, TOP2A	1.06E-04	7.06E-04
4384	ORC6L, PLK1, PRC1	7.39E-04	4.13E-03
4385	ORC6L, PLK1, PTTG1	1.04E-04	1.15E-03
4386	ORC6L, PLK1, RAD51	2.87E-04	1.50E-03
4387	ORC6L, PLK1, RAD54L	1.83E-04	8.09E-04
4388	ORC6L, PLK1, RRM2	2.28E-04	1.90E-03
4389	ORC6L, PLK1, TK1	8.99E-04	6.92E-03
4390	ORC6L, PLK1, TOP2A	6.00E-04	2.65E-03
4391	ORC6L, PRC1, PTTG1	1.46E-04	1.29E-03
4392	ORC6L, PRC1, RAD51	5.16E-04	2.07E-03
4393	ORC6L, PRC1, RAD54L	3.36E-04	1.09E-03
4394	ORC6L, PRC1, RRM2	3.87E-04	2.50E-03
4395	ORC6L, PRC1, TK1	1.48E-03	8.49E-03
4396	ORC6L, PRC1, TOP2A	4.42E-04	1.74E-03
4397	ORC6L, PTTG1, RAD51	4.35E-05	3.62E-04
4398	ORC6L, PTTG1, RAD54L	2.44E-05	1.65E-04
4399	ORC6L, PTTG1, RRM2	2.94E-05	4.49E-04
4400	ORC6L, PTTG1, TK1	1.88E-04	2.33E-03
4401	ORC6L, PTTG1, TOP2A	7.74E-05	5.34E-04
4402	ORC6L, RAD51, RAD54L	1.10E-04	3.25E-04
4403	ORC6L, RAD51, RRM2	1.09E-04	7.34E-04

4404	ORC6L, RAD51, TK1	5.94E-04	3.33E-03
4405	ORC6L, RAD51, TOP2A	2.74E-04	9.25E-04
4406	ORC6L, RAD54L, RRM2	6.83E-05	3.69E-04
4407	ORC6L, RAD54L, TK1	3.40E-04	1.65E-03
4408	ORC6L, RAD54L, TOP2A	1.02E-04	2.96E-04
4409	ORC6L, RRM2, TK1	4.22E-04	3.80E-03
4410	ORC6L, RRM2, TOP2A	1.42E-04	8.50E-04
4411	ORC6L, TK1, TOP2A	6.30E-04	3.43E-03
4412	PBK, PLK1, PRC1	2.36E-04	2.68E-03
4413	PBK, PLK1, PTTG1	4.15E-05	8.93E-04
4414	PBK, PLK1, RAD51	1.01E-04	1.10E-03
4415	PBK, PLK1, RAD54L	5.89E-05	5.45E-04
4416	PBK, PLK1, RRM2	6.69E-05	1.12E-03
4417	PBK, PLK1, TK1	2.35E-04	3.61E-03
4418	PBK, PLK1, TOP2A	2.40E-04	1.85E-03
4419	PBK, PRC1, PTTG1	6.53E-05	1.28E-03
4420	PBK, PRC1, RAD51	2.10E-04	1.88E-03
4421	PBK, PRC1, RAD54L	1.24E-04	9.21E-04
4422	PBK, PRC1, RRM2	1.30E-04	1.81E-03
4423	PBK, PRC1, TK1	4.76E-04	5.65E-03
4424	PBK, PRC1, TOP2A	1.98E-04	1.56E-03
4425	PBK, PTTG1, RAD51	2.41E-05	4.55E-04
4426	PBK, PTTG1, RAD54L	1.14E-05	1.83E-04
4427	PBK, PTTG1, RRM2	1.27E-05	4.14E-04
4428	PBK, PTTG1, TK1	7.02E-05	1.79E-03
4429	PBK, PTTG1, TOP2A	4.79E-05	6.28E-04
4430	PBK, RAD51, RAD54L	4.54E-05	3.25E-04
4431	PBK, RAD51, RRM2	4.02E-05	6.14E-04
4432	PBK, RAD51, TK1	2.06E-04	2.46E-03
4433	PBK, RAD51, TOP2A	1.36E-04	9.29E-04
4434	PBK, RAD54L, RRM2	2.26E-05	2.85E-04
4435	PBK, RAD54L, TK1	1.07E-04	1.14E-03
4436	PBK, RAD54L, TOP2A	4.71E-05	2.82E-04
4437	PBK, RRM2, TK1	1.17E-04	2.23E-03
4438	PBK, RRM2, TOP2A	6.20E-05	7.22E-04
4439	PBK, TK1, TOP2A	2.30E-04	2.38E-03
4440	PLK1, PRC1, PTTG1	3.00E-04	3.59E-03
4441	PLK1, PRC1, RAD51	6.94E-04	4.12E-03
4442	PLK1, PRC1, RAD54L	4.79E-04	2.32E-03
4443	PLK1, PRC1, RRM2	6.42E-04	5.34E-03
4444	PLK1, PRC1, TK1	2.17E-03	1.70E-02
4445	PLK1, PRC1, TOP2A	1.06E-03	5.37E-03
4446	PLK1, PTTG1, RAD51	1.10E-04	1.23E-03
4447	PLK1, PTTG1, RAD54L	6.74E-05	6.23E-04
4448	PLK1, PTTG1, RRM2	1.07E-04	1.71E-03
4449	PLK1, PTTG1, TK1	4.78E-04	7.05E-03
4450	PLK1, PTTG1, TOP2A	4.25E-04	3.21E-03
4451	PLK1, RAD51, RAD54L	1.70E-04	7.68E-04
4452	PLK1, RAD51, RRM2	2.08E-04	1.79E-03
4453	PLK1, RAD51, TK1	9.47E-04	7.34E-03
4454	PLK1, RAD51, TOP2A	7.52E-04	3.32E-03
4455	PLK1, RAD54L, RRM2	1.40E-04	9.83E-04
4456	PLK1, RAD54L, TK1	5.72E-04	3.89E-03
4457	PLK1, RAD54L, TOP2A	2.98E-04	1.17E-03
4458	PLK1, RRM2, TK1	8.21E-04	8.76E-03
4459	PLK1, RRM2, TOP2A	5.20E-04	3.38E-03
4460	PLK1, TK1, TOP2A	1.70E-03	1.07E-02
4461	PRC1, PTTG1, RAD51	1.70E-04	1.57E-03
4462	PRC1, PTTG1, RAD54L	1.05E-04	7.65E-04
4463	PRC1, PTTG1, RRM2	1.47E-04	2.02E-03
4464	PRC1, PTTG1, TK1	6.92E-04	8.14E-03
4465	PRC1, PTTG1, TOP2A	1.89E-04	1.54E-03
4466	PRC1, RAD51, RAD54L	3.51E-04	1.20E-03
4467	PRC1, RAD51, RRM2	3.91E-04	2.64E-03
4468	PRC1, RAD51, TK1	1.71E-03	9.97E-03
4469	PRC1, RAD51, TOP2A	5.51E-04	2.25E-03
4470	PRC1, RAD54L, RRM2	2.59E-04	1.40E-03
4471	PRC1, RAD54L, TK1	1.05E-03	5.23E-03
4472	PRC1, RAD54L, TOP2A	2.25E-04	7.60E-04
4473	PRC1, RRM2, TK1	1.35E-03	1.11E-02
4474	PRC1, RRM2, TOP2A	3.69E-04	2.39E-03

4475	PRC1, TK1, TOP2A	1.35E-03	8.09E-03
4476	PTTG1, RAD51, RAD54L	2.86E-05	1.96E-04
4477	PTTG1, RAD51, RRM2	3.37E-05	5.16E-04
4478	PTTG1, RAD51, TK1	2.52E-04	3.00E-03
4479	PTTG1, RAD51, TOP2A	1.19E-04	8.09E-04
4480	PTTG1, RAD54L, RRM2	2.02E-05	2.42E-04
4481	PTTG1, RAD54L, TK1	1.31E-04	1.36E-03
4482	PTTG1, RAD54L, TOP2A	3.99E-05	2.30E-04
4483	PTTG1, RRM2, TK1	1.98E-04	3.51E-03
4484	PTTG1, RRM2, TOP2A	7.75E-05	8.67E-04
4485	PTTG1, TK1, TOP2A	3.66E-04	3.72E-03
4486	RAD51, RAD54L, RRM2	6.73E-05	3.72E-04
4487	RAD51, RAD54L, TK1	3.95E-04	1.92E-03
4488	RAD51, RAD54L, TOP2A	1.27E-04	3.66E-04
4489	RAD51, RRM2, TK1	4.69E-04	4.20E-03
4490	RAD51, RRM2, TOP2A	1.87E-04	1.12E-03
4491	RAD51, TK1, TOP2A	8.86E-04	4.70E-03
4492	RAD54L, RRM2, TK1	2.75E-04	2.11E-03
4493	RAD54L, RRM2, TOP2A	7.26E-05	3.68E-04
4494	RAD54L, TK1, TOP2A	3.21E-04	1.55E-03
4495	RRM2, TK1, TOP2A	5.52E-04	4.55E-03

Table 23

Sub-Panel #	Genes in Sub-Panel	uni pval	multi pval
1	C18orf24, KIF11, PTTG1, PBK	1.82E-06	6.71E-05
2	C18orf24, KIF11, PTTG1, CENPF	2.05E-06	5.64E-05
3	C18orf24, KIF11, PTTG1, RAD54L	1.50E-06	3.56E-05
4	C18orf24, KIF11, PTTG1, CEP55	2.41E-06	5.95E-05
5	C18orf24, KIF11, PTTG1, ORC6L	2.18E-06	5.79E-05
6	C18orf24, KIF11, PTTG1, RRM2	2.09E-06	8.12E-05
7	C18orf24, KIF11, PTTG1, CDKN3	5.68E-06	1.88E-04
8	C18orf24, KIF11, PBK, CENPF	2.25E-06	5.32E-05
9	C18orf24, KIF11, PBK, RAD54L	2.00E-06	4.01E-05
10	C18orf24, KIF11, PBK, CEP55	2.94E-06	6.14E-05
11	C18orf24, KIF11, PBK, ORC6L	3.55E-06	7.54E-05
12	C18orf24, KIF11, PBK, RRM2	2.52E-06	8.44E-05
13	C18orf24, KIF11, PBK, CDKN3	6.34E-06	1.79E-04
14	C18orf24, KIF11, CENPF, RAD54L	2.14E-06	3.14E-05
15	C18orf24, KIF11, CENPF, CEP55	3.21E-06	5.04E-05
16	C18orf24, KIF11, CENPF, ORC6L	3.07E-06	5.05E-05
17	C18orf24, KIF11, CENPF, RRM2	2.73E-06	6.59E-05
18	C18orf24, KIF11, CENPF, CDKN3	6.30E-06	1.37E-04
19	C18orf24, KIF11, RAD54L, CEP55	1.70E-06	2.35E-05
20	C18orf24, KIF11, RAD54L, ORC6L	3.00E-06	3.89E-05
21	C18orf24, KIF11, RAD54L, RRM2	2.19E-06	4.51E-05
22	C18orf24, KIF11, RAD54L, CDKN3	4.67E-06	8.99E-05
23	C18orf24, KIF11, CEP55, ORC6L	3.62E-06	5.38E-05
24	C18orf24, KIF11, CEP55, RRM2	2.61E-06	5.79E-05
25	C18orf24, KIF11, CEP55, CDKN3	7.42E-06	1.47E-04
26	C18orf24, KIF11, ORC6L, RRM2	3.25E-06	7.52E-05
27	C18orf24, KIF11, ORC6L, CDKN3	7.76E-06	1.60E-04
28	C18orf24, KIF11, RRM2, CDKN3	6.45E-06	1.99E-04
29	C18orf24, PTTG1, PBK, CENPF	2.79E-06	7.74E-05
30	C18orf24, PTTG1, PBK, RAD54L	3.25E-06	7.06E-05
31	C18orf24, PTTG1, PBK, CEP55	4.00E-06	9.40E-05
32	C18orf24, PTTG1, PBK, ORC6L	5.27E-06	1.25E-04
33	C18orf24, PTTG1, PBK, RRM2	3.58E-06	1.36E-04
34	C18orf24, PTTG1, PBK, CDKN3	9.42E-06	2.96E-04
35	C18orf24, PTTG1, CENPF, RAD54L	3.85E-06	5.50E-05
36	C18orf24, PTTG1, CENPF, CEP55	5.58E-06	8.46E-05
37	C18orf24, PTTG1, CENPF, ORC6L	5.03E-06	8.36E-05
38	C18orf24, PTTG1, CENPF, RRM2	5.41E-06	1.28E-04
39	C18orf24, PTTG1, CENPF, CDKN3	1.20E-05	2.57E-04
40	C18orf24, PTTG1, RAD54L, CEP55	2.20E-06	2.91E-05
41	C18orf24, PTTG1, RAD54L, ORC6L	4.32E-06	5.31E-05
42	C18orf24, PTTG1, RAD54L, RRM2	3.74E-06	7.33E-05
43	C18orf24, PTTG1, RAD54L, CDKN3	7.67E-06	1.40E-04
44	C18orf24, PTTG1, CEP55, ORC6L	4.31E-06	6.32E-05

45	C18orf24, PTTG1, CEP55, RRM2	4.35E-06	9.35E-05
46	C18orf24, PTTG1, CEP55, CDKN3	1.14E-05	2.18E-04
47	C18orf24, PTTG1, ORC6L, RRM2	5.43E-06	1.24E-04
48	C18orf24, PTTG1, ORC6L, CDKN3	1.23E-05	2.49E-04
49	C18orf24, PTTG1, RRM2, CDKN3	1.16E-05	3.44E-04
50	C18orf24, PBK, CENPF, RAD54L	3.88E-06	5.61E-05
51	C18orf24, PBK, CENPF, CEP55	4.81E-06	7.42E-05
52	C18orf24, PBK, CENPF, ORC6L	5.93E-06	9.49E-05
53	C18orf24, PBK, CENPF, RRM2	4.09E-06	1.02E-04
54	C18orf24, PBK, CENPF, CDKN3	9.27E-06	2.04E-04
55	C18orf24, PBK, RAD54L, CEP55	3.61E-06	4.71E-05
56	C18orf24, PBK, RAD54L, ORC6L	8.32E-06	9.79E-05
57	C18orf24, PBK, RAD54L, RRM2	4.88E-06	9.60E-05
58	C18orf24, PBK, RAD54L, CDKN3	1.01E-05	1.81E-04
59	C18orf24, PBK, CEP55, ORC6L	7.77E-06	1.07E-04
60	C18orf24, PBK, CEP55, RRM2	5.03E-06	1.10E-04
61	C18orf24, PBK, CEP55, CDKN3	1.27E-05	2.42E-04
62	C18orf24, PBK, ORC6L, RRM2	8.32E-06	1.78E-04
63	C18orf24, PBK, ORC6L, CDKN3	1.77E-05	3.33E-04
64	C18orf24, PBK, RRM2, CDKN3	1.15E-05	3.40E-04
65	C18orf24, CENPF, RAD54L, CEP55	4.86E-06	4.13E-05
66	C18orf24, CENPF, RAD54L, ORC6L	8.49E-06	6.89E-05
67	C18orf24, CENPF, RAD54L, RRM2	7.17E-06	9.02E-05
68	C18orf24, CENPF, RAD54L, CDKN3	1.28E-05	1.56E-04
69	C18orf24, CENPF, CEP55, ORC6L	9.14E-06	8.61E-05
70	C18orf24, CENPF, CEP55, RRM2	8.41E-06	1.14E-04
71	C18orf24, CENPF, CEP55, CDKN3	1.84E-05	2.35E-04
72	C18orf24, CENPF, ORC6L, RRM2	1.02E-05	1.47E-04
73	C18orf24, CENPF, ORC6L, CDKN3	1.96E-05	2.63E-04
74	C18orf24, CENPF, RRM2, CDKN3	1.78E-05	3.47E-04
75	C18orf24, RAD54L, CEP55, ORC6L	4.99E-06	3.77E-05
76	C18orf24, RAD54L, CEP55, RRM2	3.87E-06	4.58E-05
77	C18orf24, RAD54L, CEP55, CDKN3	8.08E-06	9.29E-05
78	C18orf24, RAD54L, ORC6L, RRM2	9.19E-06	1.01E-04
79	C18orf24, RAD54L, ORC6L, CDKN3	1.59E-05	1.69E-04
80	C18orf24, RAD54L, RRM2, CDKN3	1.22E-05	2.06E-04
81	C18orf24, CEP55, ORC6L, RRM2	7.55E-06	9.94E-05
82	C18orf24, CEP55, ORC6L, CDKN3	1.72E-05	2.10E-04
83	C18orf24, CEP55, RRM2, CDKN3	1.50E-05	2.70E-04
84	C18orf24, ORC6L, RRM2, CDKN3	2.08E-05	3.82E-04
85	KIF11, PTTG1, PBK, CENPF	2.32E-06	7.07E-05
86	KIF11, PTTG1, PBK, RAD54L	3.93E-06	8.44E-05
87	KIF11, PTTG1, PBK, CEP55	4.23E-06	1.03E-04
88	KIF11, PTTG1, PBK, ORC6L	6.44E-06	1.49E-04
89	KIF11, PTTG1, PBK, RRM2	4.86E-06	1.73E-04
90	KIF11, PTTG1, PBK, CDKN3	1.05E-05	3.36E-04
91	KIF11, PTTG1, CENPF, RAD54L	3.06E-06	5.18E-05
92	KIF11, PTTG1, CENPF, CEP55	4.41E-06	7.77E-05
93	KIF11, PTTG1, CENPF, ORC6L	3.94E-06	7.74E-05
94	KIF11, PTTG1, CENPF, RRM2	3.75E-06	1.06E-04
95	KIF11, PTTG1, CENPF, CDKN3	8.02E-06	2.14E-04
96	KIF11, PTTG1, RAD54L, CEP55	3.26E-06	4.86E-05
97	KIF11, PTTG1, RAD54L, ORC6L	8.35E-06	1.04E-04
98	KIF11, PTTG1, RAD54L, RRM2	6.76E-06	1.26E-04
99	KIF11, PTTG1, RAD54L, CDKN3	1.07E-05	2.13E-04
100	KIF11, PTTG1, CEP55, ORC6L	6.47E-06	1.05E-04
101	KIF11, PTTG1, CEP55, RRM2	4.66E-06	1.13E-04
102	KIF11, PTTG1, CEP55, CDKN3	1.31E-05	2.85E-04
103	KIF11, PTTG1, ORC6L, RRM2	8.98E-06	1.94E-04
104	KIF11, PTTG1, ORC6L, CDKN3	1.63E-05	3.57E-04
105	KIF11, PTTG1, RRM2, CDKN3	1.45E-05	4.57E-04
106	KIF11, PBK, CENPF, RAD54L	3.03E-06	4.68E-05
107	KIF11, PBK, CENPF, CEP55	4.22E-06	6.67E-05
108	KIF11, PBK, CENPF, ORC6L	4.87E-06	8.22E-05
109	KIF11, PBK, CENPF, RRM2	3.49E-06	9.16E-05
110	KIF11, PBK, CENPF, CDKN3	7.45E-06	1.78E-04
111	KIF11, PBK, RAD54L, CEP55	3.64E-06	4.84E-05
112	KIF11, PBK, RAD54L, ORC6L	1.00E-05	1.12E-04
113	KIF11, PBK, RAD54L, RRM2	6.53E-06	1.15E-04
114	KIF11, PBK, RAD54L, CDKN3	1.08E-05	1.92E-04
115	KIF11, PBK, CEP55, ORC6L	8.28E-06	1.15E-04

116	KIF11, PBK, CEP55, RRM2	4.74E-06	1.05E-04
117	KIF11, PBK, CEP55, CDKN3	1.27E-05	2.45E-04
118	KIF11, PBK, ORC6L, RRM2	1.06E-05	2.03E-04
119	KIF11, PBK, ORC6L, CDKN3	1.89E-05	3.52E-04
120	KIF11, PBK, RRM2, CDKN3	1.36E-05	3.86E-04
121	KIF11, CENPF, RAD54L, CEP55	3.60E-06	3.38E-05
122	KIF11, CENPF, RAD54L, ORC6L	6.31E-06	5.72E-05
123	KIF11, CENPF, RAD54L, RRM2	4.63E-06	6.55E-05
124	KIF11, CENPF, RAD54L, CDKN3	7.78E-06	1.13E-04
125	KIF11, CENPF, CEP55, ORC6L	6.81E-06	7.10E-05
126	KIF11, CENPF, CEP55, RRM2	4.78E-06	7.36E-05
127	KIF11, CENPF, CEP55, CDKN3	1.17E-05	1.72E-04
128	KIF11, CENPF, ORC6L, RRM2	6.11E-06	1.00E-04
129	KIF11, CENPF, ORC6L, CDKN3	1.17E-05	1.88E-04
130	KIF11, CENPF, RRM2, CDKN3	9.69E-06	2.31E-04
131	KIF11, RAD54L, CEP55, ORC6L	6.55E-06	5.34E-05
132	KIF11, RAD54L, CEP55, RRM2	3.74E-06	4.81E-05
133	KIF11, RAD54L, CEP55, CDKN3	8.50E-06	1.09E-04
134	KIF11, RAD54L, ORC6L, RRM2	1.43E-05	1.40E-04
135	KIF11, RAD54L, ORC6L, CDKN3	1.98E-05	2.18E-04
136	KIF11, RAD54L, RRM2, CDKN3	1.45E-05	2.45E-04
137	KIF11, CEP55, ORC6L, RRM2	7.41E-06	1.05E-04
138	KIF11, CEP55, ORC6L, CDKN3	1.82E-05	2.44E-04
139	KIF11, CEP55, RRM2, CDKN3	1.20E-05	2.46E-04
140	KIF11, ORC6L, RRM2, CDKN3	2.23E-05	4.14E-04
141	PTTG1, PBK, CENPF, RAD54L	4.82E-06	8.24E-05
142	PTTG1, PBK, CENPF, CEP55	6.31E-06	1.09E-04
143	PTTG1, PBK, CENPF, ORC6L	6.91E-06	1.36E-04
144	PTTG1, PBK, CENPF, RRM2	4.80E-06	1.47E-04
145	PTTG1, PBK, CENPF, CDKN3	1.02E-05	2.85E-04
146	PTTG1, PBK, RAD54L, CEP55	6.38E-06	8.86E-05
147	PTTG1, PBK, RAD54L, ORC6L	1.84E-05	2.17E-04
148	PTTG1, PBK, RAD54L, RRM2	1.14E-05	2.15E-04
149	PTTG1, PBK, RAD54L, CDKN3	1.86E-05	3.60E-04
150	PTTG1, PBK, CEP55, ORC6L	1.29E-05	1.92E-04
151	PTTG1, PBK, CEP55, RRM2	8.35E-06	1.98E-04
152	PTTG1, PBK, CEP55, CDKN3	2.11E-05	4.38E-04
153	PTTG1, PBK, ORC6L, RRM2	1.76E-05	3.82E-04
154	PTTG1, PBK, ORC6L, CDKN3	3.09E-05	6.45E-04
155	PTTG1, PBK, RRM2, CDKN3	2.06E-05	6.61E-04
156	PTTG1, CENPF, RAD54L, CEP55	6.37E-06	5.54E-05
157	PTTG1, CENPF, RAD54L, ORC6L	1.09E-05	9.54E-05
158	PTTG1, CENPF, RAD54L, RRM2	9.43E-06	1.27E-04
159	PTTG1, CENPF, RAD54L, CDKN3	1.44E-05	2.03E-04
160	PTTG1, CENPF, CEP55, ORC6L	1.09E-05	1.09E-04
161	PTTG1, CENPF, CEP55, RRM2	1.06E-05	1.52E-04
162	PTTG1, CENPF, CEP55, CDKN3	2.27E-05	3.16E-04
163	PTTG1, CENPF, ORC6L, RRM2	1.19E-05	1.97E-04
164	PTTG1, CENPF, ORC6L, CDKN3	2.06E-05	3.35E-04
165	PTTG1, CENPF, RRM2, CDKN3	1.94E-05	4.52E-04
166	PTTG1, RAD54L, CEP55, ORC6L	8.41E-06	6.35E-05
167	PTTG1, RAD54L, CEP55, RRM2	6.64E-06	7.81E-05
168	PTTG1, RAD54L, CEP55, CDKN3	1.29E-05	1.55E-04
169	PTTG1, RAD54L, ORC6L, RRM2	2.39E-05	2.28E-04
170	PTTG1, RAD54L, ORC6L, CDKN3	3.05E-05	3.26E-04
171	PTTG1, RAD54L, RRM2, CDKN3	2.46E-05	4.03E-04
172	PTTG1, CEP55, ORC6L, RRM2	1.17E-05	1.59E-04
173	PTTG1, CEP55, ORC6L, CDKN3	2.58E-05	3.33E-04
174	PTTG1, CEP55, RRM2, CDKN3	2.28E-05	4.35E-04
175	PTTG1, ORC6L, RRM2, CDKN3	3.82E-05	7.14E-04
176	PBK, CENPF, RAD54L, CEP55	6.43E-06	5.91E-05
177	PBK, CENPF, RAD54L, ORC6L	1.30E-05	1.18E-04
178	PBK, CENPF, RAD54L, RRM2	7.87E-06	1.16E-04
179	PBK, CENPF, RAD54L, CDKN3	1.31E-05	1.94E-04
180	PBK, CENPF, CEP55, ORC6L	1.25E-05	1.26E-04
181	PBK, CENPF, CEP55, RRM2	7.96E-06	1.26E-04
182	PBK, CENPF, CEP55, CDKN3	1.79E-05	2.62E-04
183	PBK, CENPF, ORC6L, RRM2	1.18E-05	1.99E-04
184	PBK, CENPF, ORC6L, CDKN3	2.09E-05	3.38E-04
185	PBK, CENPF, RRM2, CDKN3	1.37E-05	3.43E-04
186	PBK, RAD54L, CEP55, ORC6L	1.50E-05	1.16E-04

187	PBK, RAD54L, CEP55, RRM2	8.27E-06	1.04E-04
188	PBK, RAD54L, CEP55, CDKN3	1.69E-05	2.06E-04
189	PBK, RAD54L, ORC6L, RRM2	3.16E-05	3.14E-04
190	PBK, RAD54L, ORC6L, CDKN3	4.36E-05	4.60E-04
191	PBK, RAD54L, RRM2, CDKN3	2.62E-05	4.41E-04
192	PBK, CEP55, ORC6L, RRM2	1.65E-05	2.26E-04
193	PBK, CEP55, ORC6L, CDKN3	3.54E-05	4.46E-04
194	PBK, CEP55, RRM2, CDKN3	2.23E-05	4.42E-04
195	PBK, ORC6L, RRM2, CDKN3	4.46E-05	8.07E-04
196	CENPF, RAD54L, CEP55, ORC6L	1.36E-05	6.89E-05
197	CENPF, RAD54L, CEP55, RRM2	1.03E-05	8.02E-05
198	CENPF, RAD54L, CEP55, CDKN3	1.81E-05	1.46E-04
199	CENPF, RAD54L, ORC6L, RRM2	2.28E-05	1.73E-04
200	CENPF, RAD54L, ORC6L, CDKN3	3.09E-05	2.50E-04
201	CENPF, RAD54L, RRM2, CDKN3	2.40E-05	3.00E-04
202	CENPF, CEP55, ORC6L, RRM2	1.78E-05	1.58E-04
203	CENPF, CEP55, ORC6L, CDKN3	3.48E-05	3.05E-04
204	CENPF, CEP55, RRM2, CDKN3	2.94E-05	3.78E-04
205	CENPF, ORC6L, RRM2, CDKN3	3.62E-05	5.15E-04
206	RAD54L, CEP55, ORC6L, RRM2	1.42E-05	9.70E-05
207	RAD54L, CEP55, ORC6L, CDKN3	2.47E-05	1.76E-04
208	RAD54L, CEP55, RRM2, CDKN3	1.78E-05	1.98E-04
209	RAD54L, ORC6L, RRM2, CDKN3	5.68E-05	5.20E-04
210	CEP55, ORC6L, RRM2, CDKN3	3.54E-05	4.24E-04

Table 24

Sub-Panel #	Genes in Sub-Panel	uni pval	multi pval
1	C18orf24, KIF11, PTTG1, PBK, CENPF	1.75E-06	5.24E-05
2	C18orf24, KIF11, PTTG1, PBK, RAD54L	1.68E-06	4.35E-05
3	C18orf24, KIF11, PTTG1, PBK, CEP55	2.01E-06	5.37E-05
4	C18orf24, KIF11, PTTG1, PBK, ORC6L	2.52E-06	6.93E-05
5	C18orf24, KIF11, PTTG1, PBK, RRM2	2.00E-06	7.95E-05
6	C18orf24, KIF11, PTTG1, PBK, CDKN3	4.69E-06	1.59E-04
7	C18orf24, KIF11, PTTG1, CENPF, RAD54L	1.81E-06	3.59E-05
8	C18orf24, KIF11, PTTG1, CENPF, CEP55	2.17E-06	4.52E-05
9	C18orf24, KIF11, PTTG1, CENPF, ORC6L	2.27E-06	5.03E-05
10	C18orf24, KIF11, PTTG1, CENPF, RRM2	2.20E-06	6.60E-05
11	C18orf24, KIF11, PTTG1, CENPF, CDKN3	4.75E-06	1.29E-04
12	C18orf24, KIF11, PTTG1, RAD54L, CEP55	1.37E-06	2.57E-05
13	C18orf24, KIF11, PTTG1, RAD54L, ORC6L	2.35E-06	4.28E-05
14	C18orf24, KIF11, PTTG1, RAD54L, RRM2	1.96E-06	5.13E-05
15	C18orf24, KIF11, PTTG1, RAD54L, CDKN3	3.97E-06	9.66E-05
16	C18orf24, KIF11, PTTG1, CEP55, ORC6L	2.39E-06	4.81E-05
17	C18orf24, KIF11, PTTG1, CEP55, RRM2	1.93E-06	5.37E-05
18	C18orf24, KIF11, PTTG1, CEP55, CDKN3	5.02E-06	1.25E-04
19	C18orf24, KIF11, PTTG1, ORC6L, RRM2	2.52E-06	7.37E-05
20	C18orf24, KIF11, PTTG1, ORC6L, CDKN3	5.62E-06	1.47E-04
21	C18orf24, KIF11, PTTG1, RRM2, CDKN3	5.10E-06	1.83E-04
22	C18orf24, KIF11, PBK, CENPF, RAD54L	2.01E-06	3.61E-05
23	C18orf24, KIF11, PBK, CENPF, CEP55	2.34E-06	4.38E-05
24	C18orf24, KIF11, PBK, CENPF, ORC6L	2.95E-06	5.68E-05
25	C18orf24, KIF11, PBK, CENPF, RRM2	2.33E-06	6.38E-05
26	C18orf24, KIF11, PBK, CENPF, CDKN3	4.87E-06	1.19E-04
27	C18orf24, KIF11, PBK, RAD54L, CEP55	1.73E-06	2.88E-05
28	C18orf24, KIF11, PBK, RAD54L, ORC6L	3.30E-06	5.23E-05
29	C18orf24, KIF11, PBK, RAD54L, RRM2	2.30E-06	5.44E-05
30	C18orf24, KIF11, PBK, RAD54L, CDKN3	4.54E-06	9.80E-05
31	C18orf24, KIF11, PBK, CEP55, ORC6L	3.35E-06	5.80E-05
32	C18orf24, KIF11, PBK, CEP55, RRM2	2.25E-06	5.68E-05
33	C18orf24, KIF11, PBK, CEP55, CDKN3	5.52E-06	1.22E-04
34	C18orf24, KIF11, PBK, ORC6L, RRM2	3.47E-06	8.75E-05
35	C18orf24, KIF11, PBK, ORC6L, CDKN3	7.19E-06	1.61E-04
36	C18orf24, KIF11, PBK, RRM2, CDKN3	5.51E-06	1.77E-04
37	C18orf24, KIF11, CENPF, RAD54L, CEP55	1.78E-06	2.29E-05
38	C18orf24, KIF11, CENPF, RAD54L, ORC6L	3.03E-06	3.76E-05
39	C18orf24, KIF11, CENPF, RAD54L, RRM2	2.45E-06	4.34E-05
40	C18orf24, KIF11, CENPF, RAD54L, CDKN3	4.47E-06	7.64E-05
41	C18orf24, KIF11, CENPF, CEP55, ORC6L	3.01E-06	4.17E-05

42	C18orf24, KIF11, CENPF, CEP55, RRM2	2.35E-06	4.49E-05
43	C18orf24, KIF11, CENPF, CEP55, CDKN3	5.44E-06	9.60E-05
44	C18orf24, KIF11, CENPF, ORC6L, RRM2	3.13E-06	6.19E-05
45	C18orf24, KIF11, CENPF, ORC6L, CDKN3	6.25E-06	1.15E-04
46	C18orf24, KIF11, CENPF, RRM2, CDKN3	5.49E-06	1.39E-04
47	C18orf24, KIF11, RAD54L, CEP55, ORC6L	2.33E-06	2.75E-05
48	C18orf24, KIF11, RAD54L, CEP55, RRM2	1.59E-06	2.71E-05
49	C18orf24, KIF11, RAD54L, CEP55, CDKN3	3.56E-06	5.76E-05
50	C18orf24, KIF11, RAD54L, ORC6L, RRM2	3.34E-06	5.43E-05
51	C18orf24, KIF11, RAD54L, ORC6L, CDKN3	6.14E-06	9.59E-05
52	C18orf24, KIF11, RAD54L, RRM2, CDKN3	4.77E-06	1.08E-04
53	C18orf24, KIF11, CEP55, ORC6L, RRM2	2.78E-06	5.11E-05
54	C18orf24, KIF11, CEP55, ORC6L, CDKN3	6.56E-06	1.11E-04
55	C18orf24, KIF11, CEP55, RRM2, CDKN3	4.94E-06	1.17E-04
56	C18orf24, KIF11, ORC6L, RRM2, CDKN3	6.84E-06	1.66E-04
57	C18orf24, PTTG1, PBK, CENPF, RAD54L	2.77E-06	5.42E-05
58	C18orf24, PTTG1, PBK, CENPF, CEP55	3.02E-06	6.18E-05
59	C18orf24, PTTG1, PBK, CENPF, ORC6L	3.81E-06	8.23E-05
60	C18orf24, PTTG1, PBK, CENPF, RRM2	2.88E-06	8.88E-05
61	C18orf24, PTTG1, PBK, CENPF, CDKN3	6.24E-06	1.71E-04
62	C18orf24, PTTG1, PBK, RAD54L, CEP55	2.46E-06	4.37E-05
63	C18orf24, PTTG1, PBK, RAD54L, ORC6L	5.22E-06	8.69E-05
64	C18orf24, PTTG1, PBK, RAD54L, RRM2	3.47E-06	8.72E-05
65	C18orf24, PTTG1, PBK, RAD54L, CDKN3	6.99E-06	1.60E-04
66	C18orf24, PTTG1, PBK, CEP55, ORC6L	4.42E-06	8.30E-05
67	C18orf24, PTTG1, PBK, CEP55, RRM2	3.21E-06	8.81E-05
68	C18orf24, PTTG1, PBK, CEP55, CDKN3	7.74E-06	1.85E-04
69	C18orf24, PTTG1, PBK, ORC6L, RRM2	5.19E-06	1.43E-04
70	C18orf24, PTTG1, PBK, ORC6L, CDKN3	1.07E-05	2.61E-04
71	C18orf24, PTTG1, PBK, RRM2, CDKN3	7.67E-06	2.68E-04
72	C18orf24, PTTG1, CENPF, RAD54L, CEP55	2.81E-06	3.38E-05
73	C18orf24, PTTG1, CENPF, RAD54L, ORC6L	4.74E-06	5.65E-05
74	C18orf24, PTTG1, CENPF, RAD54L, RRM2	4.36E-06	7.32E-05
75	C18orf24, PTTG1, CENPF, RAD54L, CDKN3	7.72E-06	1.25E-04
76	C18orf24, PTTG1, CENPF, CEP55, ORC6L	4.52E-06	5.97E-05
77	C18orf24, PTTG1, CENPF, CEP55, RRM2	4.50E-06	8.02E-05
78	C18orf24, PTTG1, CENPF, CEP55, CDKN3	9.60E-06	1.59E-04
79	C18orf24, PTTG1, CENPF, ORC6L, RRM2	5.62E-06	1.08E-04
80	C18orf24, PTTG1, CENPF, ORC6L, CDKN3	1.06E-05	1.90E-04
81	C18orf24, PTTG1, CENPF, RRM2, CDKN3	1.02E-05	2.45E-04
82	C18orf24, PTTG1, RAD54L, CEP55, ORC6L	2.77E-06	3.07E-05
83	C18orf24, PTTG1, RAD54L, CEP55, RRM2	2.41E-06	3.84E-05
84	C18orf24, PTTG1, RAD54L, CEP55, CDKN3	4.96E-06	7.54E-05
85	C18orf24, PTTG1, RAD54L, ORC6L, RRM2	5.28E-06	8.06E-05
86	C18orf24, PTTG1, RAD54L, ORC6L, CDKN3	9.19E-06	1.35E-04
87	C18orf24, PTTG1, RAD54L, RRM2, CDKN3	7.76E-06	1.63E-04
88	C18orf24, PTTG1, CEP55, ORC6L, RRM2	3.97E-06	6.97E-05
89	C18orf24, PTTG1, CEP55, ORC6L, CDKN3	8.82E-06	1.42E-04
90	C18orf24, PTTG1, CEP55, RRM2, CDKN3	8.30E-06	1.84E-04
91	C18orf24, PTTG1, ORC6L, RRM2, CDKN3	1.16E-05	2.67E-04
92	C18orf24, PBK, CENPF, RAD54L, CEP55	2.90E-06	3.63E-05
93	C18orf24, PBK, CENPF, RAD54L, ORC6L	5.64E-06	6.83E-05
94	C18orf24, PBK, CENPF, RAD54L, RRM2	3.85E-06	6.90E-05
95	C18orf24, PBK, CENPF, RAD54L, CDKN3	7.07E-06	1.20E-04
96	C18orf24, PBK, CENPF, CEP55, ORC6L	5.04E-06	6.75E-05
97	C18orf24, PBK, CENPF, CEP55, RRM2	3.62E-06	6.97E-05
98	C18orf24, PBK, CENPF, CEP55, CDKN3	7.85E-06	1.38E-04
99	C18orf24, PBK, CENPF, ORC6L, RRM2	5.53E-06	1.09E-04
100	C18orf24, PBK, CENPF, ORC6L, CDKN3	1.04E-05	1.89E-04
101	C18orf24, PBK, CENPF, RRM2, CDKN3	7.55E-06	1.95E-04
102	C18orf24, PBK, RAD54L, CEP55, ORC6L	4.81E-06	5.36E-05
103	C18orf24, PBK, RAD54L, CEP55, RRM2	3.09E-06	5.16E-05
104	C18orf24, PBK, RAD54L, CEP55, CDKN3	6.35E-06	9.90E-05
105	C18orf24, PBK, RAD54L, ORC6L, RRM2	7.53E-06	1.16E-04
106	C18orf24, PBK, RAD54L, ORC6L, CDKN3	1.31E-05	1.90E-04
107	C18orf24, PBK, RAD54L, RRM2, CDKN3	8.54E-06	1.85E-04
108	C18orf24, PBK, CEP55, ORC6L, RRM2	5.52E-06	9.79E-05
109	C18orf24, PBK, CEP55, ORC6L, CDKN3	1.18E-05	1.89E-04
110	C18orf24, PBK, CEP55, RRM2, CDKN3	8.32E-06	1.93E-04
111	C18orf24, PBK, ORC6L, RRM2, CDKN3	1.36E-05	3.11E-04
112	C18orf24, CENPF, RAD54L, CEP55, ORC6L	5.04E-06	3.94E-05

113	C18orf24, CENPF, RAD54L, CEP55, RRM2	4.23E-06	4.67E-05
114	C18orf24, CENPF, RAD54L, CEP55, CDKN3	7.78E-06	8.41E-05
115	C18orf24, CENPF, RAD54L, ORC6L, RRM2	8.42E-06	9.09E-05
116	C18orf24, CENPF, RAD54L, ORC6L, CDKN3	1.34E-05	1.42E-04
117	C18orf24, CENPF, RAD54L, RRM2, CDKN3	1.13E-05	1.70E-04
118	C18orf24, CENPF, CEP55, ORC6L, RRM2	6.81E-06	8.26E-05
119	C18orf24, CENPF, CEP55, ORC6L, CDKN3	1.34E-05	1.54E-04
120	C18orf24, CENPF, CEP55, RRM2, CDKN3	1.21E-05	1.90E-04
121	C18orf24, CENPF, ORC6L, RRM2, CDKN3	1.63E-05	2.69E-04
122	C18orf24, RAD54L, CEP55, ORC6L, RRM2	4.47E-06	4.59E-05
123	C18orf24, RAD54L, CEP55, ORC6L, CDKN3	8.33E-06	8.34E-05
124	C18orf24, RAD54L, CEP55, RRM2, CDKN3	6.72E-06	9.68E-05
125	C18orf24, RAD54L, ORC6L, RRM2, CDKN3	1.45E-05	1.97E-04
126	C18orf24, CEP55, ORC6L, RRM2, CDKN3	1.19E-05	1.82E-04
127	KIF11, PTTG1, PBK, CENPF, RAD54L	2.46E-06	5.15E-05
128	KIF11, PTTG1, PBK, CENPF, CEP55	2.84E-06	6.05E-05
129	KIF11, PTTG1, PBK, CENPF, ORC6L	3.41E-06	7.80E-05
130	KIF11, PTTG1, PBK, CENPF, RRM2	2.76E-06	8.94E-05
131	KIF11, PTTG1, PBK, CENPF, CDKN3	5.58E-06	1.65E-04
132	KIF11, PTTG1, PBK, RAD54L, CEP55	2.62E-06	4.79E-05
133	KIF11, PTTG1, PBK, RAD54L, ORC6L	6.48E-06	1.04E-04
134	KIF11, PTTG1, PBK, RAD54L, RRM2	4.81E-06	1.11E-04
135	KIF11, PTTG1, PBK, RAD54L, CDKN3	7.97E-06	1.82E-04
136	KIF11, PTTG1, PBK, CEP55, ORC6L	4.90E-06	9.35E-05
137	KIF11, PTTG1, PBK, CEP55, RRM2	3.24E-06	9.05E-05
138	KIF11, PTTG1, PBK, CEP55, CDKN3	8.07E-06	1.97E-04
139	KIF11, PTTG1, PBK, ORC6L, RRM2	6.78E-06	1.70E-04
140	KIF11, PTTG1, PBK, ORC6L, CDKN3	1.20E-05	2.89E-04
141	KIF11, PTTG1, PBK, RRM2, CDKN3	9.57E-06	3.23E-04
142	KIF11, PTTG1, CENPF, RAD54L, CEP55	2.61E-06	3.59E-05
143	KIF11, PTTG1, CENPF, RAD54L, ORC6L	4.44E-06	6.05E-05
144	KIF11, PTTG1, CENPF, RAD54L, RRM2	3.74E-06	7.18E-05
145	KIF11, PTTG1, CENPF, RAD54L, CDKN3	6.20E-06	1.20E-04
146	KIF11, PTTG1, CENPF, CEP55, ORC6L	4.18E-06	6.30E-05
147	KIF11, PTTG1, CENPF, CEP55, RRM2	3.32E-06	6.85E-05
148	KIF11, PTTG1, CENPF, CEP55, CDKN3	7.63E-06	1.48E-04
149	KIF11, PTTG1, CENPF, ORC6L, RRM2	4.42E-06	9.73E-05
150	KIF11, PTTG1, CENPF, ORC6L, CDKN3	8.18E-06	1.74E-04
151	KIF11, PTTG1, CENPF, RRM2, CDKN3	7.42E-06	2.15E-04
152	KIF11, PTTG1, RAD54L, CEP55, ORC6L	4.18E-06	5.16E-05
153	KIF11, PTTG1, RAD54L, CEP55, RRM2	2.84E-06	5.06E-05
154	KIF11, PTTG1, RAD54L, CEP55, CDKN3	6.14E-06	1.06E-04
155	KIF11, PTTG1, RAD54L, ORC6L, RRM2	9.11E-06	1.32E-04
156	KIF11, PTTG1, RAD54L, ORC6L, CDKN3	1.32E-05	2.04E-04
157	KIF11, PTTG1, RAD54L, RRM2, CDKN3	1.09E-05	2.36E-04
158	KIF11, PTTG1, CEP55, ORC6L, RRM2	4.69E-06	9.13E-05
159	KIF11, PTTG1, CEP55, ORC6L, CDKN3	1.09E-05	1.97E-04
160	KIF11, PTTG1, CEP55, RRM2, CDKN3	8.15E-06	2.06E-04
161	KIF11, PTTG1, ORC6L, RRM2, CDKN3	1.46E-05	3.47E-04
162	KIF11, PBK, CENPF, RAD54L, CEP55	2.68E-06	3.43E-05
163	KIF11, PBK, CENPF, RAD54L, ORC6L	5.01E-06	6.30E-05
164	KIF11, PBK, CENPF, RAD54L, RRM2	3.57E-06	6.57E-05
165	KIF11, PBK, CENPF, RAD54L, CDKN3	6.04E-06	1.09E-04
166	KIF11, PBK, CENPF, CEP55, ORC6L	4.85E-06	6.58E-05
167	KIF11, PBK, CENPF, CEP55, RRM2	3.22E-06	6.32E-05
168	KIF11, PBK, CENPF, CEP55, CDKN3	7.28E-06	1.31E-04
169	KIF11, PBK, CENPF, ORC6L, RRM2	4.98E-06	1.00E-04
170	KIF11, PBK, CENPF, ORC6L, CDKN3	9.01E-06	1.72E-04
171	KIF11, PBK, CENPF, RRM2, CDKN3	6.95E-06	1.88E-04
172	KIF11, PBK, RAD54L, CEP55, ORC6L	5.15E-06	5.78E-05
173	KIF11, PBK, RAD54L, CEP55, RRM2	3.02E-06	5.09E-05
174	KIF11, PBK, RAD54L, CEP55, CDKN3	6.46E-06	1.02E-04
175	KIF11, PBK, RAD54L, ORC6L, RRM2	9.93E-06	1.36E-04
176	KIF11, PBK, RAD54L, ORC6L, CDKN3	1.46E-05	2.06E-04
177	KIF11, PBK, RAD54L, RRM2, CDKN3	1.05E-05	2.14E-04
178	KIF11, PBK, CEP55, ORC6L, RRM2	5.63E-06	9.97E-05
179	KIF11, PBK, CEP55, ORC6L, CDKN3	1.23E-05	1.99E-04
180	KIF11, PBK, CEP55, RRM2, CDKN3	8.09E-06	1.90E-04
181	KIF11, PBK, ORC6L, RRM2, CDKN3	1.59E-05	3.40E-04
182	KIF11, CENPF, RAD54L, CEP55, ORC6L	4.43E-06	3.80E-05
183	KIF11, CENPF, RAD54L, CEP55, RRM2	2.99E-06	3.67E-05

184	KIF11, CENPF, RAD54L, CEP55, CDKN3	5.91E-06	7.26E-05
185	KIF11, CENPF, RAD54L, ORC6L, RRM2	6.49E-06	7.65E-05
186	KIF11, CENPF, RAD54L, ORC6L, CDKN3	9.96E-06	1.21E-04
187	KIF11, CENPF, RAD54L, RRM2, CDKN3	7.80E-06	1.36E-04
188	KIF11, CENPF, CEP55, ORC6L, RRM2	4.79E-06	6.50E-05
189	KIF11, CENPF, CEP55, ORC6L, CDKN3	1.02E-05	1.33E-04
190	KIF11, CENPF, CEP55, RRM2, CDKN3	7.52E-06	1.37E-04
191	KIF11, CENPF, ORC6L, RRM2, CDKN3	1.04E-05	1.99E-04
192	KIF11, RAD54L, CEP55, ORC6L, RRM2	4.88E-06	5.41E-05
193	KIF11, RAD54L, CEP55, ORC6L, CDKN3	9.54E-06	1.06E-04
194	KIF11, RAD54L, CEP55, RRM2, CDKN3	6.21E-06	1.00E-04
195	KIF11, RAD54L, ORC6L, RRM2, CDKN3	1.79E-05	2.41E-04
196	KIF11, CEP55, ORC6L, RRM2, CDKN3	1.10E-05	1.88E-04
197	PTTG1, PBK, CENPF, RAD54L, CEP55	4.12E-06	5.50E-05
198	PTTG1, PBK, CENPF, RAD54L, ORC6L	7.63E-06	1.04E-04
199	PTTG1, PBK, CENPF, RAD54L, RRM2	5.21E-06	1.04E-04
200	PTTG1, PBK, CENPF, RAD54L, CDKN3	8.74E-06	1.72E-04
201	PTTG1, PBK, CENPF, CEP55, ORC6L	6.86E-06	9.90E-05
202	PTTG1, PBK, CENPF, CEP55, RRM2	4.93E-06	1.03E-04
203	PTTG1, PBK, CENPF, CEP55, CDKN3	1.08E-05	2.06E-04
204	PTTG1, PBK, CENPF, ORC6L, RRM2	7.06E-06	1.61E-04
205	PTTG1, PBK, CENPF, ORC6L, CDKN3	1.25E-05	2.71E-04
206	PTTG1, PBK, CENPF, RRM2, CDKN3	9.01E-06	2.77E-04
207	PTTG1, PBK, RAD54L, CEP55, ORC6L	8.14E-06	9.40E-05
208	PTTG1, PBK, RAD54L, CEP55, RRM2	5.21E-06	9.02E-05
209	PTTG1, PBK, RAD54L, CEP55, CDKN3	1.05E-05	1.72E-04
210	PTTG1, PBK, RAD54L, ORC6L, RRM2	1.67E-05	2.43E-04
211	PTTG1, PBK, RAD54L, ORC6L, CDKN3	2.41E-05	3.61E-04
212	PTTG1, PBK, RAD54L, RRM2, CDKN3	1.61E-05	3.52E-04
213	PTTG1, PBK, CEP55, ORC6L, RRM2	8.87E-06	1.65E-04
214	PTTG1, PBK, CEP55, ORC6L, CDKN3	1.87E-05	3.18E-04
215	PTTG1, PBK, CEP55, RRM2, CDKN3	1.32E-05	3.24E-04
216	PTTG1, PBK, ORC6L, RRM2, CDKN3	2.44E-05	5.78E-04
217	PTTG1, CENPF, RAD54L, CEP55, ORC6L	6.64E-06	5.27E-05
218	PTTG1, CENPF, RAD54L, CEP55, RRM2	5.67E-06	6.36E-05
219	PTTG1, CENPF, RAD54L, CEP55, CDKN3	1.00E-05	1.14E-04
220	PTTG1, CENPF, RAD54L, ORC6L, RRM2	1.14E-05	1.29E-04
221	PTTG1, CENPF, RAD54L, ORC6L, CDKN3	1.60E-05	1.90E-04
222	PTTG1, CENPF, RAD54L, RRM2, CDKN3	1.37E-05	2.27E-04
223	PTTG1, CENPF, CEP55, ORC6L, RRM2	8.53E-06	1.08E-04
224	PTTG1, CENPF, CEP55, ORC6L, CDKN3	1.66E-05	2.03E-04
225	PTTG1, CENPF, CEP55, RRM2, CDKN3	1.52E-05	2.54E-04
226	PTTG1, CENPF, ORC6L, RRM2, CDKN3	1.86E-05	3.53E-04
227	PTTG1, RAD54L, CEP55, ORC6L, RRM2	7.10E-06	7.25E-05
228	PTTG1, RAD54L, CEP55, ORC6L, CDKN3	1.26E-05	1.30E-04
229	PTTG1, RAD54L, CEP55, RRM2, CDKN3	1.02E-05	1.51E-04
230	PTTG1, RAD54L, ORC6L, RRM2, CDKN3	2.79E-05	3.63E-04
231	PTTG1, CEP55, ORC6L, RRM2, CDKN3	1.72E-05	2.74E-04
232	PBK, CENPF, RAD54L, CEP55, ORC6L	8.01E-06	6.69E-05
233	PBK, CENPF, RAD54L, CEP55, RRM2	5.12E-06	6.33E-05
234	PBK, CENPF, RAD54L, CEP55, CDKN3	9.55E-06	1.15E-04
235	PBK, CENPF, RAD54L, ORC6L, RRM2	1.17E-05	1.41E-04
236	PBK, CENPF, RAD54L, ORC6L, CDKN3	1.73E-05	2.12E-04
237	PBK, CENPF, RAD54L, RRM2, CDKN3	1.15E-05	2.06E-04
238	PBK, CENPF, CEP55, ORC6L, RRM2	8.48E-06	1.14E-04
239	PBK, CENPF, CEP55, ORC6L, CDKN3	1.66E-05	2.12E-04
240	PBK, CENPF, CEP55, RRM2, CDKN3	1.16E-05	2.13E-04
241	PBK, CENPF, ORC6L, RRM2, CDKN3	1.69E-05	3.32E-04
242	PBK, RAD54L, CEP55, ORC6L, RRM2	1.01E-05	1.09E-04
243	PBK, RAD54L, CEP55, ORC6L, CDKN3	1.81E-05	1.91E-04
244	PBK, RAD54L, CEP55, RRM2, CDKN3	1.15E-05	1.80E-04
245	PBK, RAD54L, ORC6L, RRM2, CDKN3	3.34E-05	4.45E-04
246	PBK, CEP55, ORC6L, RRM2, CDKN3	2.04E-05	3.33E-04
247	CENPF, RAD54L, CEP55, ORC6L, RRM2	1.01E-05	7.36E-05
248	CENPF, RAD54L, CEP55, ORC6L, CDKN3	1.66E-05	1.25E-04
249	CENPF, RAD54L, CEP55, RRM2, CDKN3	1.32E-05	1.41E-04
250	CENPF, RAD54L, ORC6L, RRM2, CDKN3	2.62E-05	2.79E-04
251	CENPF, CEP55, ORC6L, RRM2, CDKN3	2.18E-05	2.51E-04
252	RAD54L, CEP55, ORC6L, RRM2, CDKN3	1.70E-05	1.65E-04

Table 25

Sub-Panel #	Genes in Sub-Panel	uni pval	multi pval
1	C18orf24, KIF11, PTTG1, PBK, CENPF, RAD54L	1.72E-06	3.87E-05
2	C18orf24, KIF11, PTTG1, PBK, CENPF, CEP55	1.74E-06	4.06E-05
3	C18orf24, KIF11, PTTG1, PBK, CENPF, ORC6L	2.27E-06	5.50E-05
4	C18orf24, KIF11, PTTG1, PBK, CENPF, RRM2	1.94E-06	6.27E-05
5	C18orf24, KIF11, PTTG1, PBK, CENPF, CDKN3	3.86E-06	1.13E-04
6	C18orf24, KIF11, PTTG1, PBK, RAD54L, CEP55	1.38E-06	2.92E-05
7	C18orf24, KIF11, PTTG1, PBK, RAD54L, ORC6L	2.57E-06	5.26E-05
8	C18orf24, KIF11, PTTG1, PBK, RAD54L, RRM2	1.98E-06	5.64E-05
9	C18orf24, KIF11, PTTG1, PBK, RAD54L, CDKN3	3.76E-06	9.78E-05
10	C18orf24, KIF11, PTTG1, PBK, CEP55, ORC6L	2.34E-06	5.13E-05
11	C18orf24, KIF11, PTTG1, PBK, CEP55, RRM2	1.73E-06	5.20E-05
12	C18orf24, KIF11, PTTG1, PBK, CEP55, CDKN3	3.99E-06	1.06E-04
13	C18orf24, KIF11, PTTG1, PBK, ORC6L, RRM2	2.68E-06	8.14E-05
14	C18orf24, KIF11, PTTG1, PBK, ORC6L, CDKN3	5.33E-06	1.45E-04
15	C18orf24, KIF11, PTTG1, PBK, RRM2, CDKN3	4.39E-06	1.61E-04
16	C18orf24, KIF11, PTTG1, CENPF, RAD54L, CEP55	1.43E-06	2.40E-05
17	C18orf24, KIF11, PTTG1, CENPF, RAD54L, ORC6L	2.42E-06	4.01E-05
18	C18orf24, KIF11, PTTG1, CENPF, RAD54L, RRM2	2.13E-06	4.72E-05
19	C18orf24, KIF11, PTTG1, CENPF, RAD54L, CDKN3	3.77E-06	8.01E-05
20	C18orf24, KIF11, PTTG1, CENPF, CEP55, ORC6L	2.14E-06	3.87E-05
21	C18orf24, KIF11, PTTG1, CENPF, CEP55, RRM2	1.81E-06	4.28E-05
22	C18orf24, KIF11, PTTG1, CENPF, CEP55, CDKN3	3.96E-06	8.63E-05
23	C18orf24, KIF11, PTTG1, CENPF, ORC6L, RRM2	2.51E-06	6.17E-05
24	C18orf24, KIF11, PTTG1, CENPF, ORC6L, CDKN3	4.80E-06	1.10E-04
25	C18orf24, KIF11, PTTG1, CENPF, RRM2, CDKN3	4.47E-06	1.33E-04
26	C18orf24, KIF11, PTTG1, RAD54L, CEP55, ORC6L	1.78E-06	2.80E-05
27	C18orf24, KIF11, PTTG1, RAD54L, CEP55, RRM2	1.35E-06	2.90E-05
28	C18orf24, KIF11, PTTG1, RAD54L, CEP55, CDKN3	2.86E-06	5.78E-05
29	C18orf24, KIF11, PTTG1, RAD54L, ORC6L, RRM2	2.73E-06	5.68E-05
30	C18orf24, KIF11, PTTG1, RAD54L, ORC6L, CDKN3	4.89E-06	9.69E-05
31	C18orf24, KIF11, PTTG1, RAD54L, RRM2, CDKN3	4.13E-06	1.11E-04
32	C18orf24, KIF11, PTTG1, CEP55, ORC6L, RRM2	2.07E-06	4.77E-05
33	C18orf24, KIF11, PTTG1, CEP55, ORC6L, CDKN3	4.62E-06	9.75E-05
34	C18orf24, KIF11, PTTG1, CEP55, RRM2, CDKN3	3.76E-06	1.05E-04
35	C18orf24, KIF11, PTTG1, ORC6L, RRM2, CDKN3	5.36E-06	1.54E-04
36	C18orf24, KIF11, PBK, CENPF, RAD54L, CEP55	1.60E-06	2.48E-05
37	C18orf24, KIF11, PBK, CENPF, RAD54L, ORC6L	2.93E-06	4.42E-05
38	C18orf24, KIF11, PBK, CENPF, RAD54L, RRM2	2.25E-06	4.69E-05
39	C18orf24, KIF11, PBK, CENPF, RAD54L, CDKN3	3.96E-06	7.77E-05
40	C18orf24, KIF11, PBK, CENPF, CEP55, ORC6L	2.63E-06	4.28E-05
41	C18orf24, KIF11, PBK, CENPF, CEP55, RRM2	1.94E-06	4.28E-05
42	C18orf24, KIF11, PBK, CENPF, CEP55, CDKN3	4.10E-06	8.25E-05
43	C18orf24, KIF11, PBK, CENPF, ORC6L, RRM2	3.00E-06	6.70E-05
44	C18orf24, KIF11, PBK, CENPF, ORC6L, CDKN3	5.53E-06	1.14E-04
45	C18orf24, KIF11, PBK, CENPF, RRM2, CDKN3	4.53E-06	1.25E-04
46	C18orf24, KIF11, PBK, RAD54L, CEP55, ORC6L	2.38E-06	3.37E-05
47	C18orf24, KIF11, PBK, RAD54L, CEP55, RRM2	1.59E-06	3.17E-05
48	C18orf24, KIF11, PBK, RAD54L, CEP55, CDKN3	3.28E-06	6.04E-05
49	C18orf24, KIF11, PBK, RAD54L, ORC6L, RRM2	3.42E-06	6.47E-05
50	C18orf24, KIF11, PBK, RAD54L, ORC6L, CDKN3	5.94E-06	1.06E-04
51	C18orf24, KIF11, PBK, RAD54L, RRM2, CDKN3	4.48E-06	1.10E-04
52	C18orf24, KIF11, PBK, CEP55, ORC6L, RRM2	2.68E-06	5.58E-05
53	C18orf24, KIF11, PBK, CEP55, ORC6L, CDKN3	5.65E-06	1.06E-04
54	C18orf24, KIF11, PBK, CEP55, RRM2, CDKN3	4.09E-06	1.06E-04
55	C18orf24, KIF11, PBK, ORC6L, RRM2, CDKN3	6.39E-06	1.64E-04
56	C18orf24, KIF11, CENPF, RAD54L, CEP55, ORC6L	2.16E-06	2.48E-05
57	C18orf24, KIF11, CENPF, RAD54L, CEP55, RRM2	1.61E-06	2.51E-05
58	C18orf24, KIF11, CENPF, RAD54L, CEP55, CDKN3	3.15E-06	4.73E-05
59	C18orf24, KIF11, CENPF, RAD54L, ORC6L, RRM2	3.22E-06	4.86E-05
60	C18orf24, KIF11, CENPF, RAD54L, ORC6L, CDKN3	5.39E-06	7.93E-05
61	C18orf24, KIF11, CENPF, RAD54L, RRM2, CDKN3	4.48E-06	8.88E-05
62	C18orf24, KIF11, CENPF, CEP55, ORC6L, RRM2	2.43E-06	4.07E-05
63	C18orf24, KIF11, CENPF, CEP55, ORC6L, CDKN3	4.98E-06	7.87E-05
64	C18orf24, KIF11, CENPF, CEP55, RRM2, CDKN3	3.99E-06	8.32E-05
65	C18orf24, KIF11, CENPF, ORC6L, RRM2, CDKN3	5.75E-06	1.23E-04
66	C18orf24, KIF11, RAD54L, CEP55, ORC6L, RRM2	2.09E-06	3.05E-05
67	C18orf24, KIF11, RAD54L, CEP55, ORC6L, CDKN3	4.10E-06	5.75E-05

68	C18orf24, KIF11, RAD54L, CEP55, RRM2, CDKN3	2.99E-06	5.75E-05
69	C18orf24, KIF11, RAD54L, ORC6L, RRM2, CDKN3	5.96E-06	1.10E-04
70	C18orf24, KIF11, CEP55, ORC6L, RRM2, CDKN3	4.84E-06	9.76E-05
71	C18orf24, PTTG1, PBK, CENPF, RAD54L, CEP55	2.13E-06	3.49E-05
72	C18orf24, PTTG1, PBK, CENPF, RAD54L, ORC6L	4.01E-06	6.47E-05
73	C18orf24, PTTG1, PBK, CENPF, RAD54L, RRM2	2.96E-06	6.61E-05
74	C18orf24, PTTG1, PBK, CENPF, RAD54L, CDKN3	5.32E-06	1.12E-04
75	C18orf24, PTTG1, PBK, CENPF, CEP55, ORC6L	3.31E-06	5.76E-05
76	C18orf24, PTTG1, PBK, CENPF, CEP55, RRM2	2.58E-06	6.11E-05
77	C18orf24, PTTG1, PBK, CENPF, CEP55, CDKN3	5.39E-06	1.16E-04
78	C18orf24, PTTG1, PBK, CENPF, ORC6L, RRM2	3.94E-06	9.70E-05
79	C18orf24, PTTG1, PBK, CENPF, ORC6L, CDKN3	7.28E-06	1.64E-04
80	C18orf24, PTTG1, PBK, CENPF, RRM2, CDKN3	5.60E-06	1.69E-04
81	C18orf24, PTTG1, PBK, RAD54L, CEP55, ORC6L	3.23E-06	4.81E-05
82	C18orf24, PTTG1, PBK, RAD54L, CEP55, RRM2	2.30E-06	4.81E-05
83	C18orf24, PTTG1, PBK, RAD54L, CEP55, CDKN3	4.60E-06	8.92E-05
84	C18orf24, PTTG1, PBK, RAD54L, ORC6L, RRM2	5.25E-06	1.04E-04
85	C18orf24, PTTG1, PBK, RAD54L, ORC6L, CDKN3	9.03E-06	1.68E-04
86	C18orf24, PTTG1, PBK, RAD54L, RRM2, CDKN3	6.40E-06	1.65E-04
87	C18orf24, PTTG1, PBK, CEP55, ORC6L, RRM2	3.64E-06	8.07E-05
88	C18orf24, PTTG1, PBK, CEP55, ORC6L, CDKN3	7.54E-06	1.51E-04
89	C18orf24, PTTG1, PBK, CEP55, RRM2, CDKN3	5.75E-06	1.58E-04
90	C18orf24, PTTG1, PBK, ORC6L, RRM2, CDKN3	9.31E-06	2.56E-04
91	C18orf24, PTTG1, CENPF, RAD54L, CEP55, ORC6L	3.04E-06	3.26E-05
92	C18orf24, PTTG1, CENPF, RAD54L, CEP55, RRM2	2.76E-06	3.94E-05
93	C18orf24, PTTG1, CENPF, RAD54L, CEP55, CDKN3	5.01E-06	6.94E-05
94	C18orf24, PTTG1, CENPF, RAD54L, ORC6L, RRM2	5.32E-06	7.59E-05
95	C18orf24, PTTG1, CENPF, RAD54L, ORC6L, CDKN3	8.47E-06	1.18E-04
96	C18orf24, PTTG1, CENPF, RAD54L, RRM2, CDKN3	7.54E-06	1.39E-04
97	C18orf24, PTTG1, CENPF, CEP55, ORC6L, RRM2	4.00E-06	6.25E-05
98	C18orf24, PTTG1, CENPF, CEP55, ORC6L, CDKN3	7.75E-06	1.14E-04
99	C18orf24, PTTG1, CENPF, CEP55, RRM2, CDKN3	7.39E-06	1.41E-04
100	C18orf24, PTTG1, CENPF, ORC6L, RRM2, CDKN3	1.01E-05	2.05E-04
101	C18orf24, PTTG1, RAD54L, CEP55, ORC6L, RRM2	2.81E-06	3.82E-05
102	C18orf24, PTTG1, RAD54L, CEP55, ORC6L, CDKN3	5.19E-06	6.80E-05
103	C18orf24, PTTG1, RAD54L, CEP55, RRM2, CDKN3	4.52E-06	8.01E-05
104	C18orf24, PTTG1, RAD54L, ORC6L, RRM2, CDKN3	9.28E-06	1.59E-04
105	C18orf24, PTTG1, CEP55, ORC6L, RRM2, CDKN3	7.13E-06	1.34E-04
106	C18orf24, PBK, CENPF, RAD54L, CEP55, ORC6L	3.62E-06	4.04E-05
107	C18orf24, PBK, CENPF, RAD54L, CEP55, RRM2	2.56E-06	3.98E-05
108	C18orf24, PBK, CENPF, RAD54L, CEP55, CDKN3	4.77E-06	7.04E-05
109	C18orf24, PBK, CENPF, RAD54L, ORC6L, RRM2	5.48E-06	8.23E-05
110	C18orf24, PBK, CENPF, RAD54L, ORC6L, CDKN3	8.87E-06	1.28E-04
111	C18orf24, PBK, CENPF, RAD54L, RRM2, CDKN3	6.40E-06	1.27E-04
112	C18orf24, PBK, CENPF, CEP55, ORC6L, RRM2	3.97E-06	6.57E-05
113	C18orf24, PBK, CENPF, CEP55, ORC6L, CDKN3	7.66E-06	1.18E-04
114	C18orf24, PBK, CENPF, CEP55, RRM2, CDKN3	5.80E-06	1.21E-04
115	C18orf24, PBK, CENPF, ORC6L, RRM2, CDKN3	9.04E-06	1.93E-04
116	C18orf24, PBK, RAD54L, CEP55, ORC6L, RRM2	3.96E-06	5.60E-05
117	C18orf24, PBK, RAD54L, CEP55, ORC6L, CDKN3	7.24E-06	9.73E-05
118	C18orf24, PBK, RAD54L, CEP55, RRM2, CDKN3	5.06E-06	9.54E-05
119	C18orf24, PBK, RAD54L, ORC6L, RRM2, CDKN3	1.12E-05	1.97E-04
120	C18orf24, PBK, CEP55, ORC6L, RRM2, CDKN3	8.31E-06	1.62E-04
121	C18orf24, CENPF, RAD54L, CEP55, ORC6L, RRM2	4.42E-06	4.43E-05
122	C18orf24, CENPF, RAD54L, CEP55, ORC6L, CDKN3	7.55E-06	7.43E-05
123	C18orf24, CENPF, RAD54L, CEP55, RRM2, CDKN3	6.45E-06	8.52E-05
124	C18orf24, CENPF, RAD54L, ORC6L, RRM2, CDKN3	1.24E-05	1.61E-04
125	C18orf24, CENPF, CEP55, ORC6L, RRM2, CDKN3	9.97E-06	1.40E-04
126	C18orf24, RAD54L, CEP55, ORC6L, RRM2, CDKN3	6.94E-06	8.69E-05
127	KIF11, PTTG1, PBK, CENPF, RAD54L, CEP55	2.07E-06	3.50E-05
128	KIF11, PTTG1, PBK, CENPF, RAD54L, ORC6L	3.78E-06	6.35E-05
129	KIF11, PTTG1, PBK, CENPF, RAD54L, RRM2	2.97E-06	6.83E-05
130	KIF11, PTTG1, PBK, CENPF, RAD54L, CDKN3	4.93E-06	1.10E-04
131	KIF11, PTTG1, PBK, CENPF, CEP55, ORC6L	3.31E-06	5.91E-05
132	KIF11, PTTG1, PBK, CENPF, CEP55, RRM2	2.43E-06	5.90E-05
133	KIF11, PTTG1, PBK, CENPF, CEP55, CDKN3	5.22E-06	1.16E-04
134	KIF11, PTTG1, PBK, CENPF, ORC6L, RRM2	3.78E-06	9.48E-05
135	KIF11, PTTG1, PBK, CENPF, ORC6L, CDKN3	6.65E-06	1.57E-04
136	KIF11, PTTG1, PBK, CENPF, RRM2, CDKN3	5.54E-06	1.75E-04
137	KIF11, PTTG1, PBK, RAD54L, CEP55, ORC6L	3.56E-06	5.37E-05
138	KIF11, PTTG1, PBK, RAD54L, CEP55, RRM2	2.36E-06	5.01E-05

139	KIF11, PTTG1, PBK, RAD54L, CEP55, CDKN3	4.83E-06	9.56E-05
140	KIF11, PTTG1, PBK, RAD54L, ORC6L, RRM2	6.97E-06	1.25E-04
141	KIF11, PTTG1, PBK, RAD54L, ORC6L, CDKN3	1.04E-05	1.88E-04
142	KIF11, PTTG1, PBK, RAD54L, RRM2, CDKN3	8.16E-06	2.00E-04
143	KIF11, PTTG1, PBK, CEP55, ORC6L, RRM2	3.85E-06	8.60E-05
144	KIF11, PTTG1, PBK, CEP55, ORC6L, CDKN3	8.12E-06	1.65E-04
145	KIF11, PTTG1, PBK, CEP55, RRM2, CDKN3	5.83E-06	1.62E-04
146	KIF11, PTTG1, PBK, ORC6L, RRM2, CDKN3	1.11E-05	2.89E-04
147	KIF11, PTTG1, CENPF, RAD54L, CEP55, ORC6L	3.14E-06	3.79E-05
148	KIF11, PTTG1, CENPF, RAD54L, CEP55, RRM2	2.37E-06	3.85E-05
149	KIF11, PTTG1, CENPF, RAD54L, CEP55, CDKN3	4.53E-06	7.23E-05
150	KIF11, PTTG1, CENPF, RAD54L, ORC6L, RRM2	4.93E-06	7.80E-05
151	KIF11, PTTG1, CENPF, RAD54L, ORC6L, CDKN3	7.54E-06	1.21E-04
152	KIF11, PTTG1, CENPF, RAD54L, RRM2, CDKN3	6.44E-06	1.38E-04
153	KIF11, PTTG1, CENPF, CEP55, ORC6L, RRM2	3.40E-06	6.05E-05
154	KIF11, PTTG1, CENPF, CEP55, ORC6L, CDKN3	6.92E-06	1.17E-04
155	KIF11, PTTG1, CENPF, CEP55, RRM2, CDKN3	5.56E-06	1.24E-04
156	KIF11, PTTG1, CENPF, ORC6L, RRM2, CDKN3	7.89E-06	1.85E-04
157	KIF11, PTTG1, RAD54L, CEP55, ORC6L, RRM2	3.52E-06	5.28E-05
158	KIF11, PTTG1, RAD54L, CEP55, ORC6L, CDKN3	6.71E-06	9.84E-05
159	KIF11, PTTG1, RAD54L, CEP55, RRM2, CDKN3	4.87E-06	9.78E-05
160	KIF11, PTTG1, RAD54L, ORC6L, RRM2, CDKN3	1.28E-05	2.23E-04
161	KIF11, PTTG1, CEP55, ORC6L, RRM2, CDKN3	7.63E-06	1.62E-04
162	KIF11, PBK, CENPF, RAD54L, CEP55, ORC6L	3.57E-06	4.03E-05
163	KIF11, PBK, CENPF, RAD54L, CEP55, RRM2	2.38E-06	3.74E-05
164	KIF11, PBK, CENPF, RAD54L, CEP55, CDKN3	4.55E-06	6.86E-05
165	KIF11, PBK, CENPF, RAD54L, ORC6L, RRM2	5.27E-06	7.92E-05
166	KIF11, PBK, CENPF, RAD54L, ORC6L, CDKN3	8.06E-06	1.21E-04
167	KIF11, PBK, CENPF, RAD54L, RRM2, CDKN3	6.18E-06	1.27E-04
168	KIF11, PBK, CENPF, CEP55, ORC6L, RRM2	3.80E-06	6.34E-05
169	KIF11, PBK, CENPF, CEP55, ORC6L, CDKN3	7.51E-06	1.17E-04
170	KIF11, PBK, CENPF, CEP55, RRM2, CDKN3	5.40E-06	1.15E-04
171	KIF11, PBK, CENPF, ORC6L, RRM2, CDKN3	8.36E-06	1.82E-04
172	KIF11, PBK, RAD54L, CEP55, ORC6L, RRM2	4.09E-06	5.79E-05
173	KIF11, PBK, RAD54L, CEP55, ORC6L, CDKN3	7.63E-06	1.03E-04
174	KIF11, PBK, RAD54L, CEP55, RRM2, CDKN3	5.03E-06	9.56E-05
175	KIF11, PBK, RAD54L, ORC6L, RRM2, CDKN3	1.35E-05	2.21E-04
176	KIF11, PBK, CEP55, ORC6L, RRM2, CDKN3	8.48E-06	1.65E-04
177	KIF11, CENPF, RAD54L, CEP55, ORC6L, RRM2	3.62E-06	4.01E-05
178	KIF11, CENPF, RAD54L, CEP55, ORC6L, CDKN3	6.50E-06	7.19E-05
179	KIF11, CENPF, RAD54L, CEP55, RRM2, CDKN3	4.70E-06	7.07E-05
180	KIF11, CENPF, RAD54L, ORC6L, RRM2, CDKN3	9.54E-06	1.39E-04
181	KIF11, CENPF, CEP55, ORC6L, RRM2, CDKN3	7.20E-06	1.15E-04
182	KIF11, RAD54L, CEP55, ORC6L, RRM2, CDKN3	7.06E-06	9.78E-05
183	PTTG1, PBK, CENPF, RAD54L, CEP55, ORC6L	5.15E-06	5.99E-05
184	PTTG1, PBK, CENPF, RAD54L, CEP55, RRM2	3.65E-06	5.91E-05
185	PTTG1, PBK, CENPF, RAD54L, CEP55, CDKN3	6.71E-06	1.05E-04
186	PTTG1, PBK, CENPF, RAD54L, ORC6L, RRM2	7.72E-06	1.25E-04
187	PTTG1, PBK, CENPF, RAD54L, ORC6L, CDKN3	1.15E-05	1.87E-04
188	PTTG1, PBK, CENPF, RAD54L, RRM2, CDKN3	8.29E-06	1.84E-04
189	PTTG1, PBK, CENPF, CEP55, ORC6L, RRM2	5.44E-06	9.51E-05
190	PTTG1, PBK, CENPF, CEP55, ORC6L, CDKN3	1.05E-05	1.72E-04
191	PTTG1, PBK, CENPF, CEP55, RRM2, CDKN3	7.92E-06	1.77E-04
192	PTTG1, PBK, CENPF, ORC6L, RRM2, CDKN3	1.13E-05	2.76E-04
193	PTTG1, PBK, RAD54L, CEP55, ORC6L, RRM2	6.39E-06	9.22E-05
194	PTTG1, PBK, RAD54L, CEP55, ORC6L, CDKN3	1.14E-05	1.59E-04
195	PTTG1, PBK, RAD54L, CEP55, RRM2, CDKN3	7.98E-06	1.55E-04
196	PTTG1, PBK, RAD54L, ORC6L, RRM2, CDKN3	2.09E-05	3.62E-04
197	PTTG1, PBK, CEP55, ORC6L, RRM2, CDKN3	1.27E-05	2.57E-04
198	PTTG1, CENPF, RAD54L, CEP55, ORC6L, RRM2	5.82E-06	5.91E-05
199	PTTG1, CENPF, RAD54L, CEP55, ORC6L, CDKN3	9.68E-06	9.87E-05
200	PTTG1, CENPF, RAD54L, CEP55, RRM2, CDKN3	8.33E-06	1.14E-04
201	PTTG1, CENPF, RAD54L, ORC6L, RRM2, CDKN3	1.55E-05	2.19E-04
202	PTTG1, CENPF, CEP55, ORC6L, RRM2, CDKN3	1.24E-05	1.82E-04
203	PTTG1, RAD54L, CEP55, ORC6L, RRM2, CDKN3	1.01E-05	1.28E-04
204	PBK, CENPF, RAD54L, CEP55, ORC6L, RRM2	6.21E-06	6.81E-05
205	PBK, CENPF, RAD54L, CEP55, ORC6L, CDKN3	1.06E-05	1.14E-04
206	PBK, CENPF, RAD54L, CEP55, RRM2, CDKN3	7.37E-06	1.11E-04
207	PBK, CENPF, RAD54L, ORC6L, RRM2, CDKN3	1.51E-05	2.26E-04
208	PBK, CENPF, CEP55, ORC6L, RRM2, CDKN3	1.15E-05	1.82E-04
209	PBK, RAD54L, CEP55, ORC6L, RRM2, CDKN3	1.26E-05	1.69E-04

210	CENPF, RAD54L, CEP55, ORC6L, RRM2, CDKN3	1.26E-05	1.22E-04
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EXAMPLE 1

[00196] The expression profile described here as a prognostic and predictive tool in NSCLC adenocarcinoma was composed of 31 CCP genes (Panel F) and 15 housekeeping genes (Table A) used to normalize RNA content per sample. The gene panel is further described in International Application No. PCT /US2010/020397 (pub. no. WO/2010/080933).

CCG Score

[00197] The CCG score was calculated from RNA expression of 31 CCGs (Panel F) normalized by 15 housekeeper genes (HK). The relative numbers of CCGs (31) and HK genes (15) were optimized in order to minimize the variance of the CCG score. The CCG score is the unweighted mean of CT values for CCG expression, normalized by the unweighted mean of the HK genes so that higher values indicate higher expression. One unit is equivalent to a two-fold change in expression. The CCG scores were centered by the mean value, again determined in the training set.

[00198] A dilution experiment was performed on four of the commercial prostate samples to estimate the measurement error of the CCG score ($se = 0.10$) and the effect of missing values. It was found that the CCG score remained stable as concentration decreased to the point of 10 failures out of the total 31 CCGs. Based on this result, samples with more than 9 missing values were not assigned a CCG score.

Experimental Procedures

[00199] From each FFPE sample block one 5 μ m section was cut and stained with haematoxylin and eosin. Tumor areas were marked by a pathologist. Additional two 10 μ m sections were cut directly adjacent to the H&E stained section. Tumor areas on the unstained sections were identified by alignment with the marked areas on the H&E stain and macro-dissected manually into Eppendorff tubes. Sections were deparaffinized by xylene extractions followed by washes with ethanol. After an overnight incubation with proteinase K, deparaffinized tissue was subjected to RNA extraction using the Qiagen miRNAeasy kit according to manufacturer's instructions. Total RNA was treated with DNASE I to remove potential genomic DNA contamination. Final RNA yield was determined on a Nanodrop spectrophotometer.

[00200] For each sample 500ng RNA was converted to cDNA using the high capacity cDNA archive kit (Applied Biosystems). Newly synthesized cDNA served as template for replicate pre-amplification reactions. Each of the reactions contained 3µl cDNA and a pool of TaqmanTM assays for all 46 genes in the signature (15 housekeeping genes, 31 cell cycle genes). Preamplification was run for 14 cycles to generate sufficient total copies even from a low copy sample to inoculate individual PCR reactions for 46 genes. Preamplification reactions were diluted 1:20 before loading on TaqmanTM low density arrays (TLDA, Applied Biosystems). Raw data for the calculation of the CCP score were the C_t values of the 46 genes from the TLDA arrays. The CCP score was the unweighted mean of C_t values for cell cycle gene expression, normalized by the unweighted mean of the house keeper genes so that higher values indicate higher expression. One unit is equivalent to a two-fold change in expression. The CCP scores were centered by the mean value determined in the commercial training set.

Commercial Samples

[00201] Early stage (IA, IB, IIA, IIB) lung adenocarcinoma samples were purchased from two sources. This sample set was considered the “training” cohort for the purpose of defining centering constants in lung tissue. These constants were used to center the triplicate expression mean of CCP genes before averaging into CCP scores. This avoided giving undue influence of outlier genes when calculating the CCP gene average. CCP scores were ascertained as described above. Distribution of CCP scores in this training cohort was similar to the distribution in any of the clinical sample sets.

Clinical Sample Set 1

[00202] A total of 200 patient samples with early stage lung adenocarcinoma was used in this study. These patients were selected from a cohort ascertained between 1995 and 2001. Staging criteria were following the 6th edition of the IASLC staging guidelines. Clinical parameters of the cohort are summarized in Table B.

Table B

Variable		N
Gender	Male	96
	Female	104
Ethnicity	Caucasian	178
	Non-Caucasian	22

Smoking status	Never smoker	28
	Former Smoker	81
	Current Smoker	91
Recurrence	No	119
	Yes	71
	Unknown	9
Vital Status	Alive	113
	Deceased	87

[00203] CCP scores for 199 samples were generated as described above. One sample did not contain tumor. 38 samples were of advanced stage (IIIA, IIB, IV) and were excluded from analysis. Two samples had undefined metastasis status (Mx) and were removed for analysis purposes. 32 patients had received neoadjuvant treatment. Since this may affect staging and prior staging was not available, neoadjuvant treated samples were omitted from analysis. Four samples were excluded for synchronous cancers and one patient sample was duplicate. For the final analysis 137 stage I and stage II samples remained (*see* Table C).

Table C

		N	Eligible for analysis
Samples		200	200
Stage	IA+IB	129	162
	IIA+IIB	33	
	IIIA+IIIB+III	30	
	IV	8	
M stage	Mx	2	160
Neoadjuvant	No	168	144
	Yes	32	
Adjuvant	No	141	142
	Yes	50	
	Unknown	9	
Synchronous other cancer		4	139
Tumor content	Negative	1	138
Duplicate patient		1	137

[00204] Survival data for the cohort included disease-free survival (DFS, time from surgery to first recurrence or last follow-up for recurrence) and overall survival (OS, time from surgery to death or last follow-up for survival). A total of 45 recurrences and 50 deaths were observed in the 137 samples included in the analysis. However, only 32 deaths were preceded by a recurrence suggesting that a large number of death events were not related to disease. Deaths without recurrence were censored at time of death and not included as cancer-related death events. The “death with recurrence” outcome measure is referred to as DS (disease survival).

[00205] The cohort was analysed by Cox proportional hazard analysis using DS as outcome variable. Besides the CCP score as continuous variable, clinical parameters in the models included stage (numerical, 1A=1, 1B=2, IIa=3, IIB=4), adjuvant treatment (categorical, y/n), age in years, smoking status (numerical, never=1, former=2, current=3) and gender (male/female). In addition, an interaction term for adjuvant treatment and stage was introduced to account for the known difference in treatment outcome in stage IA vs. the remaining stages. The test statistic for the prognostic value of the CCP score is the likelihood ratio for the full model (all clinical variable plus the CCP score) versus the reduced model (all clinical variables, no CCP score).

[00206] In univariate analysis, only stage ($p = 0.000045$), CCP score ($p = 0.0013$) and gender ($p = 0.054$) were significantly correlated with disease survival (*see* Table D).

Table D

Variable	Univariate (Disease Survival)	Multivariate (Disease Survival)
Stage	4.6×10^{-5}	
CCP	0.0013	0.0175 (HR 1.52; 95% CI 1.04, 2.24)
Gender	0.054	
Age	0.22	
Smoking	0.93	
Treatment	0.8	

[00207] In multivariate analysis, CCP score remained a significant predictor of disease survival when added to a model of all clinical parameters ($p = 0.0175$, HR 1.52, 95% CI

1.04, 2.24) . A Kaplan-Meier analysis for the stage I and II cohort using CCP score quartiles is shown in FIG.2. The lowest CCP quartile has a 5-year survival expectation of 98%, the highest CCP quartile has a 5-year survival rate of 60%. The stage distribution within the CCP quartiles is shown in Table E.

Table E

CCP Score Quartile	Stage I	Stage II	Stage I	Stage II	5-year Survival
	(N)	(N)	(%)	(%)	(%)
1	31	2	30	8	98
2	27	5	26	19	78
3	24	8	23	31	76
4	21	11	20	42	60

[00208] Both stage I and stage II patients partition across all four CCP quartiles, supporting the assumption that patients of high risk exist within the lowest stage group and patients with reduced risk can be found among higher stages. Thus, the CCP score can be used to modify treatment considerations depending on risk estimates besides clinical staging criteria.

[00209] To investigate the value of the prognostic signature in stage IB, the clinically most relevant subgroup of early stage NSCLC, a survival analysis was performed in the subset of stage IB samples of set 1. A total of 66 patients were classified as stage IB of which 62 had passing CCP scores and were used for analysis. Within the stage IB subgroup the CCP score remained a significant predictor of outcome ($p = 0.02$). Using the mean CCP score as a threshold for a high risk (above the mean) and low risk group (below the mean), two patient groups with different survival rates (95% vs 75%) could be identified (FIG.3).

Clinical Sample Set 2

[00210] To confirm the results of the first analysis, samples were analyzed from a second, independent cohort of patients cohort ascertained between 2001 and 2005. A total of 57 samples were processed for RNA and CCP scores were determined as in the previous cohort. 55 samples received CCP scores for a passing rate of 96%. Sample quality, success rate and CCP score distribution was similar to the previous set of stage IB samples. Distribution of CCP scores in the stage IB samples from set 1 and set 2 is shown in FIG.4. Clinical characteristics of the two IB sets was also similar except for more recent dates for surgery and follow-up dates in the second cohort. The more contemporary cohort also had a

higher percentage of adjuvant treated samples (47% vs. 14%) reflecting the more aggressive use of adjuvant treatment in recent years. The percentage of smokers declined slightly compared to the older cohort (25% vs. 47%). Males were of higher risk in both cohorts, more so in the second set, but the interaction between gender and outcome was not significant after adjustment for multiple testing.

[00211] Cox proportional hazard analysis for this Set 2 stage IB cohort was performed as before. Overall survival (17 events) and disease survival (9 events) were available as outcome variables for Set 2. In univariate analysis, gender and treatment were significant predictors of overall survival and disease survival. In multivariate analysis, gender, treatment and CCP score predicted outcome. A summary of results for the two stage IB cohorts can be found in Table F (sample Set 1) and Table G (sample Set 2). In addition, tumor size (largest diameter) and pleural invasion was available for analysis. Neither parameter was significant in multivariate analysis.

Table F

	Univariate		Multivariate	
	OS	DS	OS	DS
N events	24/62	13/62	24/62	13/62
Adjuvant Treatment	0.18	NA	0.38	NA
Smoking Status	0.53	0.64	0.28	0.7
Age at Surgery	0.19	0.43	0.1	0.4
Gender	0.23	0.35	0.59	0.94
CCP (HR)	0.02 (1.44)	0.029 (1.43)	0.029 (1.43)	0.024 (1.65)

Table G

	Univariate		Multivariate	
	OS	DS	OS	DS
N events	17/55	Sep-55	17/55	Sep-55
Adjuvant Treatment	0.01	0.04	0.019	0.01
Smoking Status	0.86	0.88	0.33	0.87
Age at Surgery	0.09	0.7	0.59	0.51
Gender	0.00009	0.002	0.002	0.005
CCP (HR)	0.06 (1.41)	0.19 (1.31)	0.01 (2.11)	0.09 (1.78)

Combined Stage IB samples

[00212] To maximize statistical power both sets of stage IB samples were combined for Cox PH analysis. The results, shown in Table H, support the CCP score as a strong prognostic marker of disease outcome with a hazard ratio of 1.5 per CCP score unit.

Table H

	Univariate		Multivariate	
	OS	DS	OS	DS
N events	41/118	22/118	41/118	22/118
Adjuvant Treatment	0.008	0.027	0.011	0.0097
Smoking Status	0.72	0.66	0.45	0.87
Age at Surgery	0.036	0.39	0.17	0.99
Gender	0.0006	0.0077	0.016	0.057
Grade	0.93	0.75	NA	NA
CCP (HR)	0.005 (1.43)	0.017 (1.50)	0.006 (1.46)	0.0135 (1.56)

[00213] Since the distribution of CCP scores in stage IB ranges from < -2 to > 2, the hazard ratio between the patient group with the lowest CCP scores and the patient set with the highest CCP levels rises to almost 7 fold. A Kaplan Meier survival analysis using CCP score quartiles (see FIG.5) for the combined stage IB samples shows that the lowest CCP quartile has a 5-year survival rate of 80% , while the 5-year survival rate for the highest CCP score quartile drops to 30%.

Prediction of treatment benefit

[00214] The RNA signature applied here as a prognostic marker in NSCLC adenocarcinoma measures the expression of proliferation genes. Chemotherapy preferentially targets rapidly proliferating cells by disrupting essential processes in the cell cycle. The inventors thus hypothesized that, in contrast to a conventional multigene panel, the CCP score not only acts as a prognostic (by identifying rapidly progressing cancers) but may also be

indicative of treatment benefit (by identifying cancers that will be most susceptible to disruption of the cell cycle). The combined cohort of stage IB samples had a sufficient number of treated patients to address this question.

[00215] To test for the predictive power of the CCP score, an interaction term for CCP score and adjuvant treatment was added to the model. The test statistic is the likelihood ratio for the full model (all clinical variable, CCP score and CCP:adjuvant treatment interaction term) versus the reduced model (all clinical variables no CCP score, no interaction term). Although the interaction for CCP score and adjuvant treatment was not formally significant at the 0.05 level, it showed a strong trend ($p = 0.07$). Most importantly, the interaction coefficient supported the assumption that high CCP scores receive more treatment benefit. A survival plot using the CCP mean as threshold within the treated and untreated sample groups is shown in FIG.6. The Kaplan Meier plot illustrates two conclusions. First, the prognostic power of the CCP score is most pronounced in the untreated samples with a strong separation between survival rates of the high and low CCP group (high CCP 30% vs low CCP 70%). Second and possibly most unexpectedly, among the high CCP patients, patients treated adjuvantly show a much improved outcome with survival rates close to the low CCP patient group (high CCP untreated 30%, high CCP treated 70%). Thus a high CCP score correlates strongly with a higher likelihood of response to adjuvant chemotherapy (including one of the most important measures of response, *i.e.*, survival).

EXAMPLE 2

Introduction

[00216] This Example 2 builds on the study summarized in Example 1 above by combining the analysis in Example with analysis of additional samples. Unless indicated otherwise, all methods (e.g., sample preparation, gene expression analysis, CCP score calculation, statistical analysis, etc.) in this Example 2 were as described in Example 1. In this study, the CCP score was applied to stage I-II NSCLC ADC patients from a combined sample cohort (referred to herein as Combined Cohort) of 381 FFPE samples.

Patient Populations

[00217] Detailed information regarding patients from the Combined Cohort is provided in Table I. The Combined Cohort was an aggregation of patient samples from two separate source cohorts, designated herein as “S1” and “S2.” *S1 Cohort*: 186 FFPE samples

were obtained from 185 resectable stage I NSCLC ADC patients, and matching clinical data. Samples from 177 patients produced passing CCP scores. Two patients were omitted due to missing clinical data related to stage and adjuvant treatment, and one patient was omitted who died 12 days after surgery. *S2 Cohort*: 294 FFPE samples and 293 matching clinical records were obtained from patients with resectable non-small cell lung adenocarcinoma. 207 patients were stage I-II with passing CCP scores and complete clinical data comparable to the S1 cohort.

Table I

	S1 (N=174)	S2 (N=207)	Total (N=381)
Age mean $\pm$ SD (y)	64 $\pm$ 8	66 $\pm$ 11	65 $\pm$ 10
Sex			
Male	122 (70%)	94 (45%)	216 (57%)
Female	52 (30%)	113 (55%)	165 (43%)
Smoking			
Never	26 (15%)	34 (16%)	60 (16%)
Former	47 (27%)	93 (45%)	140 (37%)
Current	101 (58%)	80 (39%)	181 (48%)
Stage			
IA	120 (69%)	64 (31%)	184 (48%)
IB	54 (31%)	99 (48%)	153 (40%)
IIA	-	27 (13%)	27 (7%)
IIB	-	17 (8%)	17 (4%)
Treatment			
Yes	19 (11%)	46 (22%)	65 (17%)
No	155 (89%)	161 (78%)	316 (83%)
Pleural invasion			
Yes	24 (14%)	80 (39%)	104 (27%)
No	150 (86%)	127 (61%)	277 (73%)
Tumor size <3 cm			
Yes	137 (79%)	103 (50%)	240 (63%)
No	37 (21%)	104 (50%)	141 (37%)
T stage			
T1a	64 (37%)	42 (20%)	106 (28%)
T1b	56 (32%)	32 (15%)	88 (23%)
T2a	54 (31%)	105 (51%)	159 (42%)
T2b	-	17 (8%)	17 (4%)
T3	-	11 (5%)	11 (3%)
N status			
N0	174 (100%)	186 (90%)	360 (94%)

N1	-	21 (10%)	21 (6%)
Recurrence <5 y			
Yes	36 (21%)	55 (27%)	91 (24%)
No	138 (79%)	152 (73%)	290 (76%)
Death from disease <5 y			
Yes	28 (16%)	34 (16%)	62 (16%)
No	146 (84%)	173 (84%)	319 (84%)

Statistical Analysis

[00218] We evaluated the prognostic value of CCP in terms of p-values and standardized hazard ratios from univariate, and multivariate, Cox proportional hazards models. The endpoint was death from disease within five years of surgery. Death from disease was defined as death (of disease if known) following recurrence. Patients who were lost to follow-up or died of other causes were censored at the last observation.

[00219] All p-values in this report are two-sided. Univariate p-values were based on the partial likelihood ratio. Multivariate p-values were based on the partial likelihood ratio for the change in deviance from a full model (which included all relevant covariates) versus a reduced model (which included all covariates except for the covariate being evaluated, and any interaction terms involving the covariate being evaluated). In order to compare hazard ratios corresponding to different gene expression analysis platforms, hazard ratios were standardized to represent the increased risk associated with a one standard deviation increase in CCP score.

Prognostic Information beyond Clinical Variables

[00220] The primary goal was to further validate the results in Example 1 (i.e., CCP score adds a significant amount of prognostic information to that which is captured by conventional clinical parameters). This was accomplished by combining the CCP score with clinical variables in multivariate Cox proportional hazards models. Ideally, these models would include as many relevant clinical variables as possible. In the Combined Cohort, we were able to obtain clinical data for age, gender, smoking status, stage (7th edition TNM), adjuvant treatment, pleural invasion, and tumor size. We hypothesized that the influence of adjuvant treatment might differ by stage, so we included an interaction term for stage with treatment in the cohorts where this information was available.

[00221] To measure the prognostic power of the CCP score as conservatively as possible, we coded categorical clinical variables in such a way as to explain the maximum

possible variability in patient outcomes, essentially overfitting the model with clinical variables. For instance, stage was coded as a 4-level categorical variable (IA, IB, IIA, IIB) rather than a 2-level categorical variable (I,II). This resulted in less significant p-values associated with stage (due to the extra degrees of freedom, and possibly due to having fewer patients in each category), but including this extra information in a multivariate model makes it more difficult for other variables, such as CCP score, to reach significance.

Combining FFPE Cohorts

[00222] To assess the appropriateness of combining the S1 and S2 cohorts, we tested whether clinical differences between the S1 and S2 cohorts were relevant to five year disease-related death. To this end, we constructed Cox proportional hazards models, for each of the clinical variables listed above, consisting of the clinical variable in question, a variable designating cohort, and an interaction term. After adjusting for multiple comparisons, none of the interaction terms were significant at the 5% level in two-sided likelihood ratio tests.

Proportional Hazards and Non-Linear Effects

[00223] Plots of scaled Schoenfeld residuals versus untransformed time were used to evaluate the appropriateness of the proportional hazards assumption for these data. No evidence was found supporting time dependence for the hazard ratio of the CCP score. We also investigated the possibility that CCP score might have a non-linear effect; second- and third-order polynomials for CCP score were tested in Cox proportional hazards models but were not significant at the 5% level.

Tests for Heterogeneity in the CCP Score Hazard Ratio

[00224] We constructed Cox proportional hazards models, for each available clinical variable, consisting of the clinical variable in question, CCP score, and an interaction term. None of these interaction terms reached significance at the 5% level.

[00225] Modeling of Variables: Variables for each patient included age in years as a quantitative variable, gender as a binary variable (male, female), smoking status as a 3-level categorical variable (never, former, current), pathological stage (7th edition TNM classification) as a 4-level categorical variable (IA, IB, IIA, IIB), adjuvant treatment as a binary variable (no, yes), tumor size in centimeters rounded to the nearest millimeter as a quantitative variable, pleural invasion as a binary variable (no, yes), cohort as a 2-level categorical variable, and CCP score as a quantitative variable.

Results

[00226] Figure 9 shows the distribution of the CCP score among the 381 patients in the Combined Cohort. Complete results from univariate and multivariate analysis of Cox proportional hazards models are provided in Table J. In the Combined Cohort, CCP was again the most significant predictor in univariate (p-value: 0.0003) and multivariate analysis (p-value: 0.007, standardized HR: 1.50, 95% CI: 1.11-2.02). The results from multivariate analysis indicate that the CCP score was able to capture a significant amount of prognostic information independent of the many clinical variables available for the S1 and S2 cohorts. Figure 10 shows a Kaplan-Meier plot of 5-year survival against CCP score. 5-year disease survival was 92% in patients with low CCP scores, 79% in patients with medium CCP scores, and 73% in patients with high CCP scores.

Table J

Events/N: 62/381	p-value (unless hazard ratio indicated)	
	Univariate	Multivariate
CCP	3.00E-04	7.00E-03
Standardized CCP Hazard Ratio (95% C.I.)	1.59 (1.23-2.05)	1.5 (1.11-2.02)
Age	0.04	0.12
Gender	2.00E-03	0.01
Smoking	0.32	0.99
Stage	4.00E-03	0.15
Treatment	0.52	0.13
Tumor Size	7.00E-03	0.39
Pleural Inv.	0.01	9.00E-03
Cohort	0.43	0.61
Stage:Treatment	NA	0.09

EXAMPLE 3

[00227] This Example 3 builds on the study summarized in Examples 1 & 2 above by analyzing the relationship between CCP score and absolute benefit from adjuvant treatment in the S2 cohort. Unless indicated otherwise, all methods (e.g., sample preparation, gene expression analysis, CCP score calculation, statistical analysis, etc.) in this Example 3 were as described in Examples 1 & 2. Detailed information regarding patients in the S2 cohort is provided above in the description of Example 2. Of note here, the 207 addressable patients

in S2 included 46 patients who had received adjuvant therapy. The treated patient set from S2 showed significant improvement ($p=0.030$, $HR=0.32$) in 5 year survival (Kaplan-Meier estimate 92.25%, 95% CI 77.70%-97.46%) compared to patients not receiving adjuvant treatment (Kaplan-Meier estimate 77.56%, 95% CI 69.46%–83.76%).

[00228] In this Example 3 it was hypothesized that the absolute benefit from adjuvant treatment (survival in treated patients minus survival in untreated patients) should be greater for patients with high CCP scores than for patients with low CCP scores. Two methods for testing this hypothesis were used. In the first method, we implemented the technique of Zhang & Klein (*Confidence bands for the difference of two survival curves under the proportional hazards model*, LIFETIME DATA ANALYSIS (2001)7:243-254) to evaluate the absolute difference in 5-year predicted risk of disease-related death for patients who received adjuvant treatment versus patients who did not receive adjuvant treatment over the range of observed CCP scores. In the second method, we employed complex contrast coding to test whether the absolute difference, due to treatment, in the hazard of disease related death was greater for patients with high CCP scores than for patients with low CCP scores.

[00229] The Zhang & Klein method may be used, in particular, to test for differences in survival between two treatments (or between patients receiving treatment, and patients not receiving treatment) after adjusting for the effects of other covariates. We used this method to evaluate the difference in 5-year disease-related death between treated and untreated patients after adjusting for the effect of the CCP score. More specifically, we calculated estimates of absolute treatment benefit, together with point wise confidence bands, over the range of CCP scores observed in the S2 patient population (Figure 11).

[00230] Contrast coding was used as follows: To test whether the absolute decrease in the hazard of disease-related death due to adjuvant treatment is significantly greater for patients with high CCP scores than for patients with low CCP scores, we categorized CCP scores as high or low using the median as the cutoff point and assigned each patient to one of four groups: high CCP with adjuvant treatment (ht), high CCP without adjuvant treatment (hu), low CCP with adjuvant treatment (lt), and low CCP without adjuvant treatment (lu). The null hypothesis

$$H_0: ht - hu = lt - lu,$$

or equivalently

$$H_0: ht - hu - lt + lu = 0,$$

was tested with Cox proportional hazards regression, using 5-year disease related death as the outcome, by applying the complex contrast vector $c = (1, -1, -1, 1)$. This analysis indicated significantly greater absolute treatment benefit for patients with high CCP scores compared to patients with low CCP scores ($p=0.0060$). The association between CCP score and absolute treatment benefit maintained significance after adjusting for age, gender, smoking status, stage, tumor size, and pleural invasion status in the complex contrast model ($p=0.024$).

EXAMPLE 4

[00231] This Example 4 builds on the study summarized in Examples 1 & 2 above by modeling and then validating a score combining CCP expression and pathological stage to assess prognosis for (predict) post-surgical risk of cancer-specific death in NSCLC patients. Unless indicated otherwise, all methods (e.g., sample preparation, gene expression analysis, CCP score calculation, statistical analysis, etc.) in this Example 4 were as described in Examples 1 & 2. Detailed information regarding patients in the S1 and S2 cohorts is provided above in the descriptions of Examples 2 & 3.

Training

[00232] A combined prognostic score of pathological stage (pStage) and the CCP expression score was modeled in stage I and II patients without adjuvant treatment from publicly available microarray data from the Director's Consortium (DC) cohort (Shedden *et al.*, Nat. Med. (2008) 14:822-827) and S1 and S2 of the above Examples. To adjust for platform related differences, DC values were centered by processing site and scaled by the ratio of the standard deviations of the CCP score in qPCR and microarray data. The modeling set of 495 patients included 179 patients from the DC cohort and 316 patients from the combined S1/S2 cohort. The outcome measure was five year disease-specific survival. Coefficients for the combination of CCP and pStage were derived from a bivariate Cox proportional hazards model where pathological stage was modeled as numerical variable (IA=1, IB=2, IIA=3, IIB=4). The Cox PH model was stratified by cohort. To ensure consistent contribution of each prognostic factor, all cohorts were evaluated individually. The coefficients for the final model were derived from the combination of all cohorts. The final prognostic score was scaled to represent values between 0 and 80.

[00233] As shown in Figures 12 and 13, hazard ratios for CCP score and pathological stage were consistent across the various cohorts. CCP together with pathological stage provided the best prediction for lung cancer mortality, particularly according to the

following formula: $Prognostic\ score = 20 * (0.33 * CCP\ score + 0.52 * stage) + 15$. Figure 14 plots mortality risk versus combined prognostic score. Performance of CCP and pathological stage individually are shown in Table K below.

Table K

Cohort (Events/N)	Stage HR (95% CI)	CCP HR (95% CI)	Stage p value	CCP p value
S1/S2/DC (90/495)	1.69 (1.33-2.13)	1.39 (1.15-1.69)	2.7 x 10 ⁻⁵	7.8 x 10 ⁻⁴

[00234] As shown in Figure 15, the combined score differentiated 5-year lung cancer mortality risk for patients assigned the same risk based on pathological stage alone. Specifically, in the combined S1/S2 cohort, pathological stage alone provided estimates of 5-year risk of cancer-specific death of 12.6% (stage IA), 22.6% (stage IB), 38.4% (stage IIA) and 60% (stage IIB). In the same cohort, the prognostic score could separate stage IA patients with 5-year risk estimates ranging from 6% to 24%. Similarly increased discrimination of risk estimates were observed for stage IB (10% to 42%), stage IIA (21% to 63%) and stage IIB patients (32% to 75%).

Validation

[00235] Both the CCP score alone and the combined prognostic score discussed/derived above were validated in a large independent cohort. 650 patients in two cohorts (V1 and V2) aggregated for this validation met the following criteria: Stage I-II NSCLC ADC by 7th edition IASLC staging; complete surgical resection; no neo-adjuvant treatment; no adjuvant chemotherapy or radiation within 12 weeks of surgery. Characteristics of the patient cohorts are shown in Table L below.

Table L

	V1 N=474 N (%)	V2 N=176 N (%)
Age at Diagnosis		
Median	67	68
SD	11	10
Sex		
Male	172 (36)	69 (39)
Female	302 (64)	107 (61)
Tumor Size < 3cm		

Yes	394 (83)	76 (43)
No	80 (17)	100 (57)
Stage		
IA	309 (65)	36 (20)
IB	142 (30)	53 (30)
IIA	15 (3)	62 (35)
IIB	8 (2)	25 (14)
Pleural Invasion*		
Yes	114 (24)	64 (36)
No	343 (72)	112 (64)
Disease related death at 5y		
Yes	92 (19)	60 (34)
No	382 (81)	116 (66)

* Pleural invasion data were not available for 17 patients

[00236] Archived FFPE samples from surgically resected stage I-II lung adenocarcinomas were obtained and samples were processed to derive CCP scores as described in Examples 1 & 2. The pre-defined prognostic score (PS) discussed above was calculated for each patient. A PS cut-point was determined such that the percentage of stage IA patients having a PS at or below the cutpoint was close as possible to 85%, in line with published estimates of lung cancer-specific survival in stage IA patients.

[00237] Statistical analysis was performed as described above. The association of CCP, and the PS, with 5-year lung cancer mortality was evaluated using Cox proportional hazards models and likelihood ratio tests. The Mantel-Cox logrank test was used to evaluate the difference in 5-year lung cancer mortality for patients with PS scores at or below the cut-point versus patients with scores above the cut-point. All p-values are two-sided.

[00238] Figure 16 shows predictions of 5 year lung cancer specific survival by PS. Low and high risk were classified by a cut-off predefined as the 85% percentile of the PS in stage IA patients. There is a significant difference between the average risk in the two patient groups.

[00239] Figure 17 shows that patients in the low PS group had significantly more favorable 5-year survival than patients in the high PS group (Log-rank $P = 3.8 \times 10^{-7}$).

[00240] Figure 18 shows improved risk stratification by PS compared to pathological stage alone. Specifically, the clusters of data points at 18%, 28%, 42% and 60% risk represent the percent risk of disease-specific death within 5 years for pathological stages IA, IB, IIA and IIB, respectively. When pathological stage is combined with CCP score

according to the model derived from the training study above, however, significantly more detailed risk can be assigned to patients who would all be assigned identical risk according to pathological stage alone. The range of risk according to PS for each pathological stage is shown by the horizontal spread of the data points in Figure 18 and is summarized in Table M below.

Table M

Pathological Stage	Risk according to PS					
	Minimum	1st quartile	2nd quartile	Mean	3rd quartile	Maximum
IA	11%	15%	18%	18%	21%	34%
IB	17%	25%	29%	29%	33%	43%
IIA	27%	38%	43%	44%	48%	62%
IIB	38%	54%	61%	59%	64%	68%

[00241] Table N below provides hazard ratios and p-values showing how CCP score alone is a significant prognostic marker after adjustment for clinical variables. Results from univariate and multivariate Cox proportional hazards analysis are shown. Multivariate analysis, and univariate analysis of pleural invasion, included 633 patients with 147 events. All other univariate analyses included 650 patients with 152 events. Pleural invasion data were not available for 17 patients.

Table N

	Univariate		Multivariate	
	HR (95% CI)	P-Value	HR (95% CI)	P-Value
CCP*	1.79 (1.42-2.27)	1.1×10^{-6}	1.46 (1.12-1.90)	0.005
Age	1.02 (1.00-1.04)	0.0097	1.02 (1.01-1.04)	0.01
Gender		0.0091		0.064
Male	1		1	
Female	0.65 (0.47-0.90)		0.73 (0.53-1.02)	
Stage		7.7×10^{-9}		0.0023
IA	1		1	
IB	1.65 (1.11-2.44)		1.72 (1.00-2.96)	
IIA	3.79 (2.47-5.75)		3.47 (1.84-6.5)	
IIB	3.30 (1.76-5.77)		3.42 (1.28-8.62)	
Tumor Size#	1.20 (1.11-1.29)	1.1×10^{-5}	1.01 (0.88-1.15)	0.93
Pleural Invasion	1.30 (0.91-1.82)	0.14	0.83 (0.53-1.29)	0.41
Cohort		0.00092		0.47
V1	1		1	
V2	1.76 (1.26-2.43)		0.86 (0.56-1.3)	

* Hazard ratio is reported per interquartile range of the CCP score.

Hazard ratio is reported per cm, rounded to the nearest mm.

[00242] Table O below shows the separate prognostic value of the PS and pathological stage in univariate and bivariate models. The combination of pathological stage and CCP score into the Prognostic Score captures significant prognostic information that is not provided by pathological stage alone. Analyses included 650 patients with 152 events.

Table O

	Univariate		Bivariate	
	HR (95% CI)	P-Value	HR (95% CI)	P-Value
PS*	2.01 (1.64-2.45)	2.8×10 ⁻¹¹	1.86 (1.16-2.97)	0.0093
Stage		7.7×10 ⁻⁹		0.38
IA	1		1	
IB	1.65 (1.11-2.44)		1.03 (0.61-1.75)	
IIA	3.79 (2.47-5.75)		1.45 (0.62-3.35)	
IIB	3.30 (1.76-5.77)		0.92 (0.29-2.82)	

* Hazard ratio is reported per interquartile range of the PS score.

[00243] Table P below shows the separate prognostic value of the PS and pathological stage in univariate and bivariate models when restricted to stage IA-IB disease. The combination of pathological stage and CCP score into the Prognostic Score captures significant prognostic information that is not provided by pathological stage alone when restricted to stage IA-IB disease. Analyses included 540 patients with 101 events.

Table P

	Univariate		Bivariate	
	HR (95%CI)	P-Value	HR (95%CI)	P-Value
PS*	1.67 (1.27-2.20)	0.00027	1.74 (1.16-2.61)	0.008
Stage		0.012		0.8
IA	1		1	
IB	1.65 (1.12-2.44)		0.93 (0.52-1.66)	

* Hazard ratio is reported per interquartile range of the PS score.

EXAMPLE 5

[00244] This Example 5 builds on the study summarized in Examples 1 & 2 above by combining the methods in Example 1 with analysis of additional samples, combining CCP expression and pathological stage to assess prognosis for (predict) post-surgical risk of death in patients diagnosed with lung carcinoids. Unless

indicated otherwise, all methods (e.g., CCP score calculation, statistical analysis, etc.) in this Example 5 were as described in Examples 1 & 2.

[00245] In this study, CCP scores were generated as above for stage IA, IB, IIA, IIB, and IIIB lung carcinoid patients from publically available microarray data (Rousseaux *et al.*, Ectopic Activation of Germline and Placental Genes Identifies Aggressive Metastasis-Prone Lung Cancers. *Sci. Transl. Med.* (2013) 186:66). Twenty-three carcinoid samples were analyzed, 11 patients with stage IA, seven patients with stage IB, 2 patients with IIA, two patients with stage IIB, and one patient with stage IIIB. The outcome measure was survival.

[00246] The association of CCP with mortality was evaluated using the Cox proportional hazards model. Results from univariate and multivariate analysis of Cox proportional hazards models are provided in Table Q. In the lung carcinoid patients, CCP was the most significant predictor in univariate and multivariate analysis.

Table Q

Events/N: 5/23	p-value	
	Univariate	Multivariate
CCP	0.00125	0.0035
Stage	0.168	0.885
Age	0.15	NA

EXAMPLE 6

[00247] This Example 6 builds on the study summarized in Examples 1 & 2 above by combining the methods in Example 1 with analysis of additional samples, combining CCP expression and pathological stage to assess prognosis for (predict) post-surgical risk of death in patients diagnosed with lung carcinoids. Unless indicated otherwise, all methods (e.g., sample preparation, gene expression analysis, CCP score calculation, statistical analysis, etc.) in this Example 6 were as described in Examples 1 & 2.

[00248] In this study, CCP scores for 99 lung carcinoid samples were generated as described above. Two samples were removed because the patients died six and thirteen days after surgery, presumably from surgical complications. One sample had undefined metastasis status and was removed from the analysis. One sample was removed because it did lacked

staging data, two samples were removed because they did not include clear follow-up dates, and two samples diagnosed as large-cell neuroendocrine carcinomas were removed because there were too few samples to obtain meaningful outcome analysis.

[00249] 91 samples were used in the survival analysis, with 6 deaths preceded by a recurrence. Disease is spread among two histological groups: atypical (16, six recurrences, four deaths with disease), and typical (75, five recurrences, two deaths with disease). Stage was coded as a 4-level categorical variable (IA, IB, IIA/IIIB, and IIIA/IIIB/IV).

[00250] The association of CCP with both death with disease, and disease free survival in lung carcinoid patients was evaluated using the Cox proportional hazards model. Results from univariate analysis of Cox proportional hazards models are provided in Table R. In the lung carcinoid patients, CCP was the most significant predictor of death with disease, and is a highly significant predictor of recurrence.

Table R

Variable	p-value	
	Outcome: death with disease n=91, events=6	Outcome: recurrence n=91, events=11
CCP	0.0014	0.006
Stage	0.007	0.0235
Histotype	0.0018	0.00069
Age	0.745	0.286
Gender	0.093	0.0076
Multifocal	0.573	0.83
Smoking	0.318	0.378

[00251] The association of CCP and death with disease in atypical carcinoid patients alone was evaluated using the Cox proportional hazards model. CCP is a highly significant predictor of death with recurrence of disease in atypical carcinoid patients (N=14, 4 events, p-value 0.0102).

[00252] All publications and patent applications mentioned in the specification are indicative of the level of those skilled in the art to which this invention pertains. All publications and patent applications are herein incorporated by reference to the same extent as if each individual publication or patent application was specifically and individually indicated

to be incorporated by reference. The mere mentioning of the publications and patent applications does not necessarily constitute an admission that they are prior art to the instant application.

[00253] Although the foregoing invention has been described in some detail by way of illustration and example for purposes of clarity of understanding, it will be obvious that certain changes and modifications may be practiced within the scope of the appended claims.

CLAIMS

What is claimed is:

1. An *in vitro* method of classifying lung cancer comprising:
 - (1) determining the expression of a panel of genes comprising at least 4 CCGs from Table 1 in a sample;
 - (2) providing a test value by
 - (a) weighting the determined expression of each of a plurality of test genes selected from the panel of biomarkers with a predefined coefficient, wherein said plurality of test genes comprises said CCGs; and
 - (b) combining the weighted expression to provide the test value, wherein the combined weight given to said CCGs is at least 40% of the total weight given to the expression of said plurality of test genes; and
 - (3) correlating said test value to
 - (a) an unfavorable classification if said test value reflects high expression of the plurality of test genes; or
 - (b) a favorable classification if said test value reflects low or normal expression of the plurality of test genes.
2. The method of Claim 1, wherein at least 75% of said plurality of test genes are CCGs from Table 2.
3. The method of Claim 1, wherein said panel of genes and said plurality of test genes each comprise the top 3 genes in any one of Table 2, 3, 5, 6, 7, 12, 13, 14, 15, 16, 17, 18 or 19.
4. The method of Claim 1, wherein said panel of genes and said plurality of test genes each comprise the CCGs in Panel F.
5. The method of Claim 1, wherein said unfavorable classification is chosen from the group consisting of (a) a poor prognosis, (b) an increased likelihood of cancer progression, (c) an increased likelihood of cancer recurrence, (d) an increased likelihood of cancer-specific death, or (e) a decreased likelihood of response to treatment with a particular regimen.

6. The method of Claim 5, wherein said unfavorable classification is an increased likelihood of cancer-specific death.

7. The method of Claim 5, wherein said unfavorable classification is a decreased likelihood of response to treatment comprising chemotherapy.

8. The method of Claim 1, wherein said favorable classification is chosen from the group consisting of (a) a good prognosis, (b) no increased likelihood of cancer progression, (c) no increased likelihood of cancer recurrence, (d) no increased likelihood of cancer-specific death, or (e) an increased likelihood of response to treatment with a particular regimen.

9. The method of Claim 8, wherein said favorable classification is no increased likelihood of cancer-specific death.

10. The method of Claim 8, wherein said favorable classification is an increased likelihood of response to treatment comprising chemotherapy.

11. A method of determining the prognosis of a patient having lung cancer and/or the likelihood of response in said patient to a particular treatment, comprising:

obtaining a sample from said patient;

determining the expression levels of a panel of genes in said sample including at least 4 CCGs;

providing a test value by (1) weighting the determined expression of each of a plurality of test genes selected from said panel of genes with a predefined coefficient, and (2) combining the weighted expression to provide said test value, wherein at least 75%, at least 85% or at least 95% of said plurality of test genes are CCGs; and

correlating increased expression of said plurality of test genes to a poor prognosis and/or an increased likelihood of response to the particular treatment regimen.

12. The method of Claim 11, wherein the combined weight given to said at least 4 CCGs is at least 40% of the total weight given to the expression of all of said plurality of test genes.

13. The method of Claim 11 or 12, wherein said determining step comprises:
measuring the amount of mRNA in said tumor sample transcribed from each of between 6 and 200 CCGs; and

measuring the amount of mRNA of one or more housekeeping genes in said tumor sample.

14. The method of Claim 11 or 12 or 13, wherein the expression of at least 8 CCGs are determined and weighted.

15. The method of any one of Claims 11 to 14, wherein said particular treatment regimen comprises chemotherapy.

16. The method of any one of Claims 11 to 15, further comprising comparing said test value to a reference value, wherein a correlation to a poor prognosis and/or an increased likelihood of response to the particular treatment regimen is made if said test value is greater than said reference value.

17. The method of any one of Claims 11 to 16, wherein the expression levels of from 6 to about 200 CCGs are measured.

18. The method of Claim 15, wherein said particular treatment regimen comprises adjuvant chemotherapy.

19. A method of treating cancer in a patient having lung cancer, comprising:
determining in a sample from said patient the expression of a panel of genes in said sample including at least 4 CCGs;

providing a test value by (1) weighting the determined expression of each of a plurality of test genes selected from said panel of genes with a predefined coefficient, and (2) combining the weighted expression to provide said test value, wherein at least 60% or 75% of said plurality of test genes are CCGs, wherein an increased level of expression of said plurality of test genes indicates a poor prognosis and/or an increased likelihood of response to a treatment regimen comprising chemotherapy; and

administering to said patient an anti-cancer drug, or recommending or prescribing or initiating a treatment regimen comprising chemotherapy based at least in part on whether a poor prognosis and/or an increased likelihood of response to a treatment regimen comprising chemotherapy is indicated.

20. A kit for prognosing cancer in a patient having lung cancer and/or for determining the likelihood of response to a treatment regimen comprising chemotherapy, comprising, in a compartmentalized container:

a plurality of PCR primer pairs for PCR amplification of at least 5 test genes, wherein less than 10%, 30% or less than 40% of all of said at least 8 test genes are non-CCGs; and one or more PCR primer pairs for PCR amplification of at least one housekeeping gene.

21. A kit for prognosing cancer in a patient having lung cancer and/or for determining the likelihood of response to a treatment regimen comprising chemotherapy, comprising, in a compartmentalized container:

a plurality of probes for hybridizing to at least 5 test genes under stringent hybridization conditions, wherein less than 10%, 30% or less than 40% of all of said at least 8 test genes are non-CCGs; and

one or more probes for hybridizing to at least one housekeeping gene.

22. A kit consisting essentially of, in a compartmentalized container:

a first plurality of PCR reaction mixtures for PCR amplification of between 5 or 10 and 300 test genes, wherein at least 50%, at least 60% or at least 80% of said 5 or 10 to 300 test genes are CCGs, and wherein each reaction mixture comprises a PCR primer pair for PCR amplifying one of said test genes; and

a second plurality of PCR reaction mixtures for PCR amplification of at least one housekeeping gene.

23. The kit of any one of Claims 20-22, wherein CCGs constitute no less than 10% of the total number of said test genes.

24. The kit of any one of Claims 20-22, wherein CCGs constitute no less than 20% of the total number of said test genes.

25. Use of

(1) a plurality of PCR primer pairs suitable for PCR amplification of at least 4 CCGs; and

(2) one or more PCR primer pairs suitable for PCR amplification of at least one housekeeping gene,

for the manufacture of a diagnostic product for determining the expression of said test genes in a sample from a patient having lung cancer, to predict the prognosis of cancer in said patient and/or to determine the likelihood of response in said patient to a treatment regimen comprising chemotherapy, wherein an increased level of said expression indicates a poor prognosis or an increased likelihood of response in the patient.

26. The use of Claim 25, wherein said plurality of PCR primer pairs are suitable for PCR amplification of at least 8 CCGs.

27. The use of Claim 25 or 26, wherein said plurality of PCR primer pairs are suitable for PCR amplification of from 4 to about 300 test genes, no greater than 10%, 30% or less than 50% of which being non-CCGs.

28. The use of Claim 25 or 26, wherein said plurality of PCR primer pairs are suitable for PCR amplification of from 20 to about 300 test genes, at least 25% of which being CCGs.

29. Use of

(1) a plurality of probes for hybridizing to at least 4 CCGs under stringent hybridization conditions; and

(2) one or more probes for hybridizing to at least one housekeeping gene under stringent hybridization conditions,

for the manufacture of a diagnostic product for determining the expression of said test genes in a sample from a patient having lung cancer, to predict the prognosis of cancer in said patient and/or to determine the likelihood of response in said patient to a treatment regimen comprising chemotherapy, wherein an increased level of said expression indicates a poor prognosis or an increased likelihood of response in the patient.

30. The use of Claim 28, wherein said plurality of probes are suitable for hybridization to at least 8 different CCGs.

31. The use of Claim 28 or 29, wherein said plurality of probes are suitable for hybridization to from 4 to about 300 test genes, no greater than 10%, 30% or less than 50% of which being non-CCGs.

32. The use of Claim 28 or 29, wherein said plurality of probes are suitable for hybridization to from 20 to about 300 test genes, at least 25% of which being CCGs.

33. A system for prognosing cancer in a patient having lung cancer and/or for determining the likelihood of response to a treatment regimen comprising chemotherapy, comprising:

a sample analyzer for determining the expression levels of a panel of genes in a sample including at least 4 CCGs, wherein the sample analyzer contains the sample which is from said patient, or cDNA molecules from mRNA expressed from the panel of genes; and

a first computer program for (a) receiving gene expression data on at least 4 test genes selected from the panel of genes, (b) weighting the determined expression of each of the test genes, and (c) combining the weighted expression to provide a test value, wherein at least 50%, at least at least 75% of at least 4 test genes are CCGs; and

a second computer program for comparing the test value to one or more reference values each associated with a predetermined prognosis and/or a predetermined likelihood of response to the particular treatment regimen.

34. A system for prognosing cancer in a patient having lung cancer and/or for determining the likelihood of response to a treatment regimen comprising chemotherapy, comprising:

(1) a sample analyzer for determining the expression levels of a panel of genes including at least 4 CCGs in a sample from said patient, wherein the sample analyzer contains the tumor sample, RNA expressed from the panel of genes, or DNA synthesized from such RNA; and

(2) a first computer subsystem programmed for (a) receiving gene expression data on at least 4 test genes selected from the panel of genes, (b) weighting the determined expression of each of the test genes, and (c) combining the weighted expression to provide a test value, wherein the combined weight given to said at least 4 CCGs is at least 40% of the total weight given to the expression of all of said plurality of test genes; and

(3) a second computer subsystem programmed for comparing the test value to one or more reference values each associated with a predetermined prognosis and/or a predetermined likelihood of response to the particular treatment regimen.

35. The system of Claim 33 or Claim 34, further comprising a display module displaying the comparison between the test value to the one or more reference values, or displaying a result of the comparing step.

36. The method of any one of Claims 1 to 19, wherein said CCGs are the top 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 20, 25, 30, 35, 40 genes listed in any of Tables 5, 6, 7, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, or 23.

37. The kit of any one of Claims 20 to 24, wherein said CCGs are the top 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 20, 25, 30, 35, 40 genes listed in any of Tables 5, 6, 7, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, or 23.

38. The use of any one of Claims 25 to 32, wherein said CCGs are the top 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 20, 25, 30, 35, 40 genes listed in any of Tables 5, 6, 7, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, or 23.

39. The system of any one of Claims 33 to 35, wherein said CCGs are the top 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 20, 25, 30, 35, 40 genes listed in any of Tables 5, 6, 7, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, or 23.

40. The method of any one of Claims 1 to 19, wherein said CCGs are chosen from the genes listed in any of Tables 1, 2, 3, 5, 6, 7, 10, 11, 12, 13, 14, or 15 or any sub-panel of Panel F listed in any of Tables 21, 22, 23, 24 or 25.

41. The kit of any one of Claims 20 to 24, wherein said CCGs are chosen from the genes listed in any of Tables 1, 2, 3, 5, 6, 7, 10, 11, 12, 13, 14, or 15 or any sub-panel of Panel F listed in any of Tables 21, 22, 23, 24 or 25.

42. The use of any one of Claims 25 to 32, wherein said CCGs are chosen from the genes listed in any of Tables 1, 2, 3, 5, 6, 7, 10, 11, 12, 13, 14, or 15 or any sub-panel of Panel F listed in any of Tables 21, 22, 23, 24 or 25.

43. The system of any one of Claims 33 to 35, wherein said CCGs are chosen from the genes listed in any of Tables 1, 2, 3, 5, 6, 7, 10, 11, 12, 13, 14, or 15 or any sub-panel of Panel F listed in any of Tables 21, 22, 23, 24 or 25.

44. The method of any one of Claims 1 to 19, wherein said CCGs are the genes listed in Table 1, 2, 3, 5, 6, 7, 10, 11, 12, 13, 14, or 15 or any sub-panel of Panel F listed in any of Tables 21, 22, 23, 24 or 25.

45. The kit of any one of Claims 20 to 24, wherein said CCGs are the genes listed in Table 1, 2, 3, 5, 6, 7, 10, 11, 12, 13, 14, or 15 or any sub-panel of Panel F listed in any of Tables 21, 22, 23, 24 or 25.

46. The use of any one of Claims 25 to 32, wherein said CCGs are the genes listed in Table 1, 2, 3, 5, 6, 7, 10, 11, 12, 13, 14, or 15 or any sub-panel of Panel F listed in any of Tables 21, 22, 23, 24 or 25.

47. The system of any one of Claims 33 to 35, wherein said CCGs are the genes listed in Table 1, 2, 3, 5, 6, 7, 10, 11, 12, 13, 14, or 15 or any sub-panel of Panel F listed in any of Tables 21, 22, 23, 24 or 25.

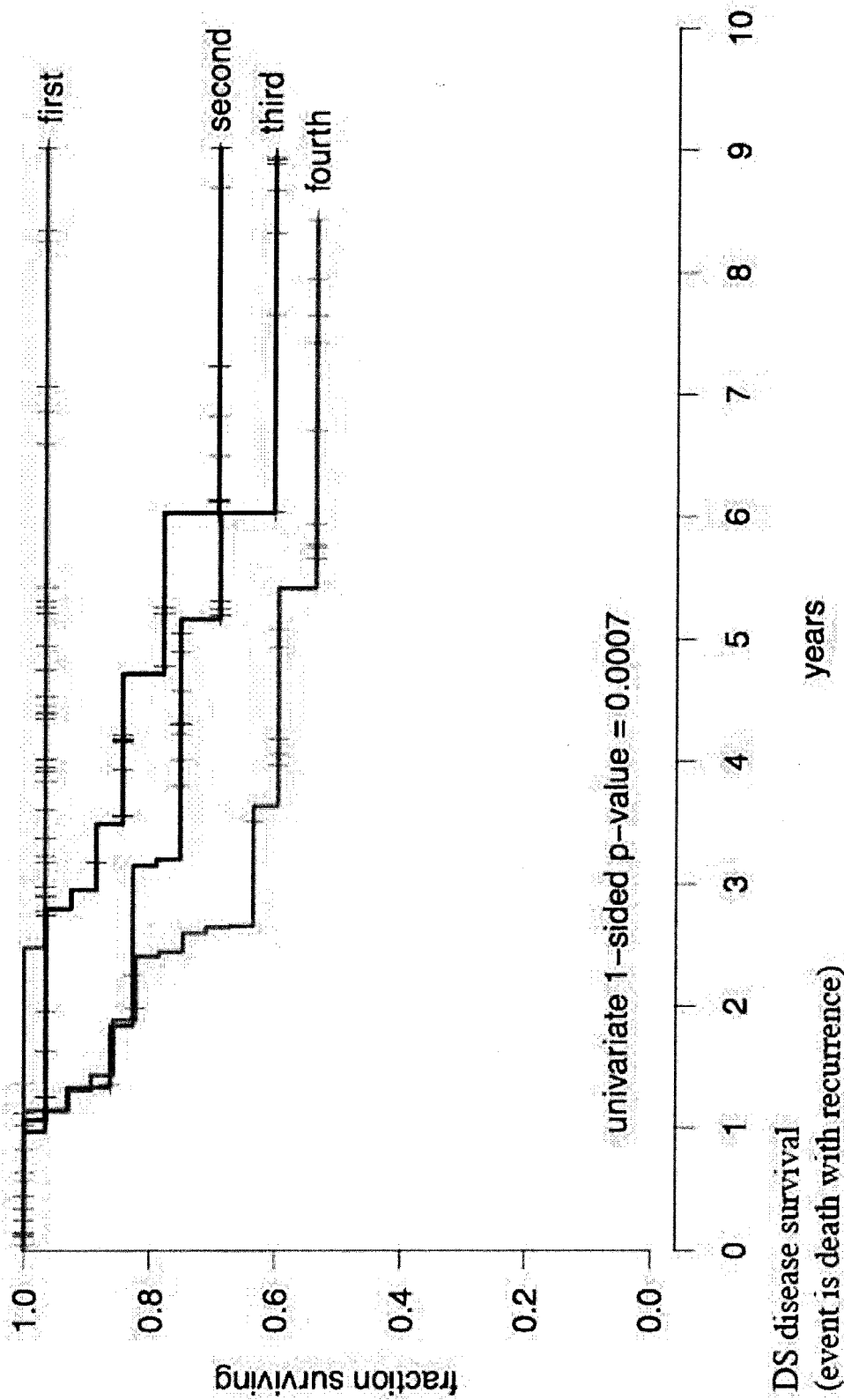


FIGURE 1

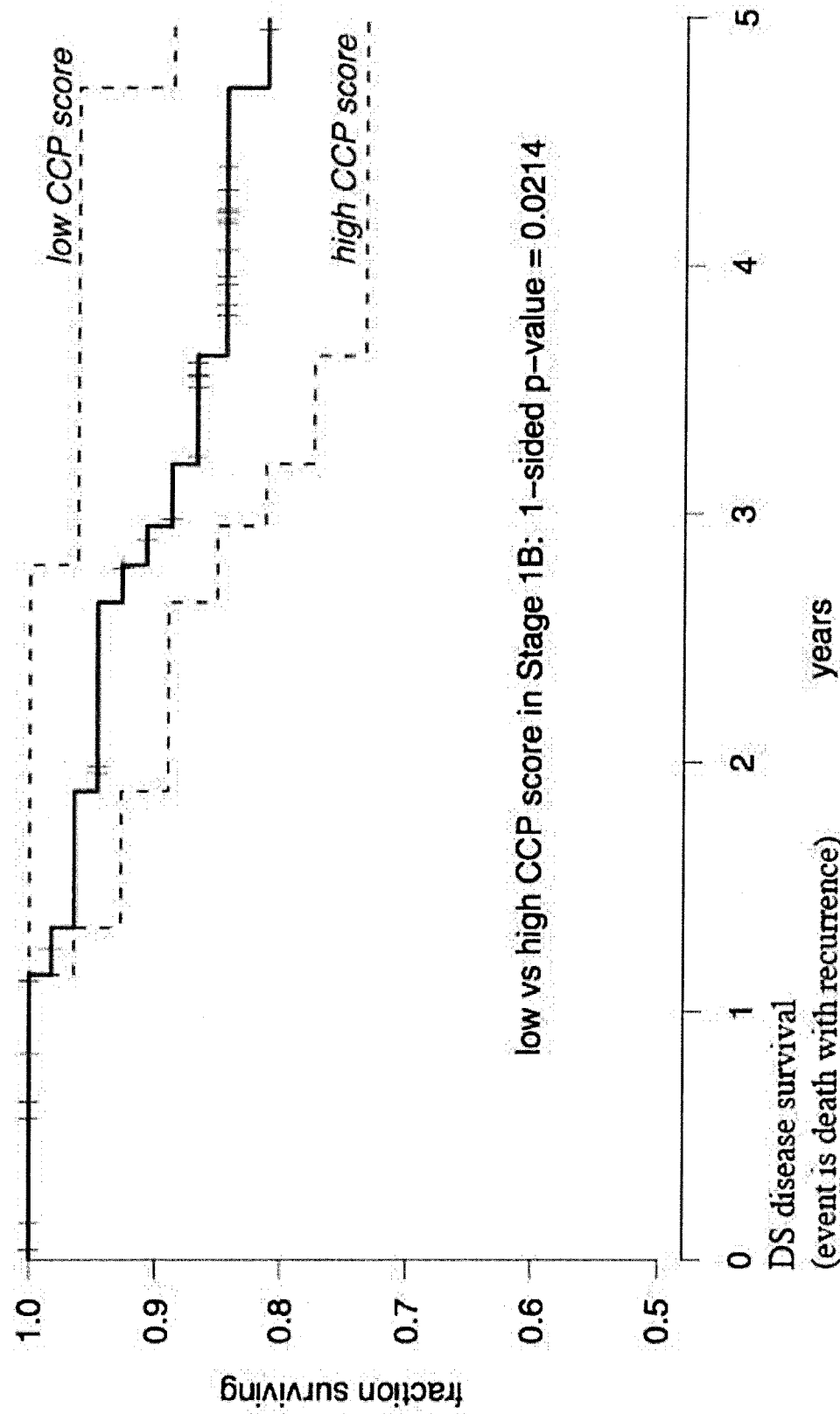


FIGURE 2

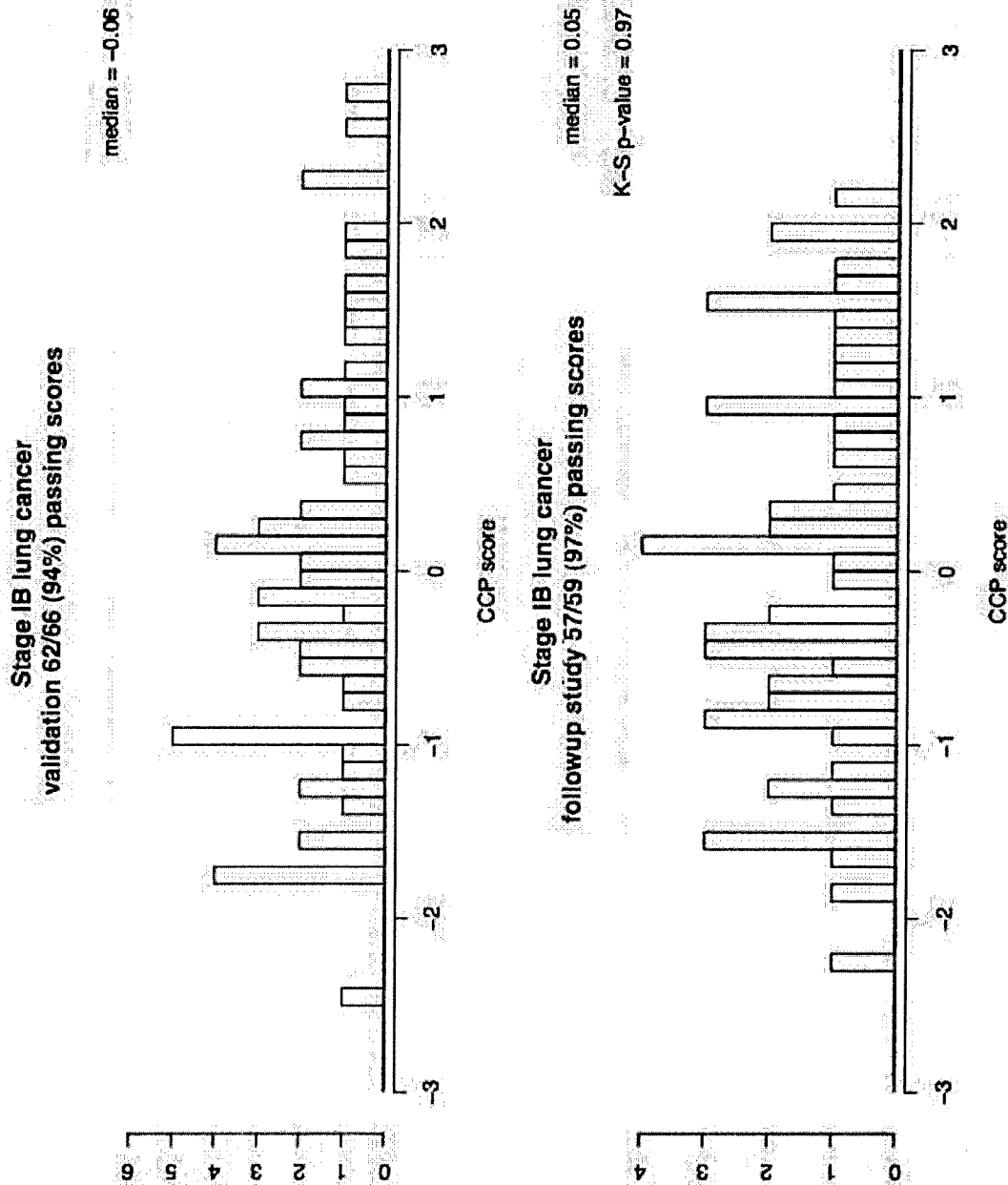
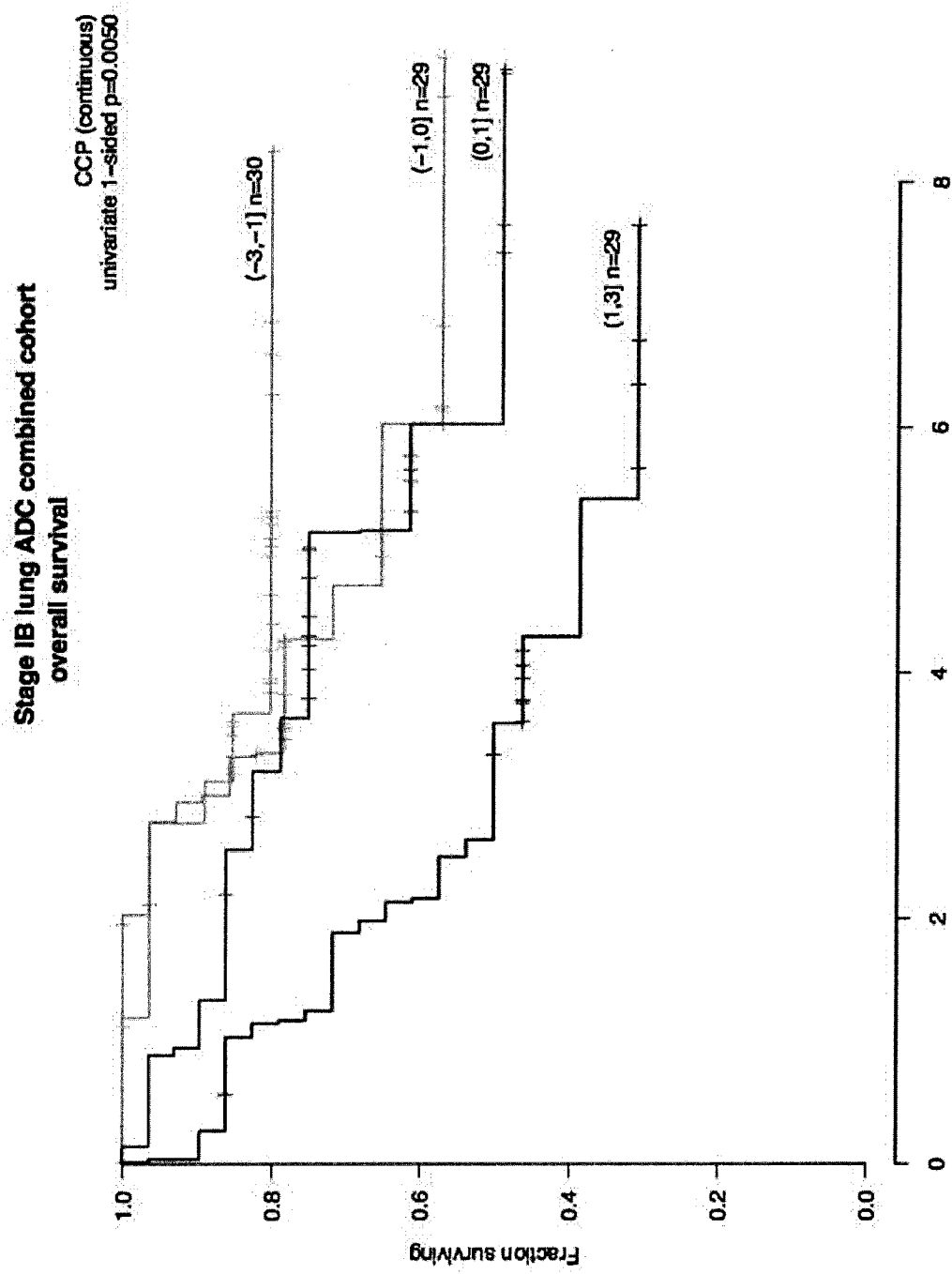


FIGURE 3



Years after surgery

FIGURE 4

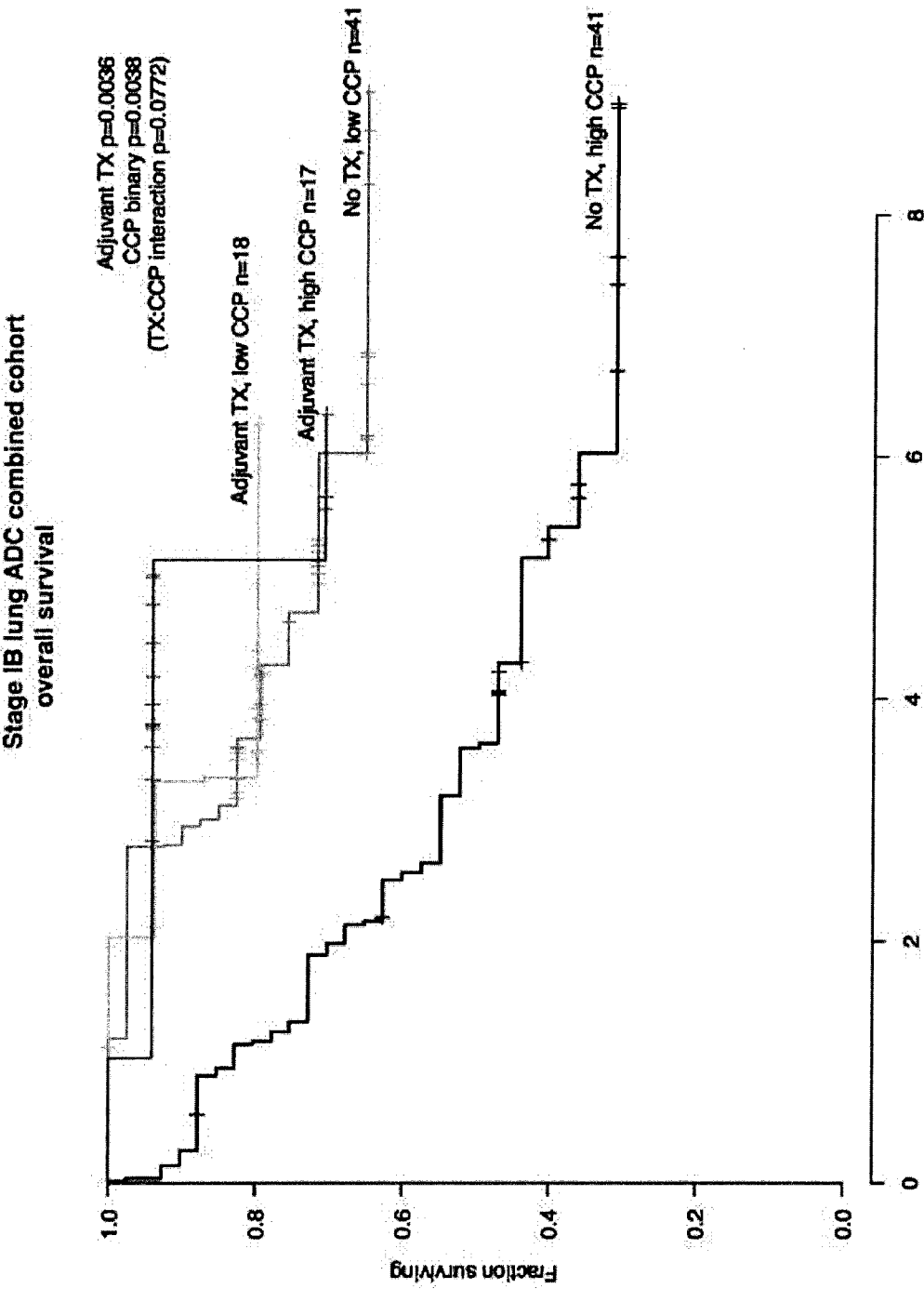


FIGURE 5

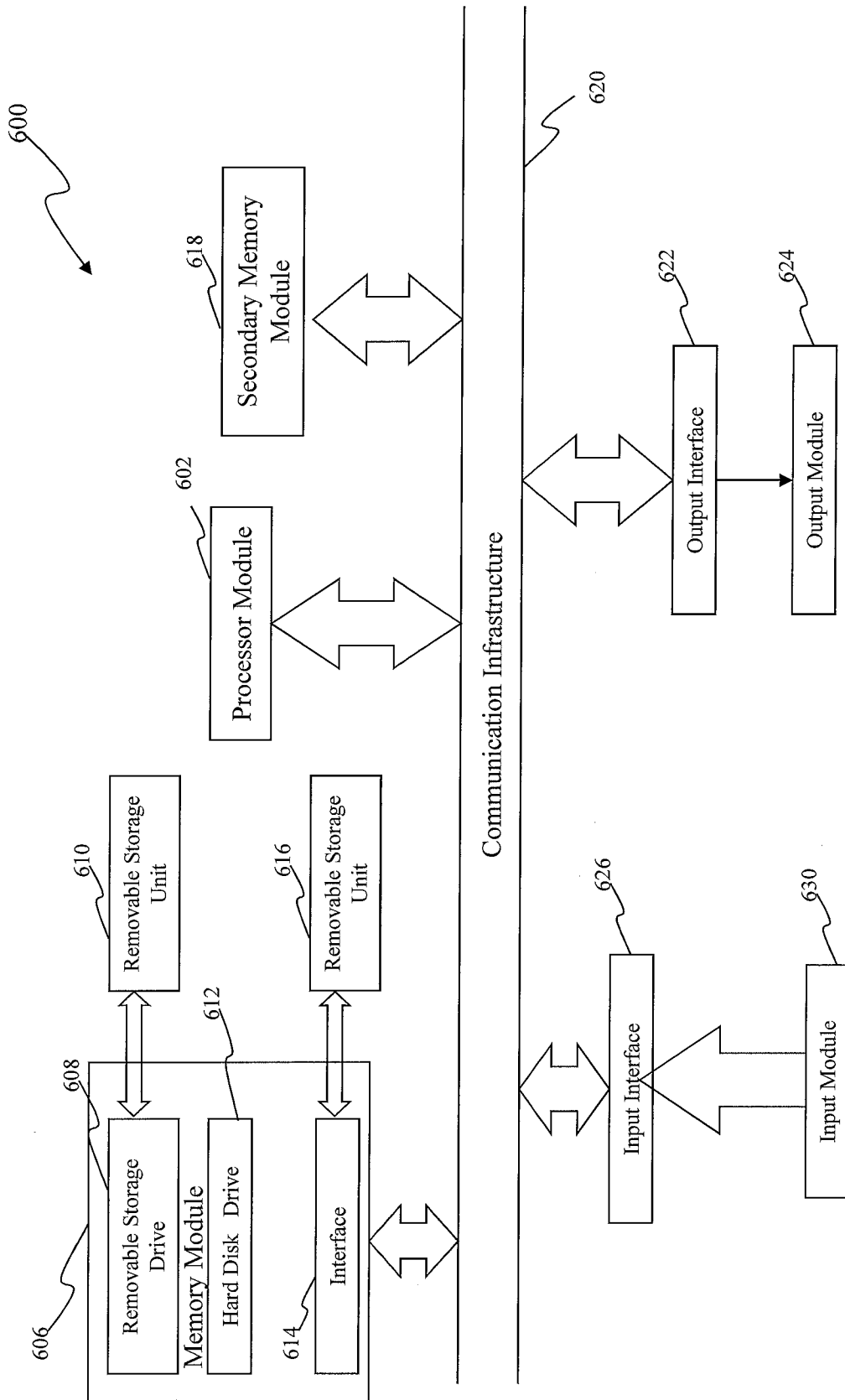


Figure 6

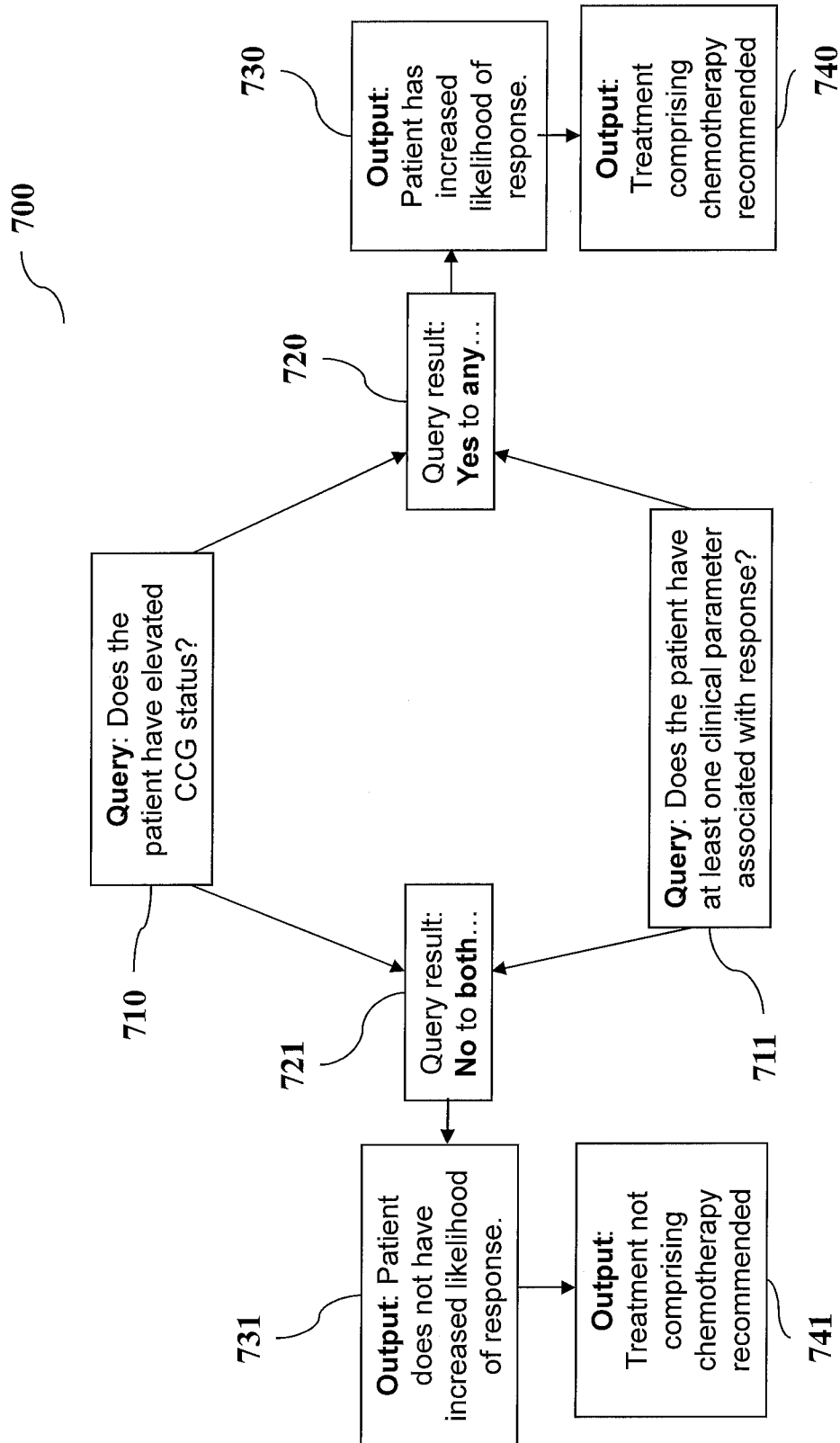


FIGURE 7

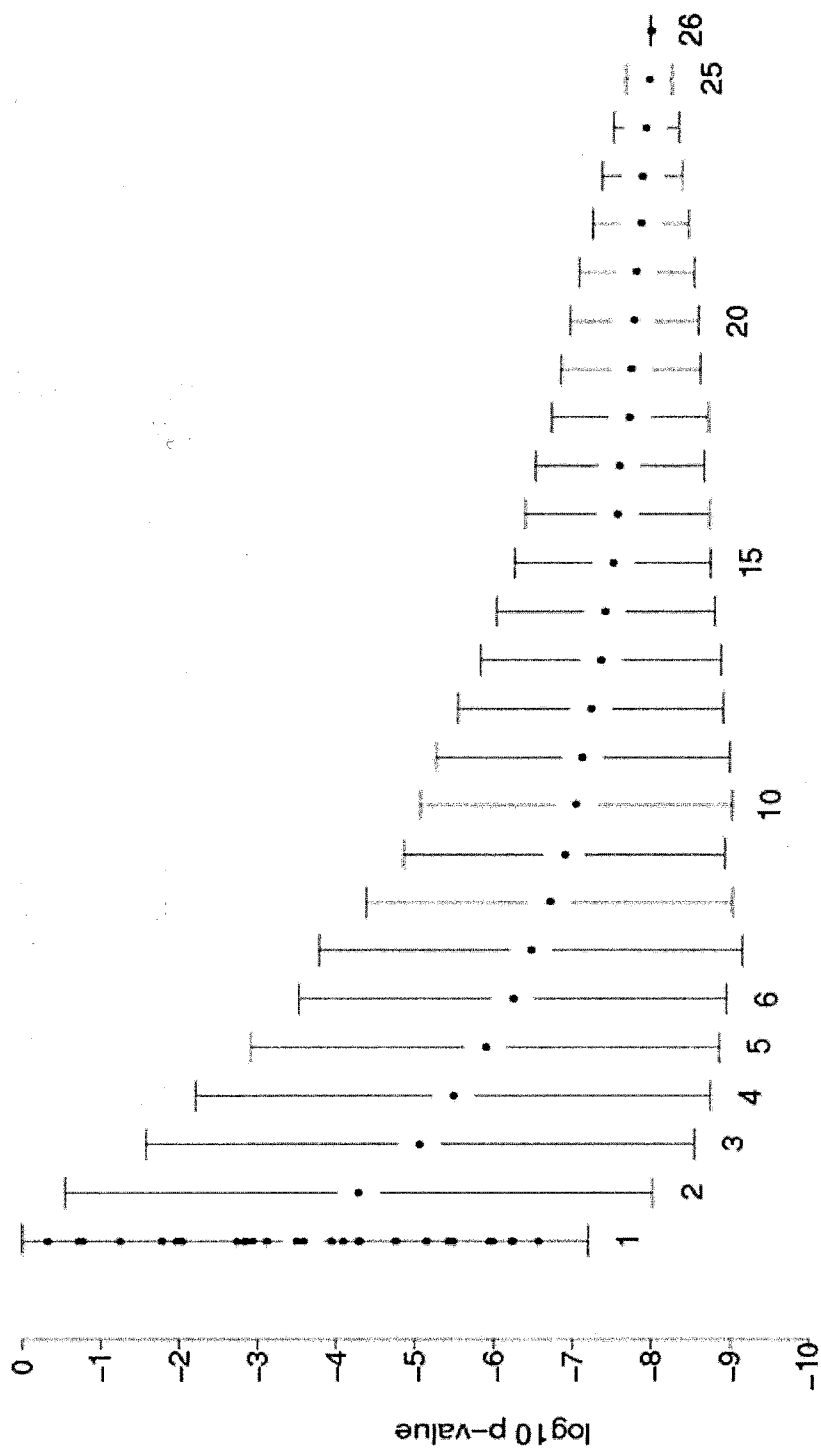
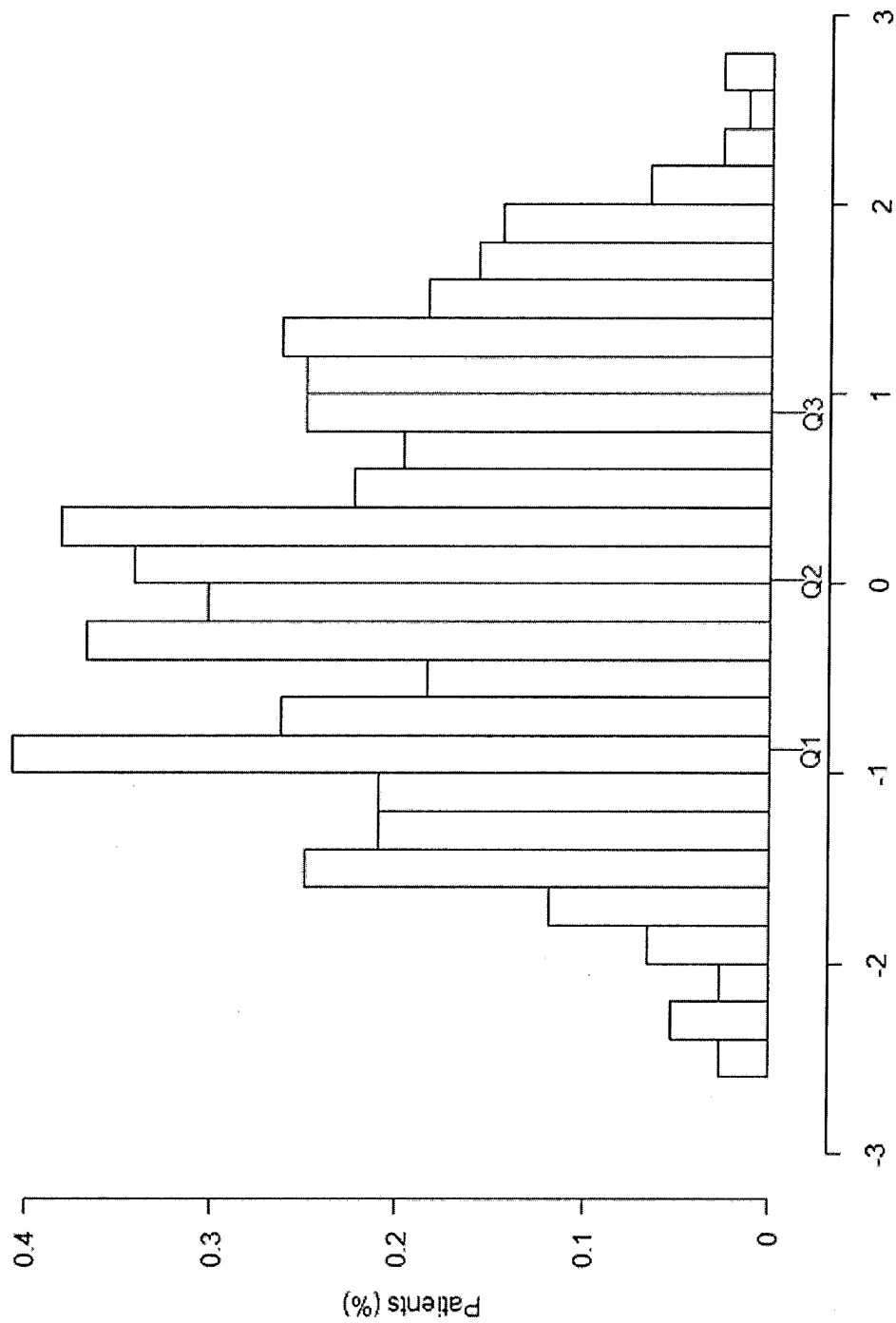


FIGURE 8



CCP Score
Distribution of CCP scores in the Combined Cohort (n=381).
The interquartile range was 1.78.

FIGURE 9

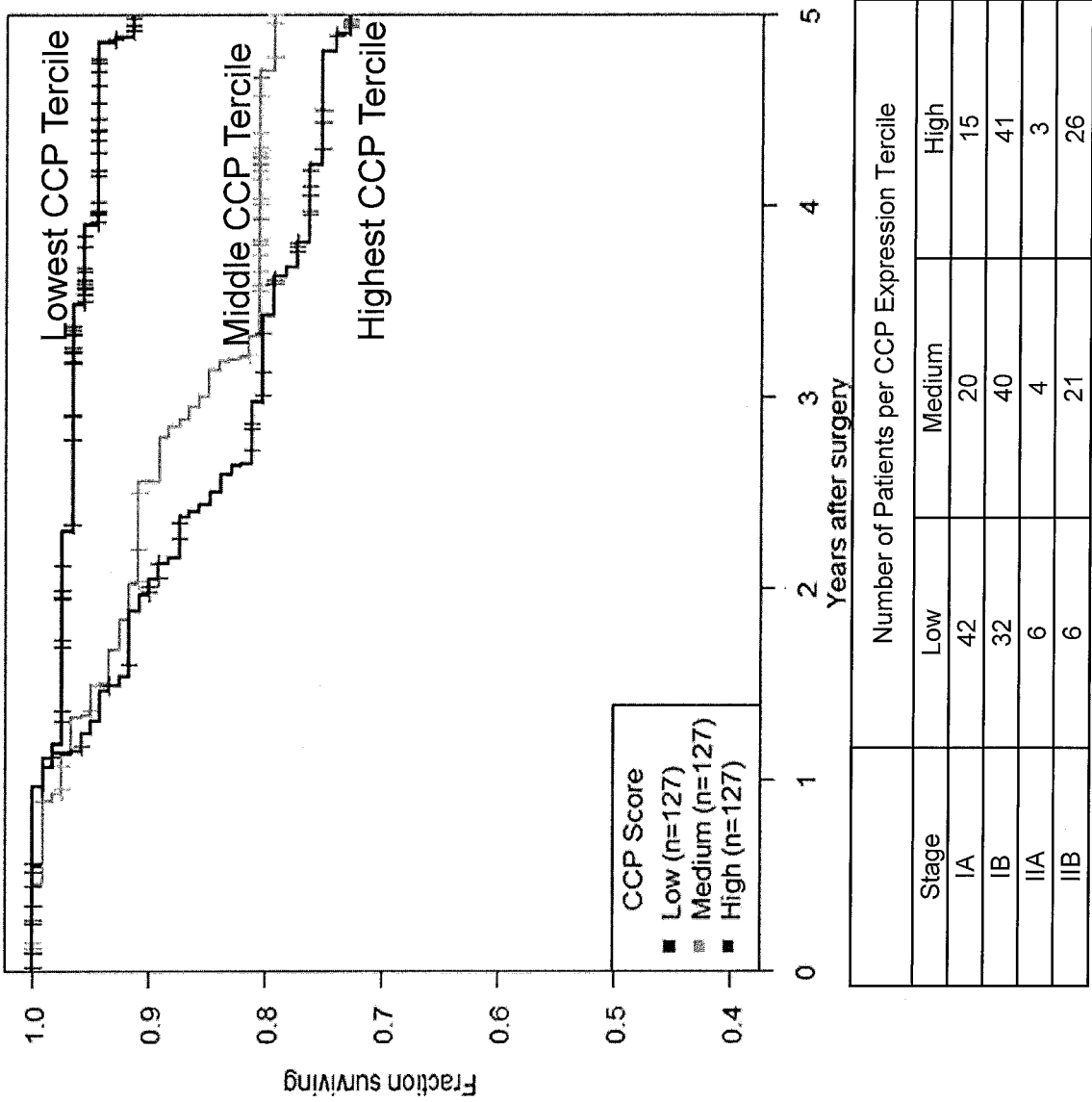
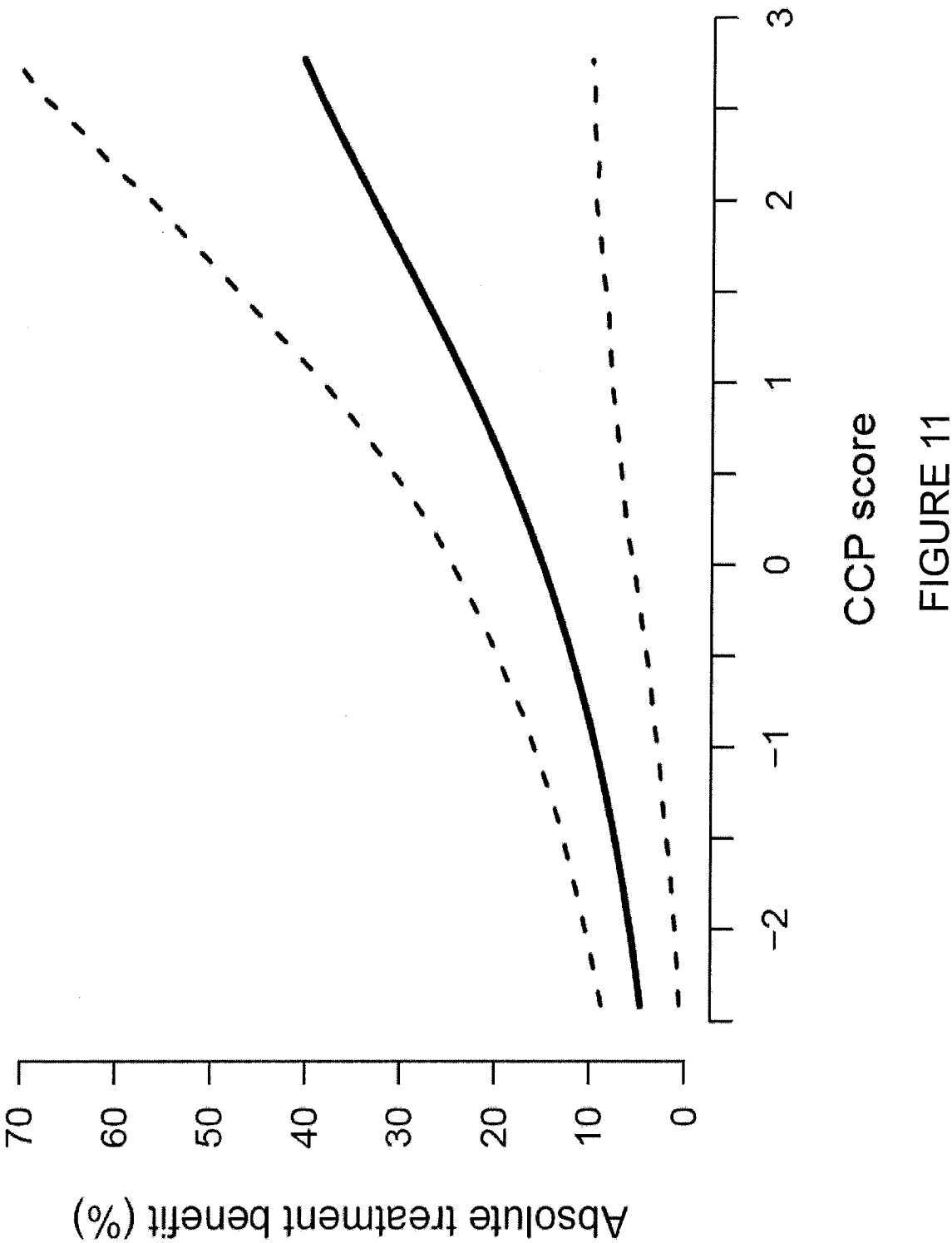
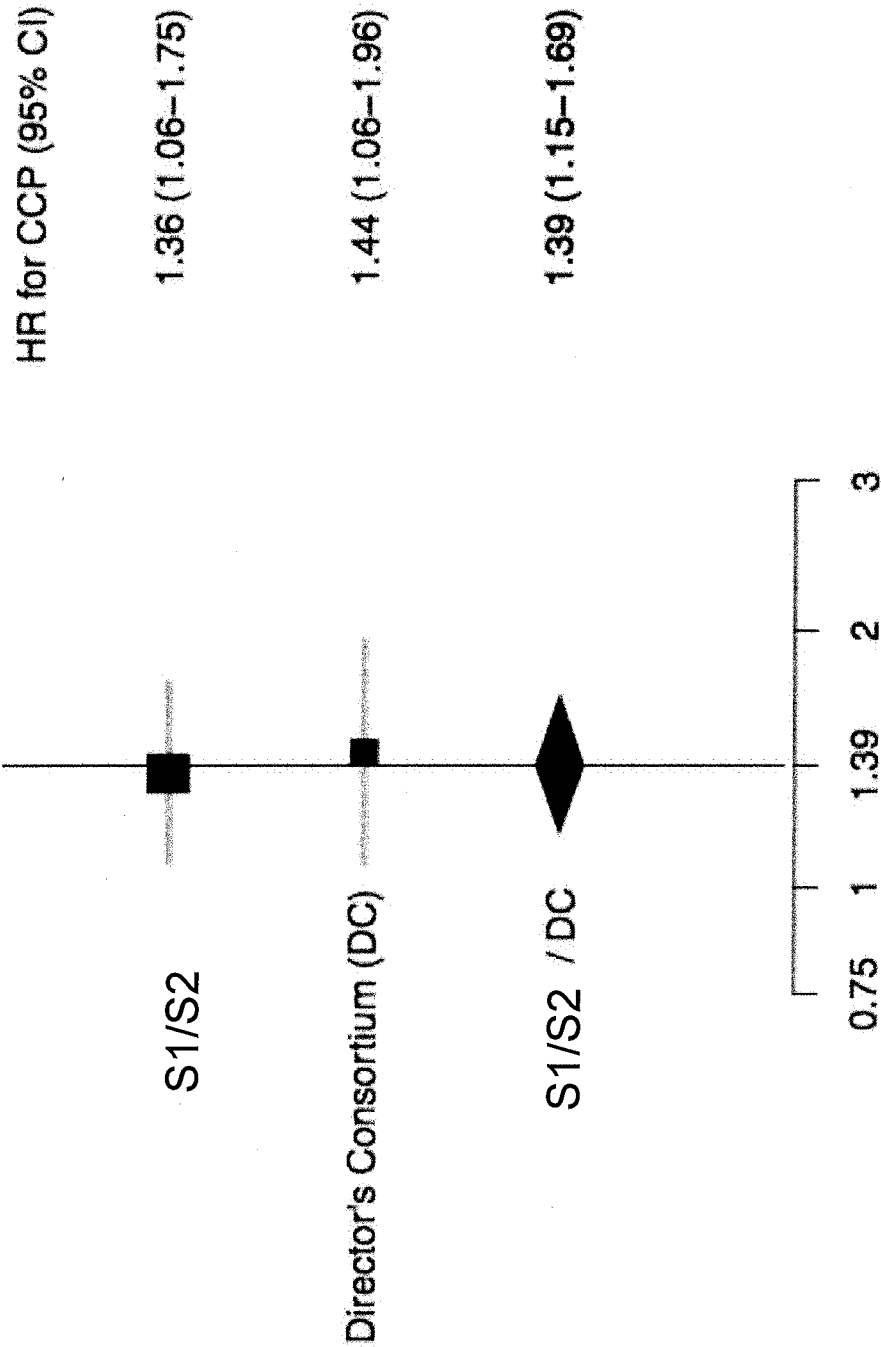


FIGURE 10





Hazard Ratio for CCP
in Untreated Patients

FIGURE 12

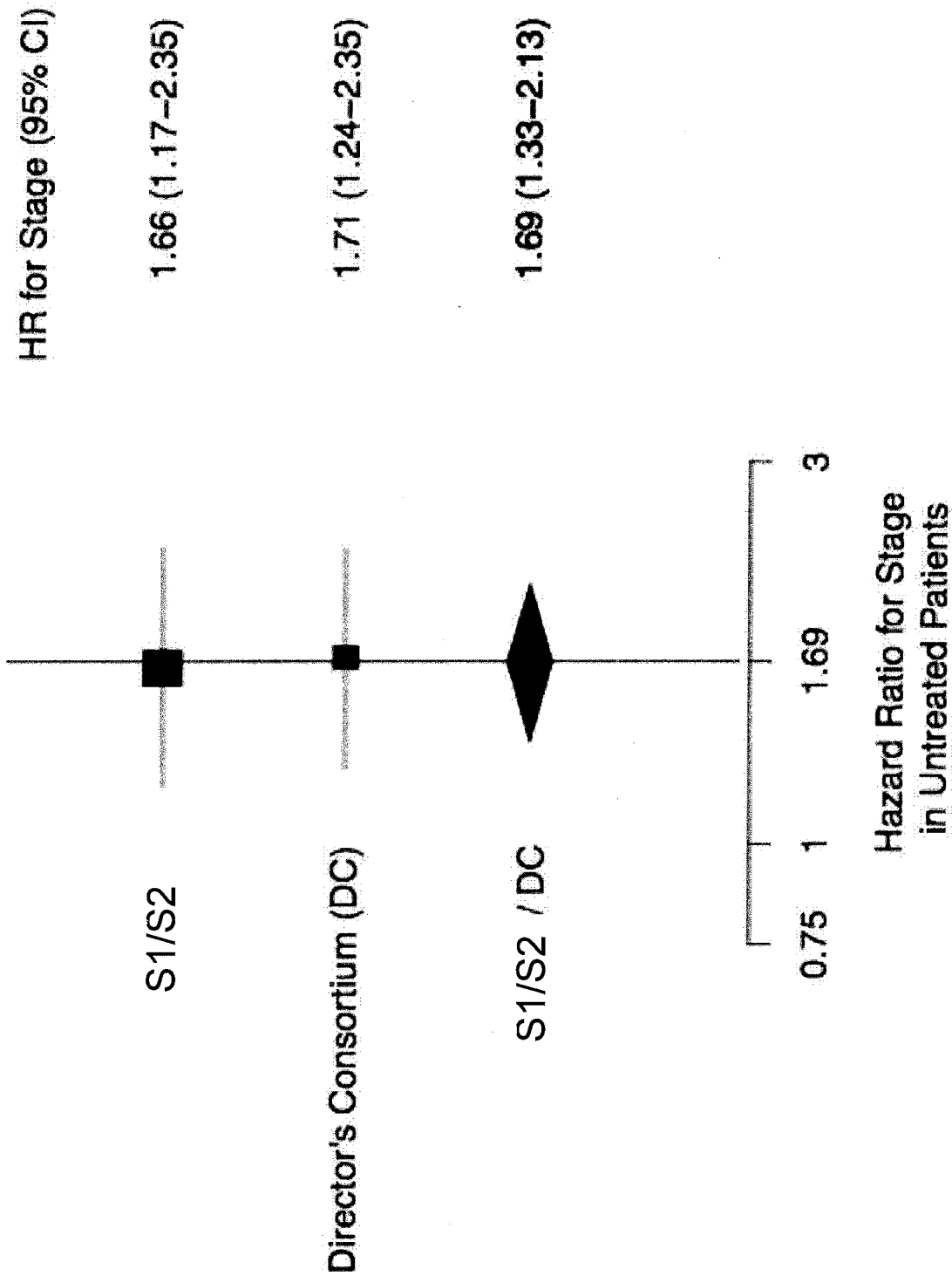
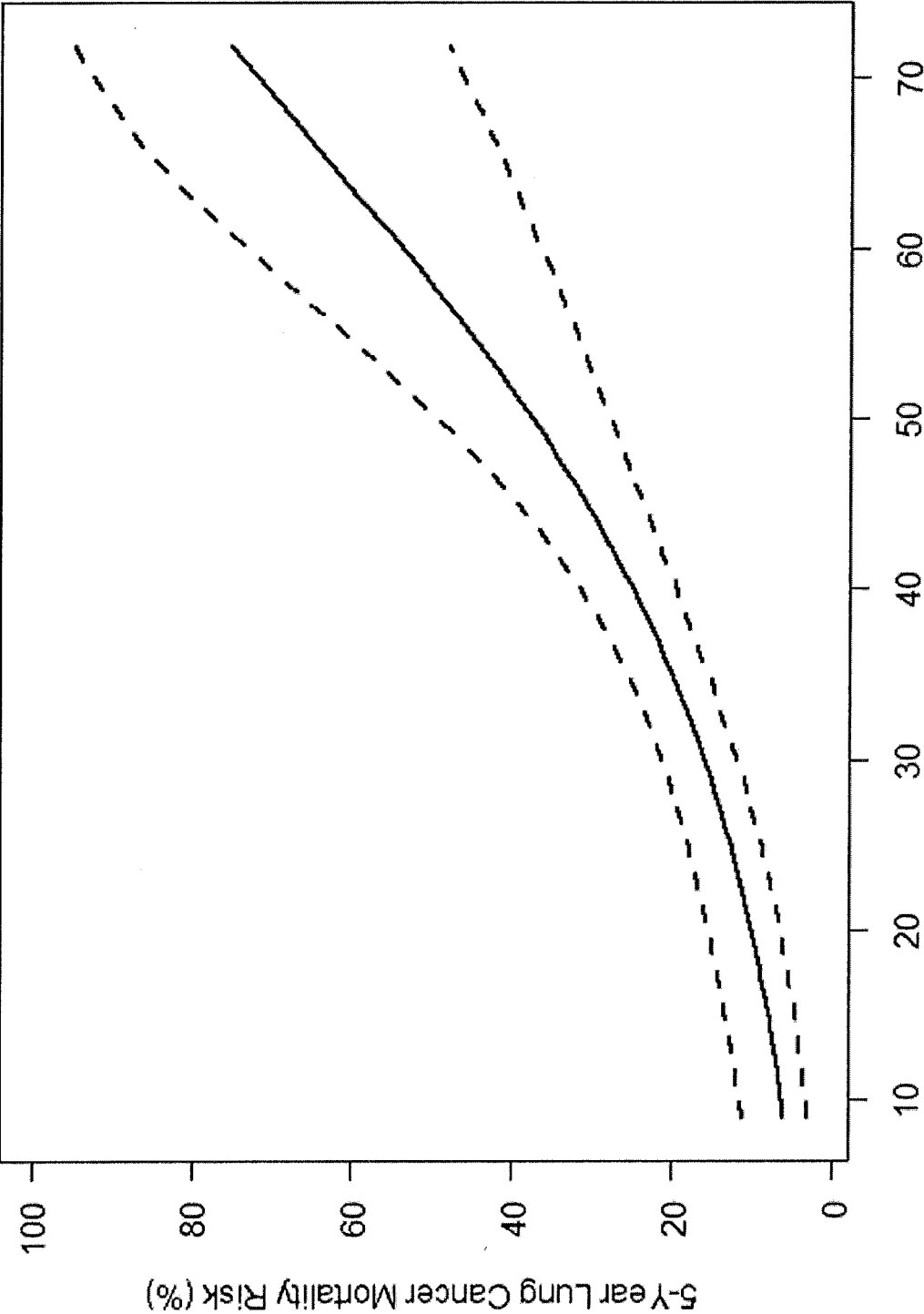


FIGURE 13



Prognostic Score
FIGURE 14

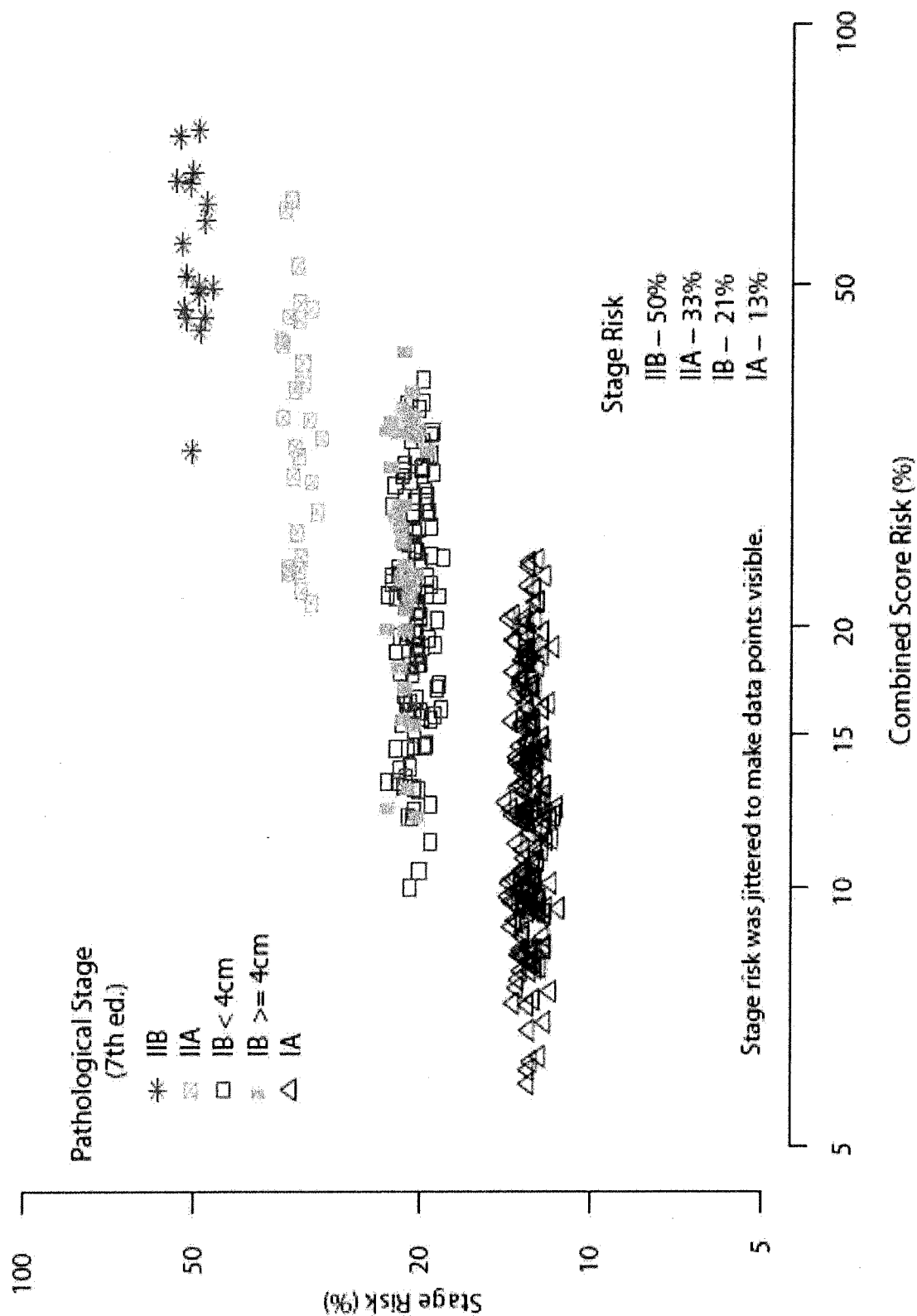


FIGURE 15

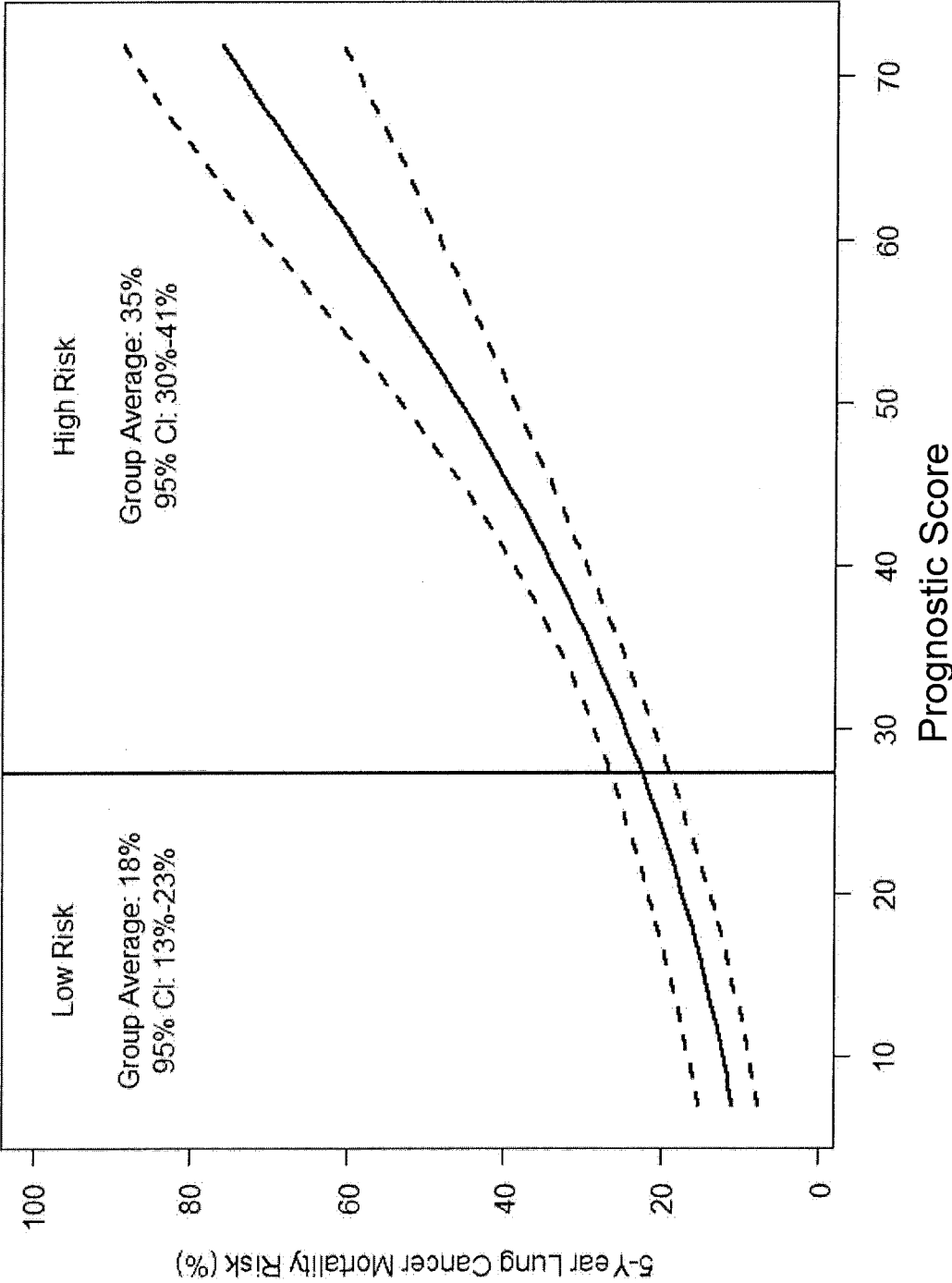


FIGURE 16

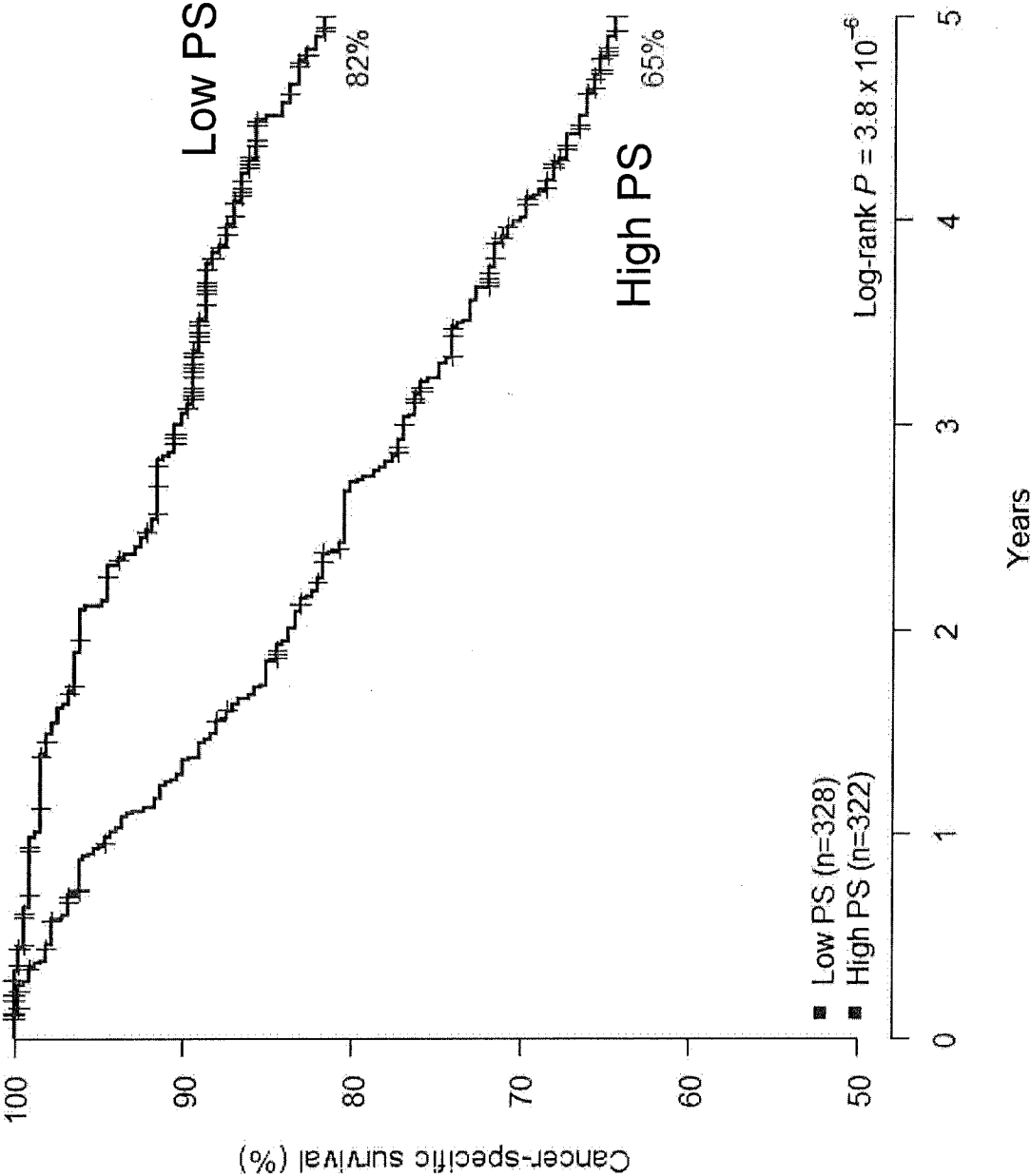


FIGURE 17

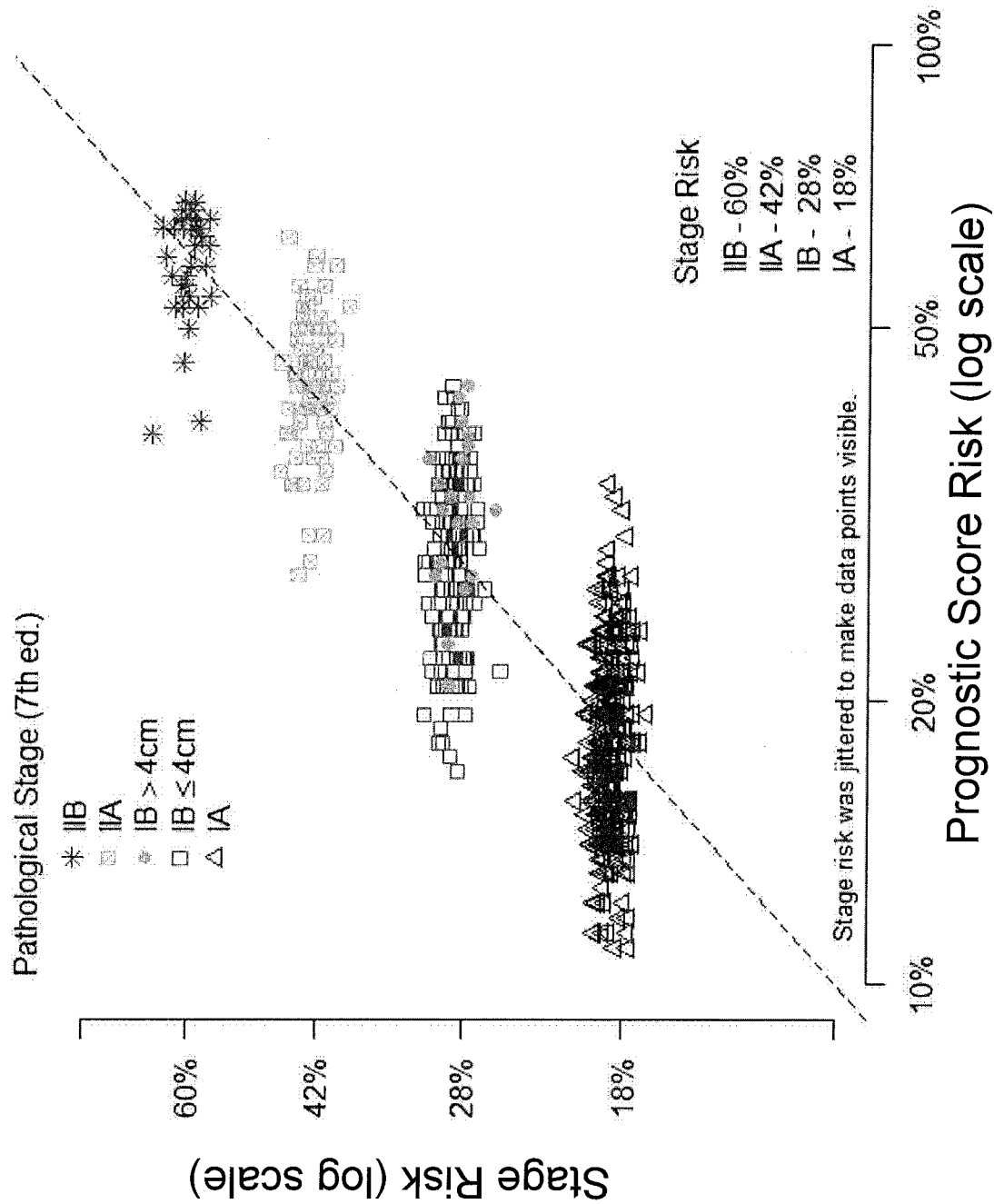


FIGURE 18

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2014/017706**A. CLASSIFICATION OF SUBJECT MATTER****C12N 15/11(2006.01)i, C12Q 1/68(2006.01)i**

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

C12N 15/11; A61K 31/60; A61K 38/12; G01N 33/53; C12Q 1/68

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: prognosis, lung cancer, kit, cell cycle gene, cell cycle progression gene, CCP, CCG

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2012-030840 A2 (MYRIAD GENETICS, INC.) 08 March 2012 See claims 15, 17-20, 22-25, 27-30 and 32-33.	20-35
A	WO 2010-080933 A1 (MYRIAD GENETICS, INC.) 15 July 2010 See claims 1, 4, 12, 35, 38 and 40-41; paragraph [0117]; table 1.	20-35
A	CUZICK, JACK et al., 'Prognostic value of an RNA expression signature derived from cell cycle proliferation genes in patients with prostate cancer: a retrospective study', Lancet Oncol., March 2011, Vol. 12, No. 3, pp. 245-255 See abstract.	20-35
A	US 2005-0272644 A1 (CHUNG, YIH-LIN) 08 December 2005 See abstract.	20-35



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

24 June 2014 (24.06.2014)

Date of mailing of the international search report

25 June 2014 (25.06.2014)

Name and mailing address of the ISA/KR

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2014/017706

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 1-19,36,40,44
because they relate to subject matter not required to be searched by this Authority, namely:
Claims 1-19, 36, 40 and 44 pertain to methods for treatment of the human body by therapy, as well as diagnostic methods, and thus relate to a subject matter which this International Searching Authority is not required, under PCT Article 17(2)(a)(i) and PCT Rule 39.1(iv), to search.
2. ☒ Claims Nos.: 18
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
Claim 18 is unclear since it is referring to the multiple dependent claims which do not comply with PCT Rule 6.4(a).
3. ☒ Claims Nos.: 14-17,36-47
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of any additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2014/017706

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2012-030840 A2	08/03/2012	EP 2611941 A2 EP 2611941 A4 US 2013-0302242 A1 WO 2012-030840 A9	10/07/2013 22/01/2014 14/11/2013 14/06/2012
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