Clinical relevance of proteomic profiling in *de novo* pediatric acute myeloid leukemia: a Children's Oncology Group study

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Supplemental methods

Statistical analysis

Proportions were compared between protein SIGs and categorical variables using Pearson's Chi-square test or continuous variables using the Kruskal-Wallis test. Networks were constructed based the STRING database[1] and computationally reconstructed interactions from the RPPA data using graphical lasso[2] and StARS.[3] Networks were visualized using Cytoscape (version 3.8.0).[4,5] Proteins significantly aberrantly regulated compared to the normal CD34+ samples were identified using the Wilcoxon signed-rank test with a Bonferroni adjusted *p*-value. Statistical analyses were performed in R version 1.3.959 2009-2020 (RStudio, Inc., Boston, MA) or SAS version 9.4 (SAS Institute, Inc., Cary, NC).

Supplemental Table S2 summarize cox analyses for outcome reported in the paper in Figures 3D, 5, S3, S7 and S8. We arbitrarily set a baseline group for each of the analyses where there were 3 or more groups being compared. Some of these groups did not have any events (100% survival or 0% RR) and in such cases, there is no convergence of HR estimates.

Quality control

Samples with a highly significantly greater number (>20%) of proteins with extremely high or low expression (≥ 3SD from the median) might have problematic "handling" effects.[6] This metric identified six pre-treatment samples with quality control issues which were excluded.

Gene expression profiling

Ribodepleted RNA-sequencing expression data was generated for 390 of the 500 RPPA-patients as described. Data was generously provided by Meshinchi et al.[7]

Transcriptome mutation calls

Single-nucleotide variants and indels were analyzed utilizing a custom pipeline (British Columbia Cancer Agency, British Columbia, Canada). Targeted alignment of custom in silico probes were produced for 1160 physical positions across 166 genes to detect a "hit count" of variant reads and compared with positive controls (patient samples with validated mutations) and negative controls (normal BM). A cut-off of seven variant hit counts was used.

List of References

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Supplemental table and figure legends

Supplemental Table S1. "Rosetta Stone" for the antibody and protein nomenclature together with the RPPA staining details/

Supplemental Table S2. Cox analyses for outcome reported in Figures 3D, 5, S3, S7 and S8.

Supplemental Table S3. Patient characteristics and disease features for the four heat shock protein clusters.

Supplemental Table S4. List of the 116 protein clusters that form the 12 protein constellations.

Supplemental Table S5. Cross tables Proteomic-Risk groups, AAML1031 risk groups and conventional cytogenetics risk groups.

Supplemental Table S6. **(A)** Proteins that significantly changed between the pre-treatment samples and the 10hr-post-treatment samples. **(B)** Proteins that significantly changed between the pre-treatment samples and the 24hr-post-treatment samples. **(C)** Seventy-six proteins that had changed significantly after chemotherapy exposure after both 10 hours and 24 hours. To show the number of proteins that had changed within each PFG, proteins were grouped within their PGFs.

Supplemental Table S7. List of existing drugs used in the clinical setting that are potentially testable within specific patient subgroups, based on protein expression significantly different from normal.

Supplemental Figure S1. Relative protein expression in pediatric AML and normal CD34+ samples. **(A)** Unsupervised hierarchical clustering, and **(B)** PCA of the 500 pediatric AML patient samples (light blue) and the 30 normal CD34+ cells.

Supplemental Figure S2. PFG associated *p*-values. Bar graph showing the associated *p*-values for **(A)** OS, **(B)** EFS and **(C)** CR duration. Light blue bars indicate all 410 patients, dark blue bars the ADE-treated patients and red bars patients treated with ADEB.

Supplemental Figure S3. Kaplan-Meier survival curves for EFS and RR for the four heat shock PCs. (A) EFS and **(B)**, RR for all patients (left), treated with ADE alone (middle) or ADE plus bortezomib addition (right). Each line indicates patients in one of the four identified heat shock PCs: red (C1), pink (C2), yellow (C3) and green (C4).

Supplemental Figure S4. **Cluster stability for the identified PrCONs and PrSIGs**. Robustness of the PrCONs and PrSIG was evaluated tested using a training set (n=355) and test set (n=145). Sets were created by using random sampling. **(A)** To test PrCON-membership stability, block-clustering was first applied to the training set. PrCON-membership for the 12 PrCONs is shown in the left column. Secondly, block-clustering algorithm was applied to the test set. Pearson's chi-square between PrCON-membership of the training and test set resulted in a *p*-value <0.0001. **(B)** To assess PrSIG-stability, PrSIG-membership of the training set (based on the block-clustering algorithm used in A) was used. Linear-discriminant analysis of the test set was applied to the test set to predict PrSIG-membership of the test set. Pearson's chi-square was used to compare overlapping PrSIG-membership in the training and test set to PrSIG-membership of the 500 patients. This resulted in a significant *p*-value <0.0001). Left column: PrSIG-membership of the 500 patients. Middle column: PrSIG-membership of the training and test set. Right column indicates whether sample was assigned to the training (blue) or test set (red).

Supplemental Figure S5. Correlation between RPPA protein abundance and mRNA. Histogram showing the Pearson's correlation coefficient in 390 of the 500 AML patients for 205 total protein targets. Positive correlation was found between 171 of the mRNA and protein levels.

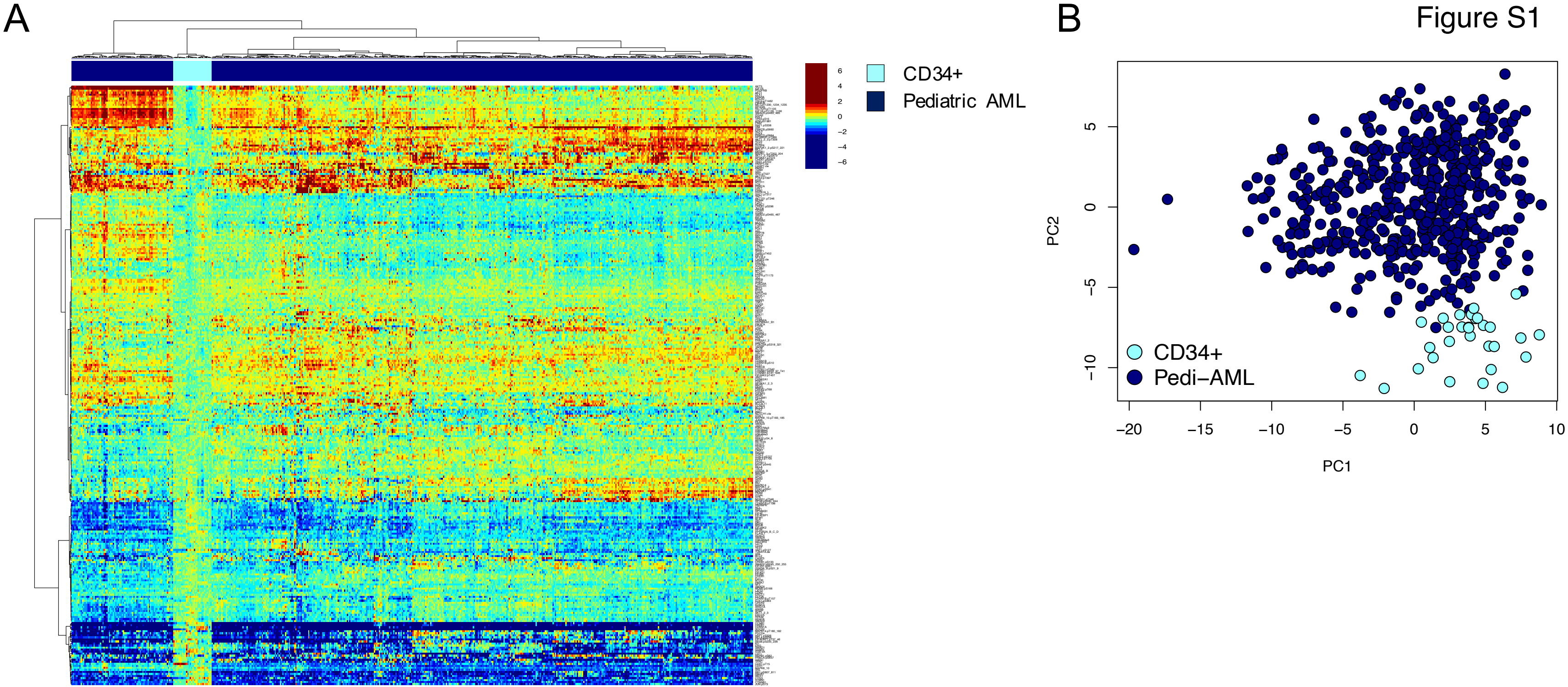
Supplemental Figure S6. MetaGalaxy annotated with clinical, disease and molecular characteristics. MetaGalaxy annotated with cytogenetics, mutational state for CEBPA, FLT3-ITD, NPM1 and KIT, fusion genes CBFA2T3-GLIS2, NUP98-KDM5A, NUP98-NSD1, age, gender, FAB classification, ethnicity, CNS status, race and WBC count.

Supplemental Figure S7. Kaplan-Meier survival curves for OS, EFS and RR for the 9 PrSIGs. Survival analysis for **(A)** all, **(B)** ADE and, **(C)** ADEB treated patients. Curves are shown for OS (left), EFS (middle) and RR (right).

Supplemental Figure S8. Kaplan-Meier overal survival curves the 3 Proteomic Risk groups within the normal karyotype patients (n=114).

Supplemental Figure S9. Kaplan-Meier survival curves for OS, EFS and RR for the 9 PrSIGs. Survival analysis for all (left), ADE (middle), and ADEB (right) treated patients in **(A)** AAML1031 low and **(B)** high-risk patients

Figure S1


A
6
4
2
0
−2
−4
−6
CD34+
Pediatric AML
B
PC2
PC1
5
0
−5
−10
−20
−15
−10
−5
0
5
10
CD34+
Pedi−AML

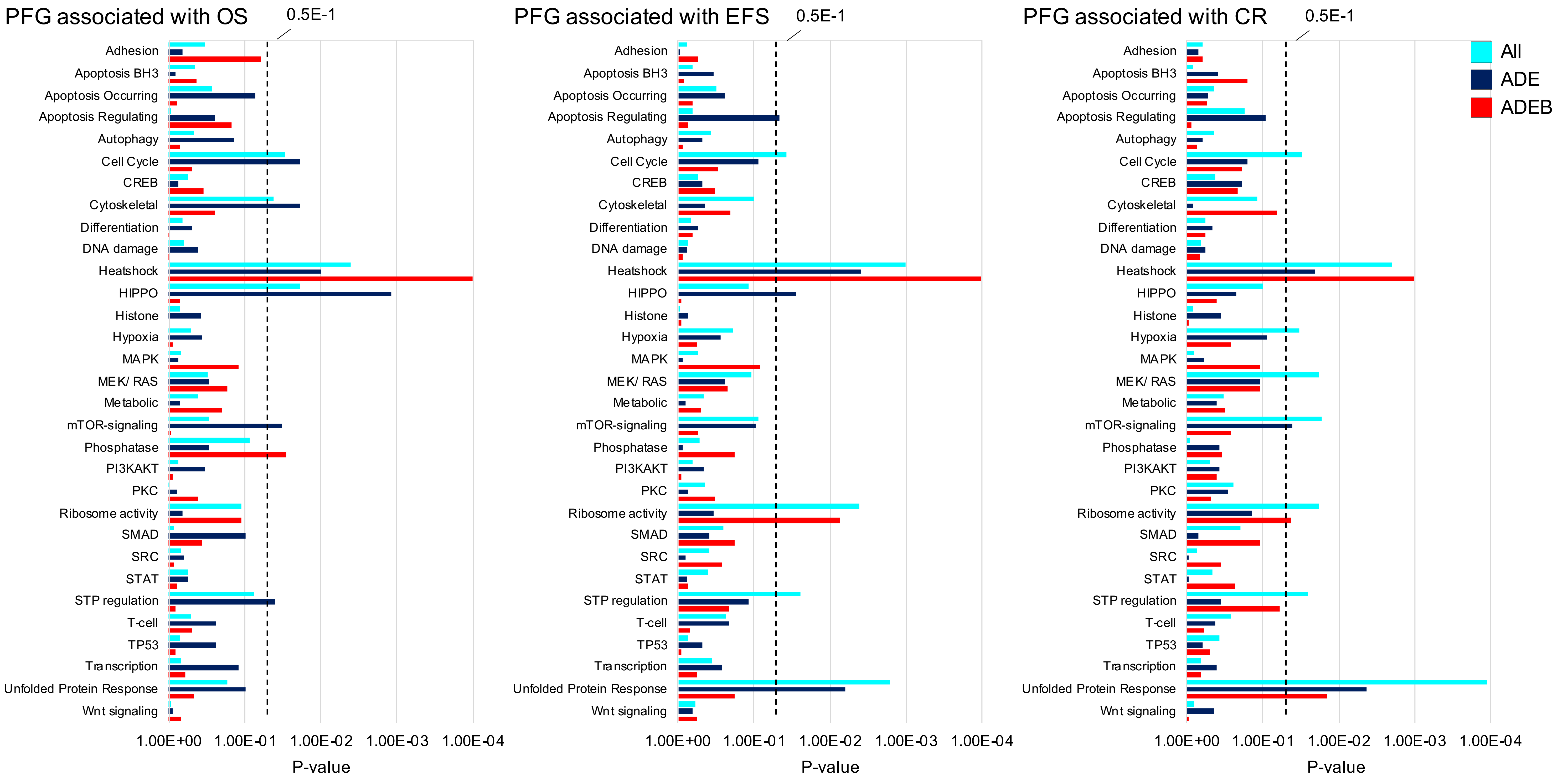

PFG associated with OS
PFG associated with EFS
PFG associated with CR
0.5E-1
Adhesion
Apoptosis BH3
Apoptosis Occurring
Apoptosis Regulating
Autophagy
Cell Cycle
CREB
Cytoskeletal
Differentiation
DNA damage
Heatshock
HIPPO
Histone
Hypoxia
MAPK
MEK/ RAS
Metabolic
mTOR-signaling
Phosphatase
PI3KAKT
PKC
Ribosome activity
SMAD
SRC
STAT
STP regulation
T-cell
TP53
Transcription
Unfolded Protein Response
Wnt signaling
1.00E+00
1.00E-01
1.00E-02
1.00E-03
1.00E-04
P-value
All
ADE
ADEB

Figure S3

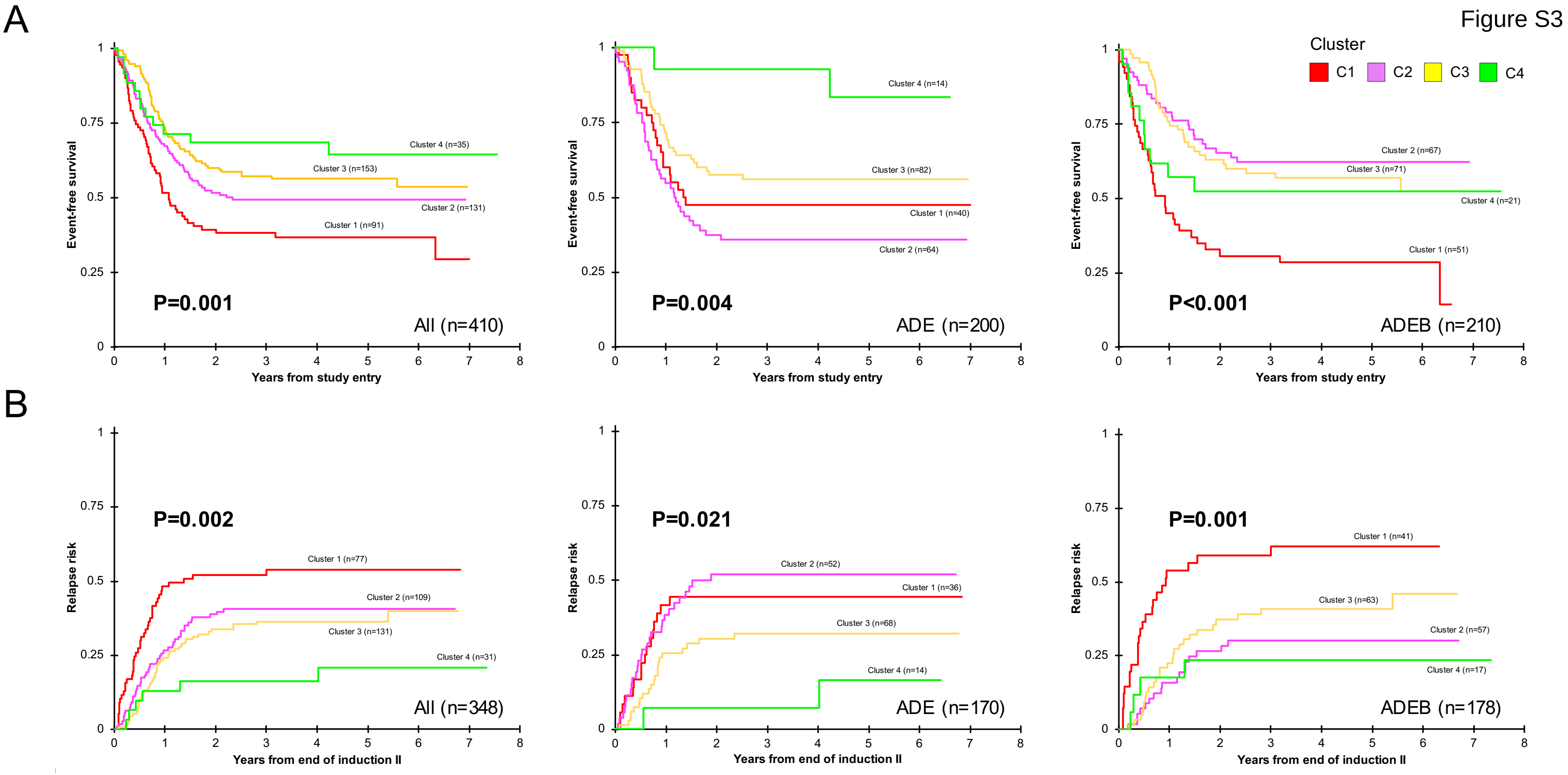
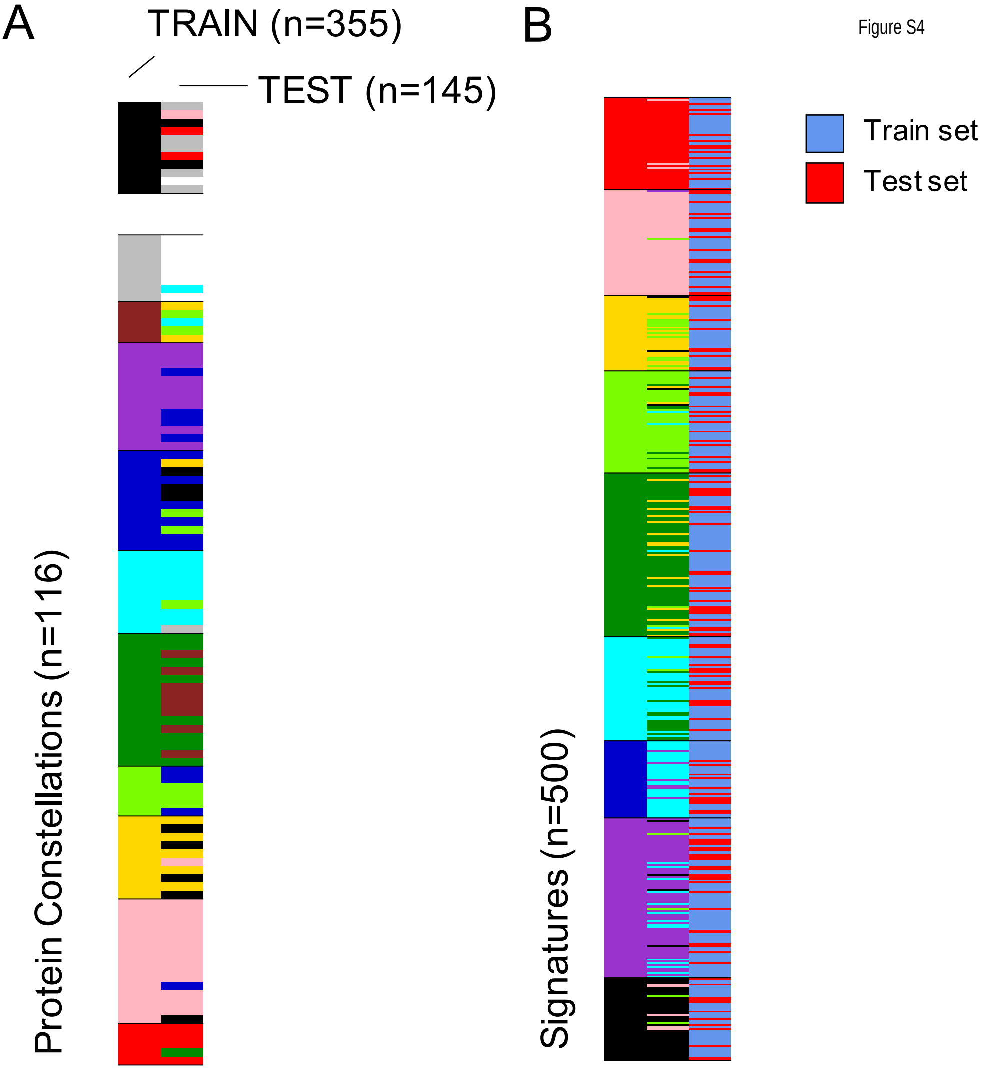

A
Cluster
C1
C2
C3
C4
Event-free survival
1
0.75
0.5
0.25
0
0
1
2
3
4
5
6
7
8
Years from study entry
Cluster 4 (n=35)
Cluster 3 (n=153)
Cluster 2 (n=131)
Cluster 1 (n=91)
P=0.001
All (n=410)
Cluster 4 (n=14)
Cluster 3 (n=82)
Cluster 1 (n=40)
Cluster 2 (n=64)
P=0.004
ADE (n=200)
Cluster 2 (n=67)
Cluster 3 (n=71)
Cluster 4 (n=21)
Cluster 1 (n=51)
P<0.001
ADEB (n=210)
B
Relapse risk
Years from end of induction II
P=0.002
Cluster 1 (n=77)
Cluster 2 (n=109)
Cluster 3 (n=131)
Cluster 4 (n=31)
All (n=348)
P=0.021
Cluster 2 (n=52)
Cluster 1 (n=36)
Cluster 3 (n=68)
Cluster 4 (n=14)
ADE (n=170)
P=0.001
Cluster 1 (n=41)
Cluster 3 (n=63)
Cluster 2 (n=57)
Cluster 4 (n=17)
ADEB (n=178)

Figure S4


A
TRAIN (n=355)
TEST (n=145)
Protein Constellations (n=116)
B
Signatures (n=500)
Train set
Test set

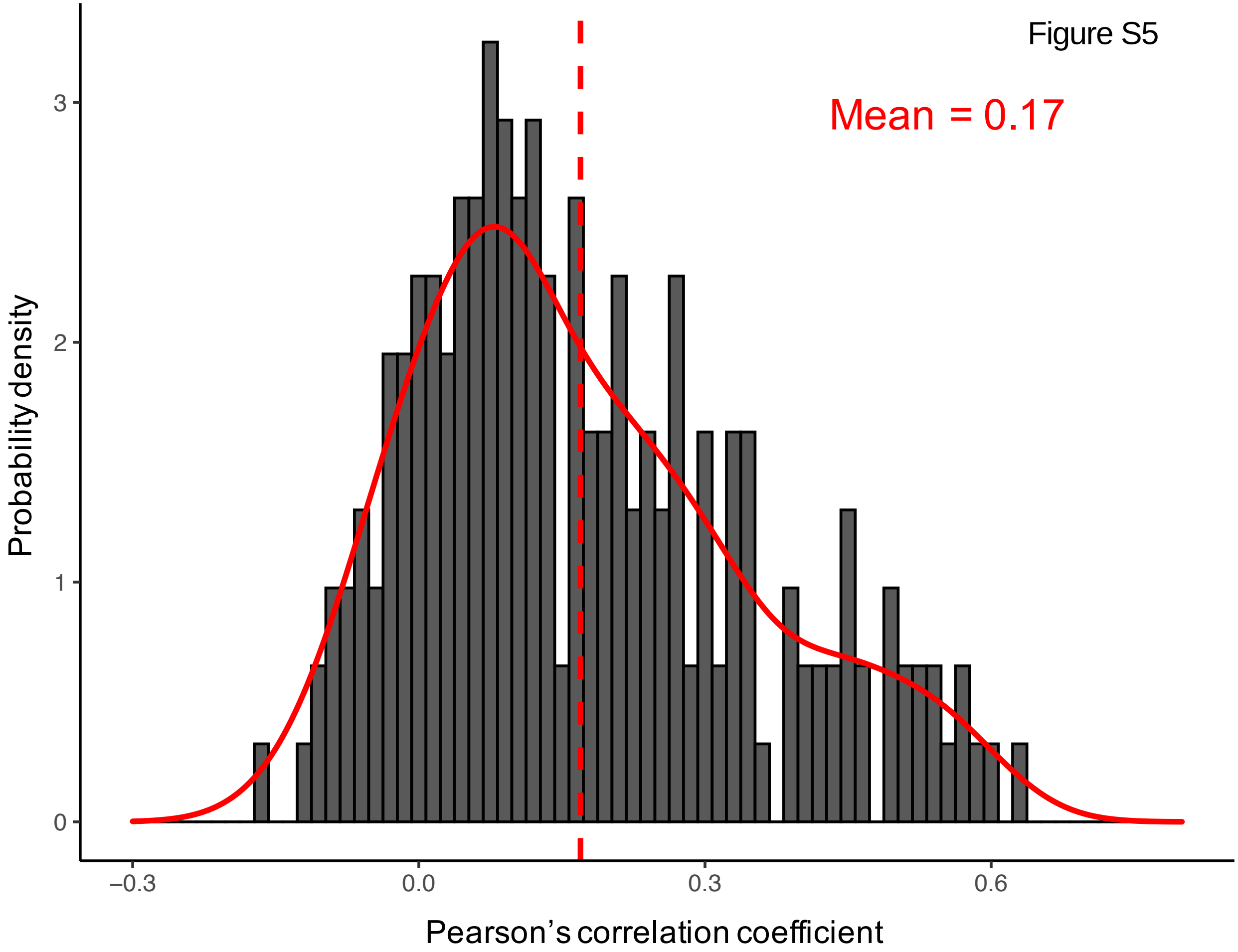


Figure S5
Mean = 0.17
Probability density
3
2
1
0
−0.3
0.0
0.3
0.6
Pearson’s correlation coefficient

Figure S6

Protein Expression Signature (SIG)

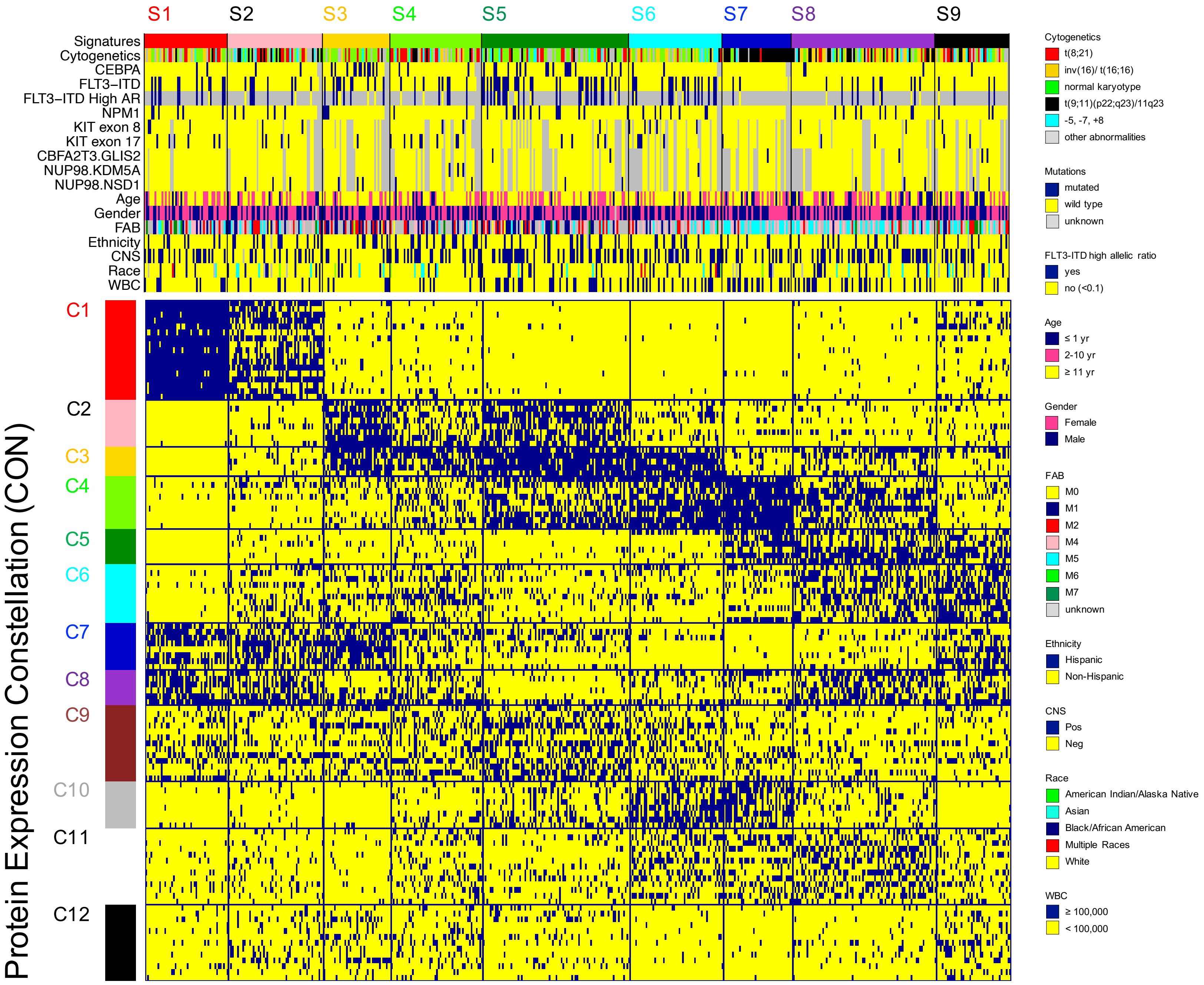
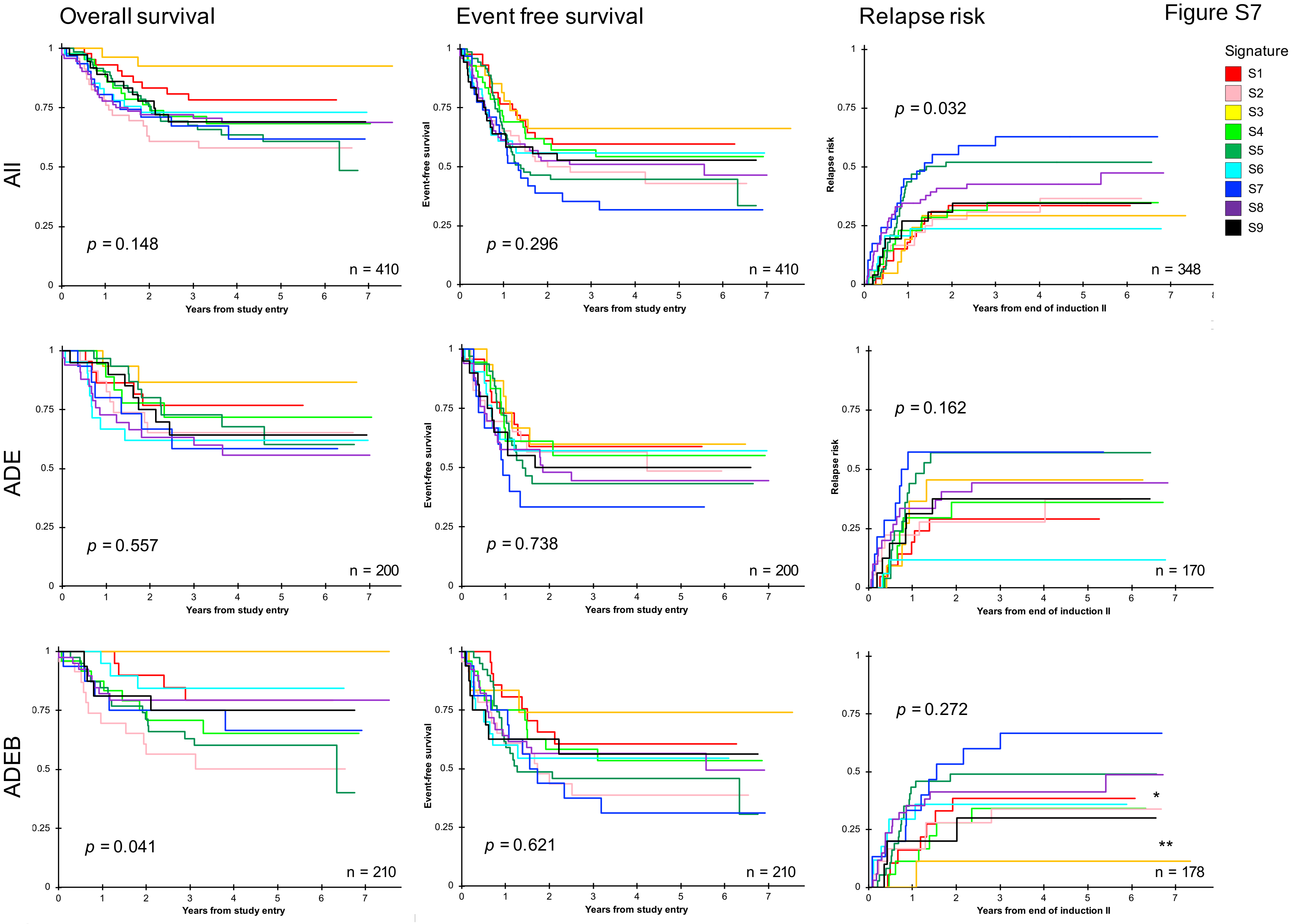


Figure S7


Overall survival
Event free survival
Relapse risk
Signature
🟥 S1
🟥 S2
🟨 S3
🟩 S4
🟩 S5
🟦 S6
🟦 S7
🟪 S8
⬛ S9
All
p = 0.148
n = 410
Years from study entry
p = 0.296
n = 410
Event-free survival
Years from study entry
p = 0.032
n = 348
Relapse risk
Years from end of induction II
ADE
p = 0.557
n = 200
Years from study entry
p = 0.738
n = 200
Event-free survival
Years from study entry
p = 0.162
n = 170
Relapse risk
Years from end of induction II
ADEB
p = 0.041
n = 210
Years from study entry
p = 0.621
n = 210
Event-free survival
Years from study entry
p = 0.272
*
**
n = 178
Years from end of induction II
0
0.25
0.5
0.75
1
0
1
2
3
4
5
6
7

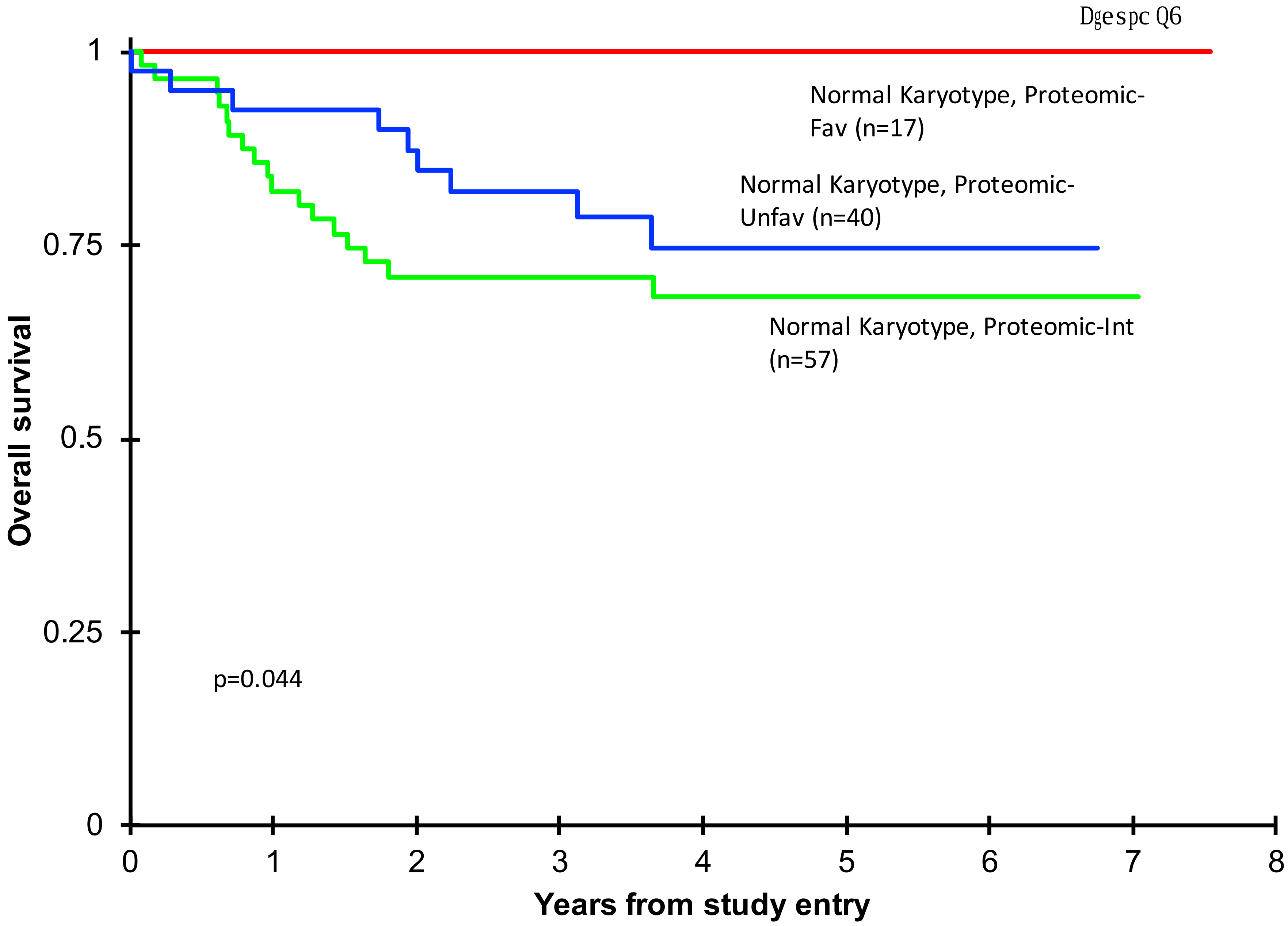
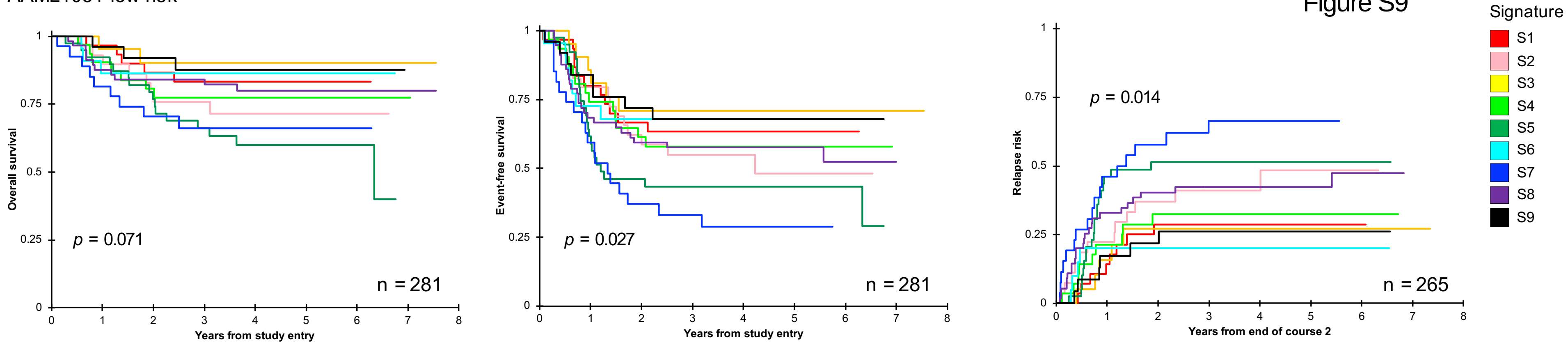

Dgespc Q6
Normal Karyotype, Proteomic-Fav (n=17)
Normal Karyotype, Proteomic-Unfav (n=40)
Normal Karyotype, Proteomic-Int (n=57)
p=0.044
Overall survival
1
0.75
0.5
0.25
0
0
1
2
3
4
5
6
7
8
Years from study entry

Figure S9

A AAML1031 low-risk



B AAML1031 high-risk

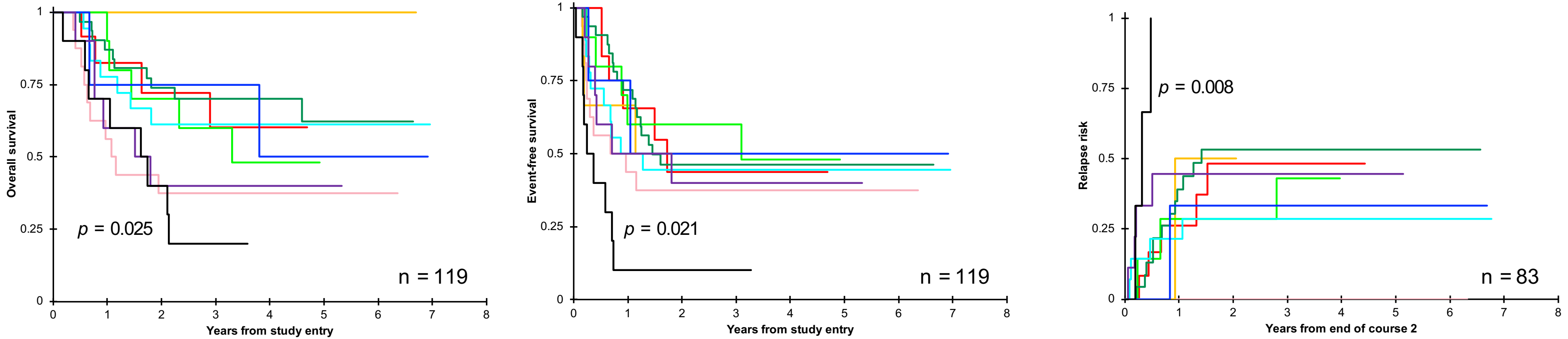


Table S1

Protein Name Rosetta Stone					RPPA Staining Details						
Antibody name	**RPPA Antibody name**	**HUGO name (added with PTM)**	**MiMI name**	**Full description/ GeneCards name**	**R2, WB vs. RPPA**	**Host**	**Company**	**Catalog**	**Primary dilution**	**Secondary dilution**	**Protein Functional Group**
c-Abl	ABL1	ABL1	ABL1	ABL Proto-Oncogene 1, Non-Receptor Tyrosine Kinase	> 0.7	Rabbit	Cell Signaling	2862	75	15000	STP
beta-Actin	ACTB	ACTB	ACTB	Actin Beta	> 0.7	Mouse	Sigma-Aldrich	A5541	10000	15000	Cytoskeletal
AIF	AIFM1	AIFM1	AIFM1	Apoptosis Inducing Factor Mitochondria Associated 1	0.5 - 0.7	Mouse	Santa Cruz Biotechnology	sc-13116	500	15000	Apoptosis Regulating
Akt1	AKT1	AKT1	AKT1	AKT Serine/Threonine Kinase 1	> 0.7	Mouse	Cell Signaling	2967	500	15000	PI3KAKT
Akt1	AKT1_2_3	AKT1/2/3	AKT1/2/3	AKT Serine/Threonine Kinase 1/2/3	> 0.7	Mouse	Cell Signaling	9272	250	15000	PI3KAKT
Phospho-Akt (Ser473)	AKT1_2_3.pS473	AKT1/2/3 Phospho Ser 473	AKT1/2/3	AKT Serine/Threonine Kinase 1/2/3	> 0.7	Rabbit	Cell Signaling	9271	200	15000	PI3KAKT
Phospho-Akt (Thr308)	AKT1_2_3.pT308	AKT1/2/3 Phospho Thr 308	AKT1/2/3	AKT Serine/Threonine Kinase 1/2/3	> 0.7	Rabbit	Cell Signaling	9275	200	15000	PI3KAKT
PRAS40	AKT1S1	AKT1S1	AKT1S1	AKT1 Substrate 1	0.5 - 0.7	Mouse	Thermo Fisher Scientific	AH01031	200	15000	mTOR
Phospho-PRAS40 (Thr246)	AKT1S1.pT246	AKT1S1 Phospho Thr 246	AKT1S1	AKT1 Substrate 1	> 0.7	Rabbit	Cell Signaling	2997	200	15000	mTOR
Akt2	AKT2	AKT2	AKT2	AKT Serine/Threonine Kinase 2	> 0.7	Rabbit	Cell Signaling	2962	200	15000	PI3KAKT
Akt3	AKT3	AKT3	AKT3	AKT Serine/Threonine Kinase 3	> 0.7	Rabbit	Cell Signaling	4059	200	15000	PI3KAKT
A-Raf	ARAF	ARAF	ARAF	A-Raf Proto-Oncogene, Serine/Threonine Kinase	> 0.7	Rabbit	Cell Signaling	4432	150	15000	MEK
Anti-ARID1A	ARID1A	ARID1A	ARID1A	AT-Rich Interaction Domain 1A	0.5 - 0.7	Rabbit	Sigma-Aldrich	HPA005456	2000	15000	Transcription
ASH2L	ASH2L	ASH2L	ASH2L	ASH2 Like, Histone Lysine Methyltransferase Complex Subunit	> 0.7	Rabbit	Cell Signaling	5019	5000	15000	Histone
Anti-ASNS	ASNS	ASNS	ASNS	Asparagine Synthetase (Glutamine-Hydrolyzing)	0.5 - 0.7	Rabbit	Sigma-Aldrich	HPA029318	800	15000	Metabolic
Ass1	ASS1	ASS1	ASS1	Argininosuccinate Synthase 1	0.5 - 0.7	Mouse	Palars	Uncommercial	500	15000	Metabolic
Anti-ATF3	ATF3	ATF3	ATF3	Activating Transcription Factor 3	> 0.7	Rabbit	Abcam	ab87213	500	15000	CREB
Atg3	ATG3	ATG3	ATG3	Autophagy Related 3	> 0.7	Rabbit	Cell Signaling	3415	100	15000	Autophagy
Atg7	ATG7	ATG7	ATG7	Autophagy Related 7	> 0.7	Rabbit	Cell Signaling	8558	500	15000	Autophagy
ATM	ATM	ATM	ATM	ATM Serine/Threonine Kinase	> 0.7	Rabbit	Cell Signaling	2873	750	15000	DNA damage, TP53
Phospho-ATM (Ser1981)	ATM.pS1981	ATM Phospho Ser 1981	ATM	ATM Serine/Threonine Kinase	> 0.7	Rabbit	Cell Signaling	5883	250	15000	DNA damage, TP53
Axl	AXL	AXL	AXL	AXL Receptor Tyrosine Kinase	> 0.7	Rabbit	Cell Signaling	8661	1000	15000	STP
Anti-Bak	BAK1	BAK1	BAK1	BCL2 Antagonist/Killer 1	0.5 - 0.7	Rabbit	Abcam	ab32371	50	15000	Apoptosis BH3
Bax	BAX	BAX	BAX	BCL2 Associated X, Apoptosis Regulator	> 0.7	Rabbit	Cell Signaling	2772	300	15000	Apoptosis BH3
Puma	BBC3	BBC3	BBC3	BCL2 Binding Component 3	0.5 - 0.7	Rabbit	Cell Signaling	4976	75	15000	Apoptosis BH3
BCL2	BCL2	BCL2	BCL2	BCL2, Apoptosis Regulator	> 0.7	Mouse	Dako	M0887	500	15000	Apoptosis BH3
BCL2A1	BCL2A1	BCL2A1	BCL2A1	BCL2 Related Protein A1	> 0.7	Rabbit	Abnova	PAB8528	300	15000	Apoptosis BH3
Bcl-xL	BCL2L1	BCL2L1	BCL2L1	BCL2 Like 1	> 0.7	Rabbit	Cell Signaling	2762	400	15000	Apoptosis BH3
Bim	BCL2L11	BCL2L11	BCL2L11	BCL2 Like 11	> 0.7	Rabbit	Epitomics	1036-1	200	15000	Apoptosis BH3
Beclin-1	BECN1	BECN1	BECN1	Beclin 1	0.5 - 0.7	Rabbit	Cell Signaling	3738	500	15000	Autophagy
BID	BID	BID	BID	BH3 Interacting Domain Death Agonist	0.5 - 0.7	Rabbit	Cell Signaling	2002	500	15000	Apoptosis BH3
Anti-HIAP-2 (cIAP-1)	BIRC2	BIRC2	BIRC2	Baculoviral IAP Repeat Containing 2	0.5 - 0.7	Rabbit	Merck	07-759	500	15000	Apoptosis Regulating
Bmi1	BMI1	BMI1	BMI1	BMI1 Proto-Oncogene, Polycomb Ring Finger	0.5 - 0.7	Rabbit	Cell Signaling	2830	100	15000	Histone
Raf-B	BRAF	BRAF	BRAF	B-Raf Proto-Oncogene, Serine/Threonine Kinase	0.5 - 0.7	Mouse	Santa Cruz Biotechnology	sc-5284	100	15000	MEK
Phospho-B-Raf (Ser445)	BRAF.pS445	BRAF Phospho Ser 445	BRAF	B-Raf Proto-Oncogene, Serine/Threonine Kinase	0.5 - 0.7	Rabbit	Cell Signaling	2696	1000	15000	MEK
BRCA2	BRCA2	BRCA2	BRCA2	BRCA2, DNA Repair Associated	0.5 - 0.7	Rabbit	Cell Signaling	9012	100	15000	DNA damage
BRD4	BRD4	BRD4	BRD4	Bromodomain Containing 4	> 0.7	Rabbit	Epitomics	5716-1(ab128874)	1000	15000	Histone
Caspase-3	CASP3	CASP3	CASP3	Caspase 3	0.5 - 0.7	Rabbit	Cell Signaling	9662	2000	15000	Apoptosis Occurring
Anti-active Caspase-3	CASP3.cle	CASP3.cle	CASP3.cle	Caspase 3	0.5 - 0.7	Rabbit	Abcam	ab32042	250	15000	Apoptosis Occurring
Cleaved Caspase-7 (Asp198)	CASP7.cle	CASP7.cle	CASP7.cle	Caspase 7	0.5 - 0.7	Rabbit	Cell Signaling	9491	75	15000	Apoptosis Occurring
Caspase-9	CASP9	CASP9	CASP9	Caspase 9	0.5 - 0.7	Mouse	BD Biosciences	551246	100	15000	Apoptosis Occurring
Caveolin-1	CAV1	CAV1	CAV1	Caveolin 1	> 0.7	Rabbit	Cell Signaling	3238	100	15000	Unfolded Protein Response
Cbx7	CBX7	CBX7	CBX7	Chromobox 7	0.5 - 0.7	Rabbit	Abcam	ab21873	1000	18000	Histone
Cyclin B1	CCNB1	CCNB1	CCNB1	Cyclin B1	> 0.7	Rabbit	Epitomics	1495-1	500	15000	Cell Cycle
cyclin D1	CCND1	CCND1	CCND1	Cyclin D1	> 0.7	Rabbit	Santa Cruz Biotechnology	sc-718	200	15000	Cell Cycle
Cyclin D3	CCND3	CCND3	CCND3	Cyclin D3	> 0.7	Mouse	Cell Signaling	2936	200	15000	Cell Cycle
cyclin E1	CCNE1	CCNE1	CCNE1	Cyclin E1	> 0.7	Mouse	Santa Cruz Biotechnology	sc-247	100	15000	Cell Cycle
CD44	CD44	CD44	CD44	CD44 Molecule (Indian Blood Group)	0.5 - 0.7	Mouse	Cell Signaling	3570	100	15000	Adhesion
CD74	CD74	CD74	CD74	CD74 Molecule	0.5 - 0.7	Mouse	Santa Cruz Biotechnology	sc-6262	150	15000	T-cell
E-Cadherin	CDH1	CDH1	CDH1	Cadherin 1	> 0.7	Rabbit	Cell Signaling	3195	50	15000	Adhesion
N-Cadherin	CDH2	CDH2	CDH2	Cadherin 2	> 0.7	Rabbit	Cell Signaling	4061	50	15000	Adhesion
Anti-Cdc2/Cdk1	CDK1	CDK1	CDK1	Cyclin Dependent Kinase 1	0.5 - 0.7	Mouse	Calbiochem	cc01	75	15000	Cell Cycle
Phospho-cdc2 (Tyr15)	CDK1.pT15	CDK1 Phospho Tyr 15	CDK1	Cyclin Dependent Kinase 1	?	Rabbit	Cell Signaling	4539	250	15000	Cell Cycle
Cdk2	CDK2	CDK2	CDK2	Cyclin Dependent Kinase 2	> 0.7	Mouse	Santa Cruz Biotechnology	sc-6248	200	15000	Cell Cycle
p21	CDKN1A	CDKN1A	CDKN1A	Cyclin Dependent Kinase Inhibitor 1A	> 0.7	Rabbit	Santa Cruz Biotechnology	sc-397	1000	15000	Cell Cycle
Anti-p27 KIP 1	CDKN1B	CDKN1B	CDKN1B	Cyclin Dependent Kinase Inhibitor 1B	> 0.7	Rabbit	Abcam	ab32034	100	15000	Cell Cycle
Phospho p27 kip1 (pS10)	CDKN1B.pS10	CDKN1B Phospho Ser 10	CDKN1B	Cyclin Dependent Kinase Inhibitor 1B	> 0.7	Rabbit	Epitomics	2187-1	500	15000	Cell Cycle
Phospho-p27/Kip1 (T157)	CDKN1B.pT157	CDKN1B Phospho Thr 157	CDKN1B	Cyclin Dependent Kinase Inhibitor 1B	0.5 - 0.7	Rabbit	R&D Systems	AF1555	200	15000	Cell Cycle
Anti-p27 KIP 1 (phospho T198)	CDKN1B.pT198	CDKN1B Phospho Thr 198	CDKN1B	Cyclin Dependent Kinase Inhibitor 1B	> 0.7	Rabbit	Abcam	ab64949	250	15000	Cell Cycle
Anti-CDKN2A/p16INK4a	CDKN2A	CDKN2A	CDKN2A	Cyclin Dependent Kinase Inhibitor 2A	> 0.7	Rabbit	Abcam	ab81278	200	15000	Cell Cycle
CDX2	CDX2	CDX2	CDX2	Caudal Type Homeobox 2	0.5 - 0.7	Rabbit	Cell Signaling	12306	100	10000	-
Chk1	CHEK1	CHEK1	CHEK1	Checkpoint Kinase 1	0.5 - 0.7	Mouse	Cell Signaling	2360	500	15000	DNA damage
Anti-Chk1 (phospho S296)	CHEK1.pS296	CHEK1 Phospho Ser 296	CHEK1	Checkpoint Kinase 1	> 0.7	Rabbit	Abcam	ab79758	150	15000	DNA damage
Phospho-Chk1 (Ser345)	CHEK1.pS345	CHEK1 Phospho Ser 345	CHEK1	Checkpoint Kinase 1	0.5 - 0.7	Rabbit	Cell Signaling	2348	100	15000	DNA damage
Chk2	CHEK2	CHEK2	CHEK2	Checkpoint Kinase 2	> 0.7	Mouse	Cell Signaling	3440	150	15000	DNA damage
Phospho-Chk2 (Thr68)	CHEK2.pT68	CHEK2 Phospho Thr 68	CHEK2	Checkpoint Kinase 2	0.5 - 0.7	Rabbit	Cell Signaling	2197	500	15000	DNA damage
Anti-CLPP	CLPP	CLPP	CLPP	Caseinolytic Mitochondrial Matrix Peptidase Proteolytic Subunit	> 0.7	Rabbit	Abcam	ab124822	500	20000	Histone
COG3	COG3	COG3	COG3	Component Of Oligomeric Golgi Complex 3	> 0.7	Rabbit	Proteintech	11130-1-AP	800	15000	MAPK
CREB	CREB1	CREB1	CREB1	CAMP Responsive Element Binding Protein 1	> 0.7	Rabbit	Epitomics	1496-1	200	15000	CREB
Phospho-CREB (pS133)	CREB1.pS133	CREB1 Phospho Ser 133	CREB1	CAMP Responsive Element Binding Protein 1	0.5 - 0.7	Rabbit	Epitomics	1113-1	2000	15000	CREB
CK2α	CSNK2A1	CSNK2A1	CSNK2A1	Casein Kinase 2 Alpha 1	0.5 - 0.7	Rabbit	Cell Signaling	2656	300	15000	Apoptosis Regulating
β-Catenin	CTNNB1	CTNNB1	CTNNB1	Catenin Beta 1	> 0.7	Rabbit	Cell Signaling	9562	100	15000	Wnt signaling
Phospho-β-Catenin (Ser33/37/Thr41)	CTNNB1.pS33_37_T41	CTNNB1 Phospho Ser 33/37 Tyr41	CTNNB1	Catenin Beta 1	> 0.7	Rabbit	Cell Signaling	9561	3000	15000	Wnt signaling
Phospho-β-Catenin (Thr41/Ser45)	CTNNB1.pT41_S45	CTNNB1 Phospho Thr 41 Ser 45	CTNNB1	Catenin Beta 1	> 0.7	Rabbit	Cell Signaling	9565	500	15000	Wnt signaling
Anti-Cathepsin G	CTSG	CTSG	CTSG	Cathepsin G	> 0.7	Sheep	Abcam	ab8816	500	30000	Adhesion
Anti-DDX17	DDX17	DDX17	DDX17	DEAD-Box Helicase 17	0.5 - 0.7	Rabbit	Abcam	ab180190	2000	15000	Ribosome
DLX1	DLX1	DLX1	DLX1	Distal-Less Homeobox 1	0.5 - 0.7	Mouse	Novus Biologicals	H00001745-M15	50	15000	Transcription
Anti-DUSP6	DUSP6	DUSP6	DUSP6	Dual Specificity Phosphatase 6	> 0.7	Rabbit	Abcam	ab76310	5000	20000	Phosphatase
E2F-1	E2F1	E2F1	E2F1	E2F Transcription Factor 1	> 0.7	Mouse	Santa Cruz Biotechnology	sc-251	50	15000	Cell Cycle
eEF2	EEF2	EEF2	EEF2	Eukaryotic Translation Elongation Factor 2	0.5 - 0.7	Rabbit	Cell Signaling	2332	75	15000	Ribosome
eEF2k	EEF2K	EEF2K	EEF2K	Eukaryotic Elongation Factor 2 Kinase	> 0.7	Rabbit	Cell Signaling	3692	75	15000	Ribosome
EGF Receptor	EGFR	EGFR	EGFR	Epidermal Growth Factor Receptor	> 0.7	Rabbit	Cell Signaling	2232	100	15000	STP
Anti-EGFR (phospho Y1173)	EGFR.pT1173	EGFR Phospho Thr 1173	EGFR	Epidermal Growth Factor Receptor	> 0.7	Rabbit	Abcam	ab32578	75	15000	STP
Anti-PHD2	EGLN1	EGLN1	EGLN1	gl-9 Family Hypoxia Inducible Factor 1	0.5 - 0.7	Mouse	Merck	05-1327	500	15000	Hypoxia
EIF2AK2	EIF2AK2	EIF2AK2	EIF2AK2	Eukaryotic Translation Initiation Factor 2 Alpha Kinase 2	0.5 - 0.7	Mouse	Abnova	H00005610-M01	10000	15000	Ribosome
Phospho-PKR (Thr451)	EIF2AK2.pT451	EIF2AK2A1 Phospho Thr 451	EIF2AK2	Eukaryotic Translation Initiation Factor 2 Alpha Kinase 2	0.5 - 0.7	Mouse	Thermo Fisher Scientific	44668G	500	15000	Ribosome
eIF2α	EIF2S1	EIF2S1	EIF2S1	Eukaryotic Translation Initiation Factor 2 Subunit Alpha	0.5 - 0.7	Rabbit	Cell Signaling	9722	4000	15000	Ribosome, unfolded protein response
Phospho-eIF2α (Ser51)	EIF2S1.pS51	EIF2S1 Phospho Ser 51	EIF2S1	Eukaryotic Translation Initiation Factor 2 Subunit Alpha	> 0.7	Rabbit	Cell Signaling	9721	500	15000	Ribosome, unfolded protein response
eIF4E	EIF4E	EIF4E	EIF4E	Eukaryotic Translation Initiation Factor 4E	> 0.7	Rabbit	Cell Signaling	9742	800	15000	Ribosome
4E-BP1	EIF4EBP1	EIF4EBP1	EIF4EBP1	Eukaryotic Translation Initiation Factor 4E Binding Protein 1	> 0.7	Rabbit	Cell Signaling	9452	1000	15000	Ribosome
Phospho-4E-BP1 (Thr37/46)	EIF4EBP1.pT37_46	EIF4EBP1 Phospho Thr 37/46	EIF4EBP1	Eukaryotic Translation Initiation Factor 4E Binding Protein 1	> 0.7	Rabbit	Cell Signaling	9459	20000	15000	Ribosome
eIF4G	EIF4G1	EIF4G1	EIF4G1	Eukaryotic Translation Initiation Factor 4 Gamma 1	0.5 - 0.7	Rabbit	Cell Signaling	2498	2000	15000	Ribosome
Anti-HuR	ELAVL1	ELAVL1	ELAVL1	ELAV Like RNA Binding Protein 1	> 0.7	Rabbit	Merck	07-1735	2000	20000	Ribosome
Phospho-Elk-1 (Ser383)	ELK1.pS383	ELK1 Phospho Ser 383	ELK1	ELK1, ETS Transcription Factor	0.5 - 0.7	Rabbit	Cell Signaling	9181	300	15000	MEK, transcription
Anti-KAT3B / p300	EP300	EP300	EP300	E1A Binding Protein P300		Mouse	Abcam	ab3164	250	15000	CREB, Hypoxia
ERCC1	ERCC1	ERCC1	ERCC1	ERCC Excision Repair 1, Endonuclease Non-Catalytic Subunit	> 0.7	Mouse	Santa Cruz Biotechnology	sc-17809	75	15000	DNA damage
XPG	ERCC5	ERCC5	ERCC5	ERCC Excision Repair 5, Endonuclease	0.5 - 0.7	Rabbit	Proteintech	11331-1-AP	300	15000	DNA damage
Erg-1/2/3	ERG	ERG	ERG	ERG, ETS Transcription Factor	> 0.7	Rabbit	Santa Cruz Biotechnology	sc-353	1000	15000	Transcription
IRE1α	ERN1	ERN1	ERN1	Endoplasmic Reticulum To Nucleus Signaling 1	0.5 - 0.7	Rabbit	Cell Signaling	3294	1000	20000	Unfolded Protein Response
Ets-1	ETS1	ETS1	ETS1	ETS Proto-Oncogene 1, Transcription Factor	> 0.7	Rabbit	Bethyl	A303-501A	800	15000	Transcription
Fli1	FLI1	FLI1	FLI1	Fli-1 Proto-Oncogene, ETS Transcription Factor	> 0.7	Rabbit	Watson	?	2000	15000	Transcription

FoxM1	FOXM1	FOXM1	FOXM1	Forkhead Box M1	> 0.7	Rabbit	Cell Signaling	5436	75	15000	PI3KAKT
FoxO3a	FOXO3A	FOXO3A	FOXO3A	Forkhead Box O3	> 0.7	Rabbit	Cell Signaling	2497	50	15000	PI3KAKT
Phospho-FoxO3a (Ser318/321)	FOXO3A.pS318_321	FOXO3A Phospho Ser 318/321	FOXO3A	Forkhead Box O3	0.5 - 0.7	Rabbit	Cell Signaling	9465	10000	15000	PI3KAKT
FZR1	FZR1	FZR1	FZR1	Fizzy And Cell Division Cycle 20 Related 1	> 0.7	Rabbit	LSBio	LS-C159693	1000	20000	Cell Cycle
Gab2	GAB2	GAB2	GAB2	GRB2 Associated Binding Protein 2	> 0.7	Rabbit	Cell Signaling	3239	800	15000	STP
Phospho-Gab2 (Tyr452)	GAB2.pT452	GAB2 Phospho Thr 453	GAB2	GRB2 Associated Binding Protein 2	0.5 - 0.7	Rabbit	Cell Signaling	3882	50	15000	STP
GAPDH	GAPDH	GAPDH	GAPDH	Glyceraldehyde-3-Phosphate Dehydrogenase	0.5 - 0.7	Mouse	Thermo Fisher Scientific	AM4300	2000	15000	Metabolic
GATA-1	GATA1	GATA1	GATA1	GATA Binding Protein 1	> 0.7	Rabbit	Cell Signaling	3535	1000	15000	Transcription
GATA3	GATA3	GATA3	GATA3	GATA Binding Protein 3	> 0.7	Mouse	BD Biosciences	558986	800	15000	Transcription
BiP/GRP78	GRP78	GRP78	GRP78	Heat Shock Protein Family A (Hsp70) Member 5	> 0.7	Mouse	BD Biosciences	610978	1000	15000	Heat shock, unfolded protein response
GSK-3α/β	GSK3A_B	GSK3A/B	GSK3A/B	Glycogen Synthase Kinase 3 Alpha/ Beta	> 0.7	Mouse	Santa Cruz Biotechnology	sc-7291	300	15000	Metabolic, PI3KAKT
Phospho-GSK-3α/β (Ser21/9)	GSK3A_B.pS21_9	GSK3A/B Phospho Ser 21/9	GSK3A/B	Glycogen Synthase Kinase 3 Alpha/ Beta	> 0.7	Rabbit	Cell Signaling	9331	200	15000	Metabolic, PI3KAKT
Phospho-Histone H2A.X (Ser140)	H2AX.pS140	H2AX Phospho Ser 140	H2AX	H2A Histone Family Member X	0.5 - 0.7	Mouse	Thermo Fisher Scientific	MA1-2022	400	15000	-
Histone H3K27me3	H3K27Me3	H3K27Me3	H3K27Me3	Histone cluster 3, H3 , Lysine 27 methylation 3	> 0.7	Mouse	Active Motive	61017	4000	15000	Histone
Histone H3K36me3	H3K36Me3	H3K36Me3	H3K36Me3	Histone cluster 3, H3 , Lysine 36 methylation 3	> 0.7	Rabbit	Active Motive	61011	20000	20000	Histone
Histone H3K4me2	H3K4Me2	H3K4Me2	H3K4Me2	Histone cluster 3, H3 , Lysine 4 methylation 2	> 0.7	Rabbit	Active Motive	39141	8000	15000	Histone
Histone H3K4me3	H3K4Me3	H3K4Me3	H3K4Me3	Histone cluster 3, H3 , Lysine 4 methylation 3	> 0.7	Rabbit	Active Motive	39159	10000	15000	Histone
Anti-Histone H3 (di methyl K9)	H3K9Me2	H3K9Me2	H3K9Me2	Histone cluster 3, H3 , Lysine 9 methylation 2	0.5 - 0.7	Rabbit	Abcam	ab32521	300	15000	Histone
HDAC1	HDAC1	HDAC1	HDAC1	Histone Deacetylase 1	0.5 - 0.7	Rabbit	Imgenex	IM-337	400	15000	Histone
HDAC2	HDAC2	HDAC2	HDAC2	Histone Deacetylase 2	> 0.7	Rabbit	Santa Cruz Biotechnology	sc-7899	1000	15000	Histone
Histone Deacetylase 3 (HDAC3)	HDAC3	HDAC3	HDAC3	Histone Deacetylase 3	0.5 - 0.7	Rabbit	Cell Signaling	2632	100	15000	Histone
HDAC6	HDAC6	HDAC6	HDAC6	Histone Deacetylase 6	> 0.7	Rabbit	Cell Signaling	7558	10000	20000	Histone
HIF-1α	HIF1A	HIF1A	HIF1A	Hypoxia Inducible Factor 1 Subunit Alpha	> 0.7	Mouse	BD Biosciences	610959	25	15000	Hypoxia
Histone H3, C-terminal antibody	HIST3H3	HIST3H3	HIST3H3	Histone Cluster 3 H3	> 0.7	Rabbit	Active Motive	39163	40000	20000	Histone
hnRNP K	HNRNPK	HNRNPK	HNRNPK	Heterogeneous Nuclear Ribonucleoprotein K	0.5 - 0.7	Mouse	Santa Cruz Biotechnology	sc-28380	10000	15000	Histone, Ribosome
HSF1	HSF1	HSF1	HSF1	Heat Shock Transcription Factor 1	> 0.7	Rabbit	Cell Signaling	4356	1000	15000	Heat shock
Anti-HSF1 (phospho S326)	HSF1.pS326	HSF1 Phospho Ser 326	HSF1	Heat Shock Transcription Factor 1	> 0.7	Rabbit	Abcam	ab76076	5000	15000	Heat shock
HSP90	HSP90AA1_B1	HSP90AA1/B1	HSP90AA1/B1	Heat Shock Protein 90 Alpha Family Class A/B Member 1	0.5 - 0.7	Rabbit	Cell Signaling	4874	1000	15000	Heat shock
HSP70	HSPA1A_L	HSPA1A_L	HSPA1A_L	Heat Shock Protein Family A (Hsp70) Member 1A/ 1 Like	0.5 - 0.7	Rabbit	Cell Signaling	4872	250	15000	Heat shock
HSP27	HSPB1	HSPB1	HSPB1	Heat Shock Protein Family B (Small) Member 1	0.5 - 0.7	Mouse	Cell Signaling	2402	250	15000	Heat shock
Phospho-HSP27 (Ser82)	HSPB1.pS82	HSPB1 Phospho Ser 82	HSPB1	Heat Shock Protein Family B (Small) Member 1	> 0.7	Rabbit	Cell Signaling	2401	100	15000	Heat shock
IGF-I Receptor β	IGF1R	IGF1R	IGF1R	Insulin Like Growth Factor 1 Receptor	0.5 - 0.7	Rabbit	Cell Signaling	3027	1500	15000	STP
Phospho-IGF-I Receptor β (Tyr1135/1136)/Insulin Receptor β (Tyr1150/1151)	IGF1R.pY1135_1136	IGF1R Phospho Tyr 1135/1136	IGF1R	Insulin Like Growth Factor 1 Receptor	> 0.7	Rabbit	Cell Signaling	3024	75	15000	STP
IGFBP2	IGFBP2	IGFBP2	IGFBP2	Insulin Like Growth Factor Binding Protein 2	> 0.7	Rabbit	Cell Signaling	3922	150	15000	STP
SHIP2	INPPL1	INPPL1	INPPL1	Inositol Polyphosphate Phosphatase Like 1	> 0.7	Rabbit	Cell Signaling	2730	150	10000	PI3KAKT
CD49b	ITGA2	ITGA2	ITGA2	Integrin Subunit Alpha 2	> 0.7	Mouse	BD Biosciences	611016	100	15000	Adhesion
CD11a	ITGAL	ITGAL	ITGAL	Integrin Subunit Alpha L	> 0.7	Mouse	BD Biosciences	610826	500	15000	Adhesion
CD29	ITGB1	ITGB1	ITGB1	Integrin Subunit Beta 1	> 0.7	Mouse	BD Biosciences	610467	75	15000	Adhesion
Anti-Jagged1	JAG1	JAG1	JAG1	Jagged 1	> 0.7	Rabbit	Abcam	ab109536	300	15000	T-cell
Jak2	JAK2	JAK2	JAK2	Janus Kinase 2	> 0.7	Rabbit	Cell Signaling	3230	200	15000	STAT
Anti-JMJD6	JMJD6	JMJD6	JMJD6	Arginine Demethylase And Lysine Hydroxylase	0.5 - 0.7	Rabbit	Abcam	ab50720	1000	15000	Histone
Phospho-c-Jun (Ser73)	JUN.pS72	JUN Phospho Ser 72	JUN	Jun Proto-Oncogene, AP-1 Transcription Factor Subunit	> 0.7	Rabbit	Cell Signaling	9164	100	15000	Transcription
JunB	JUNB	JUNB	JUNB	JunB Proto-Oncogene, AP-1 Transcription Factor Subunit	> 0.7	Rabbit	Cell Signaling	3755	100	15000	Transcription
LSD1	KDM1A	KDM1A	KDM1A	Lysine Demethylase 1A	> 0.7	Rabbit	Cell Signaling	2184	3000	15000	Histone
VEGF Receptor 2	KDR	KDR	KDR	Kinase Insert Domain Receptor	> 0.7	Rabbit	Cell Signaling	2479	500	15000	Hypoxia
c-Kit	KIT	KIT	KIT	KIT Proto-Oncogene Receptor Tyrosine Kinase	> 0.7	Rabbit	Epitomics	1522-1	1500	15000	STP
LATS1	LATS1	LATS1	LATS1	Large Tumor Suppressor Kinase 1	> 0.7	Rabbit	Cell Signaling	3477	1000	20000	HIPPO
Lck	LCK	LCK	LCK	LCK Proto-Oncogene, Src Family Tyrosine Kinase	> 0.7	Rabbit	Cell Signaling	2752	1000	15000	SRC,T-cell
LEF1	LEF1	LEF1	LEF1	Lymphoid Enhancer Binding Factor 1	> 0.7	Rabbit	Cell Signaling	2230	2000	15000	Wnt signaling
Lyn	LYN	LYN	LYN	LYN Proto-Oncogene, Src Family Tyrosine Kinase	> 0.7	Rabbit	Cell Signaling	2732	400	15000	SRC, STP
Anti-MEK1	MAP2K1	MAP2K1	MAP2K1	Mitogen-Activated Protein Kinase Kinase 1	?	Rabbit	Abcam	ab32576	10000	15000	MAPK
MEK1/2	MAP2K1_2	MAP2K1/2	MAP2K1/2	Mitogen-Activated Protein Kinase Kinase 1/2	> 0.7	Rabbit	Cell Signaling	9122	8000	15000	MAPK
Phospho-MEK1/2 (Ser217/221)	MAP2K1_2.pS217_221	MAP2K1/2 Phospho Ser 217/221	MAP2K1/2	Mitogen-Activated Protein Kinase Kinase 1/2	0.5 - 0.7	Rabbit	Cell Signaling	9121	2000	15000	MAPK
MEK2	MAP2K2	MAP2K2	MAP2K2	Mitogen-Activated Protein Kinase Kinase 2	> 0.7	Rabbit	Cell Signaling	9125	500	15000	MAPK
ERK 2	MAPK1	MAPK1	MAPK1	Mitogen-Activated Protein Kinase 1	> 0.7	Rabbit	Santa Cruz Biotechnology	sc-154	10000	15000	MAPK
Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204)	MAPK1_3.pT202_204	MAPK1/3 Phospho Thr 202/204	MAPK1/3	Mitogen-Activated Protein Kinase 1/3	> 0.7	Rabbit	Cell Signaling	9101	1000	15000	MAPK
p38 MAPK	MAPK14	MAPK14	MAPK14	Mitogen-Activated Protein Kinase 14	> 0.7	Rabbit	Cell Signaling	9212	1000	15000	MAPK
Phospho-p38 MAPK (Thr180/Tyr182)	MAPK14.pT180_182	MAPK14 Phospho Thr 180/182	MAPK14	Mitogen-Activated Protein Kinase 14	> 0.7	Rabbit	Cell Signaling	9211	200	15000	MAPK
JNK1/3	MAPK8_10	MAPK8/10	MAPK8/10	Mitogen-Activated Protein Kinase 8/10	> 0.7	Rabbit	Santa Cruz Biotechnology	sc-474	1000	15000	MAPK
Phospho-SAPK/JNK (Thr183/Tyr185)	MAPK8_10.pT183_185	MAPK8 Phospho Thr 183 Tyr 185	MAPK8	Mitogen-Activated Protein Kinase 8/10	> 0.7	Rabbit	Cell Signaling	4668	300	15000	MAPK
JNK2	MAPK9	MAPK9	MAPK9	Mitogen-Activated Protein Kinase 9	0.5 - 0.7	Rabbit	Cell Signaling	4672	50	15000	MAPK
Mcl-1	MCL1	MCL1	MCL1	MCL1, BCL2 Family Apoptosis Regulator	> 0.7	Rabbit	Cell Signaling	5453	100	15000	Apoptosis BH3
MDM2	MDM2	MDM2	MDM2	MDM2 Proto-Oncogene	0.5 - 0.7	Rabbit	Santa Cruz Biotechnology	sc-813	5000	15000	TP53
Phospho-MDM2 (Ser166)	MDM2.pS166	MDM2 Phospho Ser 166	MDM2	MDM2 Proto-Oncogene	> 0.7	Rabbit	Cell Signaling	3521	200	15000	TP53
HdmX/MDM4	MDM4	MDM4	MDM4	MDM4, P53 Regulator	> 0.7	Rabbit	Bethyl	A300-287A	800	15000	TP53
MEF2C	MEF2C	MEF2C	MEF2C	Myocyte Enhancer Factor 2C	> 0.7	Rabbit	Cell Signaling	5030	1000	20000	Transcription
Phospho-Met (Tyr1234/1235)	MET.pY1230_1234_1235	MET Phospho Tyr 1230/1234/1235	MET	MET Proto-Oncogene, Receptor Tyrosine Kinase	> 0.7	Rabbit	Cell Signaling	3129	100	15000	MEK
Mnk1	MKNK1	MKNK1	MKNK1	MAP Kinase Interacting Serine/Threonine Kinase 1	> 0.7	Rabbit	Cell Signaling	2195	1000	15000	MAPK
MMP-2	MMP2	MMP2	MMP2	Matrix Metallopeptidase 2	> 0.7	Rabbit	Cell Signaling	4022	100	15000	Adhesion
MSH2	MSH2	MSH2	MSH2	MutS Homolog 2	> 0.7	Mouse	Cell Signaling	2850	150	15000	DNA damage
MSH6	MSH6	MSH6	MSH6	MutS Homolog 6	0.5 - 0.7	Rabbit	Novus Biologicals	22030002	2000	15000	DNA damage
MSI2	MSI2	MSI2	MSI2	Musashi RNA Binding Protein 2	0.5 - 0.7	Mouse	Merck	MAB10085	500	15000	Ribosome
mTOR	MTOR	MTOR	MTOR	Mechanistic Target Of Rapamycin Kinase	> 0.7	Rabbit	Cell Signaling	2983	500	15000	mTOR
Ema	MUC1	MUC1	MUC1	Mucin 1, Cell Surface Associated	0.5 - 0.7	Mouse	Dako	M061329-2	1000	15000	Adhesion
c-Myc	MYC	MYC	MYC	MYC Proto-Oncogene	> 0.7	Rabbit	Cell Signaling	9402	200	15000	Transcription
Myosin heavy chain 11	MYH11	MYH11	MYH11	Myosin Heavy Chain 11	> 0.7	Rabbit	Novus Biologicals	21370002	2000	15000	Cytoskeletal
Phospho-Myosin IIa (Ser1943)	MYH9.pS1943	MYH9 Phospho Ser 1943	MYH9	Myosin Heavy Chain 9	> 0.7	Rabbit	Cell Signaling	5026	750	15000	-
C23	NCL	NCL	NCL	CLN5, Intracellular Trafficking Protein	> 0.7	Mouse	Santa Cruz Biotechnology	sc-8031	200	15000	Histone
Phospho-NDRG1 (Thr346)	NDRG1.pT346	NDRG Phospho Thr 346	NDRG	NDRG Family Member 2	> 0.7	Rabbit	Cell Signaling	3217	500	15000	Ribosome
NF2	NF2	NF2	NF2	Neurofibromin 2	0.5 - 0.7	Rabbit	Santa Cruz Biotechnology	sc-331	800	15000	HIPPO
NRF2	NFE2L2	NFE2L2	NFE2L2	Nuclear Factor, Erythroid 2 Like 2	> 0.7	Rabbit	Cell Signaling	12721	250	10000	Transcription
NLN	NLN	NLN	NLN	Neurolysin	> 0.7	Mouse	Thermo Fisher Scientific	TA504178	1000	18000	Metabolic
ARC/NOL3	NOL3	NOL3	NOL3	Activity Regulated Cytoskeleton Associated Protein	0.5 - 0.7	Rabbit	Novus Biologicals	NBP2-41753	2000	15000	Cytoskeletal
Notch1	NOTCH1	NOTCH1	NOTCH1	Notch 1	> 0.7	Rabbit	Cell Signaling	3268	150	15000	T-cell
Cleaved Notch1 (Val1744)	NOTCH1.cl1744	NOTCH1.cl1744	NOTCH1.cl1744	Notch 1	> 0.7	Rabbit	Cell Signaling	4147	400	15000	T-cell
Notch 3	NOTCH3	NOTCH3	NOTCH3	Notch 3	0.5 - 0.7	Rabbit	Santa Cruz Biotechnology	sc-5593	500	15000	T-cell
NPM1	NPM1	NPM1	NPM1	Nucleophosmin 1	> 0.7	Mouse	Invitrogen	32-5200	2000	15000	-
NPM	NPM1.3542	NPM1	NPM1	Nucleophosmin 1	0.5 - 0.7	Rabbit	Cell Signaling	3542	4000	15000	Histone
N-Ras	NRAS	NRAS	NRAS	NRAS Proto-Oncogene, GTPase	> 0.7	Rabbit	Santa Cruz Biotechnology	sc-519	250	15000	MEK
OMA1 (D4JK7)	OMA1	OMA1	OMA1	OMA1 Zinc Metallopeptidase	> 0.7	Rabbit	Cell Signaling	95473	500	18000	Metabolic
DJ-1	PARK7	PARK7	PARK7	Parkinsonism Associated Deglycase	> 0.7	Rabbit	Dr. Tek Mak	?	5000	15000	Autophagy
PARP	PARP1	PARP1	PARP1	Poly(ADP-Ribose) Polymerase 1	0.5 - 0.7	Rabbit	Cell Signaling	9542	500	15000	Apoptosis Occurring
Cleaved PARP (Asp214)	PARP1.cle	PARP1.cle	PARP1.cle	Poly(ADP-Ribose) Polymerase 1	> 0.7	Rabbit	Cell Signaling	9541	100	15000	Apoptosis Occurring
Anti-PCNA antibody	PCNA	PCNA	PCNA	Proliferating Cell Nuclear Antigen	0.5 - 0.7	Rabbit	Abcam	ab92552	200	15000	Cell Cycle
Anti-Pdcd4	PDCD4	PDCD4	PDCD4	Programmed Cell Death 4	0.5 - 0.7	Rabbit	Rockland	600-401-965	800	15000	Apoptosis Regulating
PDGF Receptor β	PDGFRB	PDGFRB	PDGFRB	Platelet Derived Growth Factor Receptor Beta	> 0.7	Rabbit	Cell Signaling	3169	30	15000	STP
Phospho-PDK1 (Ser241)	PDK1	PDK1	PDK1	Pyruvate Dehydrogenase Kinase 1	> 0.7	Rabbit	Cell Signaling	3062	75	15000	Metabolic. mTOR
Phospho-PDK1 (Ser241)	PDK1.pS241	PDK1 Phospho Ser 241	PDK1	Pyruvate Dehydrogenase Kinase 1	> 0.7	Rabbit	Cell Signaling	3061	500	15000	Metabolic, mTOR
PD-L1	PDL1	PDL1	PDL1	CD274 Molecule	0.5 - 0.7	Rabbit	Cell Signaling	13684	250	15000	T-cell
PEA-15	PEA15	PEA15	PEA15	Proliferation And Apoptosis Adaptor Protein 15	> 0.7	Rabbit	Cell Signaling	2780	500	15000	PKC
CD31, Endothelial Cell	PECAM1	PECAM1	PECAM1	Platelet And Endothelial Cell Adhesion Molecule 1	> 0.7	Mouse	Dako	M0823	100	15000	Adhesion
PI3 Kinase p110α	PIK3CA	PIK3CA	PIK3CA	Phosphatidylinositol-4,5-Bisphosphate 3-Kinase Catalytic Subunit Alpha	0.5 - 0.7	Rabbit	Cell Signaling	4255	200	15000	PI3KAKT
PI 3-kinase p110β	PIK3CB	PIK3CB	PIK3CB	Phosphatidylinositol-4,5-Bisphosphate 3-Kinase Catalytic Subunit Beta	0.5 - 0.7	Mouse	Santa Cruz Biotechnology	sc-376412	75	15000	PI3KAKT
Pim-1	PIM1	PIM1	PIM1	Pim-1 Proto-Oncogene, Serine/Threonine Kinase	0.5 - 0.7	Mouse	Santa Cruz Biotechnology	sc-13513	100	15000	Transcription
Pim-2	PIM2	PIM2	PIM2	Pim-2 Proto-Oncogene, Serine/Threonine Kinase	> 0.7	Rabbit	Cell Signaling	4730	100	15000	Transcription
PKM2	PKM2	PKM2	PKM2	Pyruvate Kinase M1/2	0.5 - 0.7	Rabbit	Cell Signaling	4053	300	15000	Metabolic

PLK1	PLK1	PLK1	PLK1	Polo Like Kinase 1	> 0.7	Mouse	Thermo Fisher Scientific	MA5-171512	100	15000	Cell Cycle
Anti-PPAR alpha/PPARA	PPARA	PPARA	PPARA	Peroxisome Proliferator Activated Receptor Alpha	> 0.7	Rabbit	BosterBio	PA1412	400	15000	Metabolic
PPARγ	PPARG	PPARG	PPARG	Peroxisome Proliferator Activated Receptor Gamma	> 0.7	Mouse	Santa Cruz Biotechnology	sc-7273	100	15000	Metabolic
PP2A-B55	PPP2R2A_B_C_D	PPP2R2A/B/C/D	PPP2R2A/B/C/D	Protein Phosphatase 2 Regulatory Subunit Balpha	0.5 - 0.7	Goat	Santa Cruz Biotechnology	sc-18330	500	30000	Phosphatase
AMPKα	PRKAA1_2	PRKAA1/2	PRKAA1/2	Protein Kinase AMP-Activated Catalytic Subunit Alpha 1/2	0.5 - 0.7	Rabbit	Cell Signaling	2532	300	15000	Autophagy
Phospho-AMPKα (Thr172)	PRKAA1_2.pT172	PRKAA1/2 Phospho Thr 172	PRKAA1/2	Protein Kinase AMP-Activated Catalytic Subunit Alpha 1/2	0.5 - 0.7	Rabbit	Cell Signaling	2535	500	15000	-
Anti-PKCα	PRKCA	PRKCA	PRKCA	Protein Kinase C Alpha	> 0.7	Mouse	Merck	05-154	10000	20000	PKC
Anti-phospho-PKC (Ser657)	PRKCA.pS657	PRKCA Phospho Ser 657	PRKCA	Protein Kinase C Alpha	0.5 - 0.7	Rabbit	Merck	06-822	10000	20000	PKC
PKC βII	PRKCB	PRKCB	PRKCB	Protein Kinase C Beta	0.5 - 0.7	Mouse	Santa Cruz Biotechnology	sc-13149	300	15000	PKC
Phospho-PKC (pan)	PRKCB.pS660	PRKCB Phospho Ser 660	PRKCB	Protein Kinase C Beta	> 0.7	Rabbit	Cell Signaling	9371	100	15000	PKC
Anti-phospho-PKCδ (Ser664)	PRKCD.pS664	PRKCD Phospho Ser 664	PRKCD	Protein Kinase C Delta	> 0.7	Rabbit	Merck	07-875	500	15000	PKC
Anti-Proteasome 20S LMP2	PSMB9	PSMB9	PSMB9	Proteasome Subunit Beta 9	> 0.7	Rabbit	Abcam	ab3328	2000	20000	-
PTEN	PTEN	PTEN	PTEN	Phosphatase And Tensin Homolog	> 0.7	Rabbit	Cell Signaling	9552	4000	15000	PI3KAKT
FAK	PTK2	PTK2	PTK2	Protein Tyrosine Kinase 2	> 0.7	Rabbit	Cell Signaling	3285	500	15000	STP
Phospho-FAK (Tyr397)	PTK2.pT397	PTK2 Phospho Tyr 397	PTK2	Protein Tyrosine Kinase 2	> 0.7	Rabbit	Cell Signaling	3283	100	15000	STP
SHP-2	PTPN11	PTPN11	PTPN11	Protein Tyrosine Phosphatase, Non-Receptor Type 11	0.5 - 0.7	Rabbit	Epitomics	1590-1	800	15000	STP
Phospho-SHP-2 (Tyr542)	PTPN11.pT542	PTPN11 Phospho Tyr 542	PTPN11	Protein Tyrosine Phosphatase, Non-Receptor Type 11	0.5 - 0.7	Rabbit	Cell Signaling	3751	100	15000	STP
Rab25	RAB25	RAB25	RAB25	RAB25, Member RAS Oncogene Family	> 0.7	Rabbit	Cell Signaling	4314	300	15000	MEK
Anti-Rad50	RAD50	RAD50	RAD50	RAD50 Double Strand Break Repair Protein	> 0.7	Mouse	Merck	05-525	2000	15000	DNA damage
Rad51	RAD51	RAD51	RAD51	RAD51 Recombinase	> 0.7	Rabbit	Cell Signaling	8875	200	15000	DNA damage
Anti-Raf-1	RAF1	RAF1	RAF1	Raf-1 Proto-Oncogene, Serine/Threonine Kinase	0.5 - 0.7	Rabbit	Merck	04-739	300	15000	MEK
Phospho-c-Raf (Ser338)	RAF1.pS338	RAF1 Phospho Ser 338	RAF1	Raf-1 Proto-Oncogene, Serine/Threonine Kinase	> 0.7	Rabbit	Cell Signaling	9427	300	15000	MEK
Rb1	RB1	RB1	RB1	RB Transcriptional Corepressor 1	> 0.7	Mouse	BD Biosciences	554136	500	15000	Cell Cycle
Phospho-Rb (Ser807/811)	RB1.pS807_811	RB1 Phospho Ser 807/811	RB1	RB Transcriptional Corepressor 1	> 0.7	Rabbit	Cell Signaling	9308	750	15000	Cell Cycle
NF-κB p65	RELA	RELA	RELA	RELA Proto-Oncogene, NF-KB Subunit	0.5 - 0.7	Rabbit	Cell Signaling	3034	800	15000	Transcription
Phospho-NF-κB p65 (Ser536)	RELA.pS536	RELA Phospho Ser 536	RELA	RELA Proto-Oncogene, NF-KB Subunit	0.5 - 0.7	Rabbit	Cell Signaling	3033	300	15000	Transcription
Rheb	RHEB	RHEB	RHEB	Ras Homolog, MTORC1 Binding	0.5 - 0.7	Mouse	R&D Systems	MAB3426	100	15000	MEK
Rictor	RICTOR	RICTOR	RICTOR	RPTOR Independent Companion Of MTOR Complex 2	0.5 - 0.7	Rabbit	Cell Signaling	2114	100	20000	mTOR
Phospho-Rictor (Thr1135)	RICTOR.pT1135	RICTOR Phospho Tyr 1135	RICTOR	RPTOR Independent Companion Of MTOR Complex 2	> 0.7	Rabbit	Cell Signaling	3806	2000	20000	mTOR
RPA32/RPA2	RPA32	RPA32	RPA32	Replication Protein A2	0.5 - 0.7	Rat	Cell Signaling	2208	2000	15000	DNA damage
Phospho RPA32 (S4/S8)	RPA32.pS4_8	RPA32 Phospho Ser 4/8	RPA32	Replication Protein A2	0.5 - 0.7	Rabbit	Bethyl	A300-245A	2000	15000	DNA damage
S6 Ribosomal Protein	RPS6	RPS6	RPS6	Ribosomal Protein S6	> 0.7	Rabbit	Cell Signaling	2217	2000	15000	Ribosome
Phospho-S6 Ribosomal Protein (Ser235/236)	RPS6.pS235_236	RPS6 Phospho Ser 235/236	RPS6	Ribosomal Protein S6	> 0.7	Rabbit	Cell Signaling	2211	2000	15000	Ribosome
Phospho-S6 Ribosomal Protein (Ser240/244)	RPS6.pS240_244	RPS6 Phospho Ser 240/244	RPS6	Ribosomal Protein S6	> 0.7	Rabbit	Cell Signaling	2215	1000	15000	Ribosome
RSK1/RSK2/RSK3	RPS6KA1_2_3	RPS6KA1/2/3	RPS6KA1/2/3	Ribosomal Protein S6 Kinase A1	0.5 - 0.7	Rabbit	Cell Signaling	9347	500	15000	Ribosome
Phospho-p90RSK (Thr573)	RPS6KA1_2_3.pT573	RPS6KA1/2/3 Phospho Thr 573	RPS6KA1/2/3	Ribosomal Protein S6 Kinase A1	0.5 - 0.7	Rabbit	Cell Signaling	9346	50	15000	Ribosome
p70 S6 Kinase	RPS6KB1	RPS6KB1	RPS6KB1	Ribosomal Protein S6 Kinase B1	> 0.7	Rabbit	Cell Signaling	9202	300	15000	Ribosome
Phospho-p70 S6 Kinase (Thr389)	RPS6KB1.pT389	RPS6KB1 Phospho Tyr 389	RPS6KB1	Ribosomal Protein S6 Kinase B1	> 0.7	Rabbit	Cell Signaling	9205	250	15000	Ribosome
Raptor	RPTOR	RPTOR	RPTOR	Regulatory Associated Protein Of MTOR Complex 1	> 0.7	Rabbit	Cell Signaling	2280	1000	15000	mTOR
Phospho-Shc (Tyr317)	SHC1.pY317	SHC1 Phospho Tyr 317	SHC1	SHC Adaptor Protein 1	> 0.7	Rabbit	Cell Signaling	2431	500	15000	STP
Anti-SIRT1	SIRT1	SIRT1	SIRT1	Sirtuin 1	0.5 - 0.7	Rabbit	Abcam	ab32441	2000	15000	Histone
SirT6	SIRT6	SIRT6	SIRT6	Sirtuin 6	> 0.7	Rabbit	Cell Signaling	2590	800	15000	Histone
Anti-Smad1	SMAD1	SMAD1	SMAD1	SMAD Family Member 1	> 0.7	Rabbit	Abcam	ab33902	200	15000	SMAD
Smad2	SMAD2	SMAD2	SMAD2	SMAD Family Member 2	> 0.7	Rabbit	Cell Signaling	5339	5000	15000	SMAD
Phospho-Smad2 (Ser245/250/255)	SMAD2.pS245_250_255	SMAD2 Phospho Ser 245/250/255	SMAD2	SMAD Family Member 2	> 0.7	Rabbit	Cell Signaling	3104	500	15000	SMAD
Phospho-Smad2 (Ser465/467)	SMAD2.pS465_467	SMAD2 Phospho Ser 465/467	SMAD2	SMAD Family Member 2	0.5 - 0.7	Rabbit	Cell Signaling	3108	500	15000	SMAD
Smad3	SMAD3	SMAD3	SMAD3	SMAD Family Member 3	> 0.7	Rabbit	Cell Signaling	9523	500	15000	SMAD
Smad4	SMAD4	SMAD4	SMAD4	SMAD Family Member 4	> 0.7	Mouse	Santa Cruz Biotechnology	sc-7966	200	15000	SMAD
Smad5	SMAD5	SMAD5	SMAD5	SMAD Family Member 5	0.5 - 0.7	Rabbit	Epitomics	1682-1	1000	15000	SMAD
Smad5 Phospho (pS463/465)	SMAD5.pS463_465	SMAD5 Phospho Ser 463/465	SMAD5	SMAD Family Member 5	> 0.7	Rabbit	Epitomics	2224-1	500	15000	SMAD
Anti-SOCS2	SOCS2	SOCS2	SOCS2	Suppressor Of Cytokine Signaling 2	> 0.7	Mouse	Abcam	ab92847	200	15000	STAT
SOD2	SOD2	SOD2	SOD2	Superoxide Dismutase 2	> 0.7	Rabbit	Cell Signaling	13141	10000	15000	Metabolic
Sox2	SOX2	SOX2	SOX2	SRY-Box 2	> 0.7	Rabbit	Cell Signaling	2748	100	15000	Transcription
PU.1	SPI1	SPI1	SPI1	Spi-1 Proto-Oncogene	0.5 - 0.7	Rabbit	Cell Signaling	2258	20000	15000	Transcription
OPN	SPP1	SPP1	SPP1	Secreted Phosphoprotein 1	0.5 - 0.7	Mouse	Santa Cruz Biotechnology	sc-21742	75	15000	Adhesion
SQSTM1	SQSTM1	SQSTM1	SQSTM1	Sequestosome 1	0.5 - 0.7	Mouse	Santa Cruz Biotechnology	sc-28359	150	15000	Autophagy
Anti-Src	SRC	SRC	SRC	SRC Proto-Oncogene, Non-Receptor Tyrosine Kinase	> 0.7	Mouse	Merck	05-184	1000	15000	SRC
Phospho-Src (Tyr527)	SRC.pT527	SRC Phospho Tyr 527	SRC	SRC Proto-Oncogene, Non-Receptor Tyrosine Kinase	> 0.7	Rabbit	Cell Signaling	2105	400	15000	SRC
SRSF1	SRSF1	SRSF1	SRSF1	Serine And Arginine Rich Splicing Factor 1	> 0.7	Mouse	Invitrogen	32-4500	100	15000	Ribosome
Anti-SSBP2	SSBP2	SSBP2	SSBP2	Single Stranded DNA Binding Protein 2	0.5 - 0.7	Rabbit	Abcam	ab177944	1000	15000	Ribosome
Stat1	STAT1	STAT1	STAT1	Signal Transducer And Activator Of Transcription 1	> 0.7	Rabbit	Cell Signaling	9172	250	15000	STAT
Stat3	STAT3	STAT3	STAT3	Signal Transducer And Activator Of Transcription 3	0.5 - 0.7	Rabbit	Cell Signaling	4904	5000	15000	STAT
Phospho-Stat3 (Ser727)	STAT3.pS727	STAT3 Phospho Ser 727	STAT3	Signal Transducer And Activator Of Transcription 3	0.5 - 0.7	Rabbit	Cell Signaling	9134	200	15000	STAT
Phospho-Stat3 (Tyr705)	STAT3.pT705	STAT3 Phospho Ty 705	STAT3	Signal Transducer And Activator Of Transcription 3	> 0.7	Rabbit	Cell Signaling	9131	200	15000	STAT
Anti-STAT5a	STAT5A	STAT5A	STAT5A	Signal Transducer And Activator Of Transcription 5A	0.5 - 0.7	Rabbit	Abcam	ab32043	1000	15000	STAT
LKB1	STK11	STK11	STK11	Serine/Threonine Kinase 11	0.5 - 0.7	Rabbit	Cell Signaling	3050	500	15000	Autophagy, HIPPO
MST1	STK4	STK4	STK4	Serine/Threonine Kinase 4	> 0.7	Rabbit	Cell Signaling	3682	500	20000	HIPPO
Stathmin	STMN1	STMN1	STMN1	Stathmin 1	> 0.7	Rabbit	Epitomics	1972-1	10000	15000	Cytoskeletal
Syk	SYK	SYK	SYK	Spleen Associated Tyrosine Kinase	> 0.7	Mouse	Santa Cruz Biotechnology	sc-1240	500	15000	STP
Tapasin	TAPBP	TAPBP	TAPBP	TAP Binding Protein	0.5 - 0.7	Rabbit	Enzo Life Sciences	ADI-CSA-630D	3000	20000	T-cell
TAZ	TAZ	TAZ	TAZ	Tafazzin	> 0.7	Rabbit	Cell Signaling	4883	300	15000	HIPPO
TfR (Transferrin R)	TFRC	TFRC	TFRC	Transferrin Receptor	> 0.7	Rabbit	Novus Biologicals	22500002	10000	15000	Metabolic
Anti-Transglutaminase 2	TGM2	TGM2	TGM2	Transglutaminase 2	> 0.7	Mouse	Abcam	ab2386	2000	15000	Metabolic
Anti-TIGAR	TIGAR	TIGAR	TIGAR	TP53 Induced Glycolysis Regulatory Phosphatase	> 0.7	Rabbit	Abcam	ab137573	500	15000	Metabolic
TNK1	TNK1	TNK1	TNK1	Tyrosine Kinase Non Receptor 1	> 0.7	Rabbit	Abgent	ap7722a	200	15000	MEK
p53	TP53	TP53	TP53	Tumor Protein P53	0.5 - 0.7	Rabbit	Cell Signaling	9282	1000	15000	TP53
Phospho-p53 (Ser15)	TP53.pS15	TP53 Phospho Ser 15	TP53	Tumor Protein P53	> 0.7	Rabbit	Cell Signaling	9284	250	15000	TP53
Hamartin/TSC1	TSC1	TSC1	TSC1	TSC Complex Subunit 1	0.5 - 0.7	Rabbit	Cell Signaling	4906	400	15000	mTOR
TSC2/Tuberin	TSC2	TSC2	TSC2	TSC Complex Subunit 2	> 0.7	Rabbit	Epitomics	1613-1	500	15000	mTOR
Phospho-Tuberin/TSC2 (Thr1462)	TSC2.pT1462	TSC2 Phospho Thr 1462	TSC2	TSC Complex Subunit 2	> 0.7	Rabbit	Cell Signaling	3617	400	20000	mTOR
Anti-Detyrosinated alpha Tubulin	TUBA1A	TUBA1A	TUBA1A	Tubulin Alpha 1a	> 0.7	Rabbit	Abcam	ab48389	5000	15000	Cytoskeletal
Anti-VCP	VCP	VCP	VCP	Valosin Containing Protein	> 0.7	Mouse	Abcam	Ab11433	200000	250000	UPR
Von Hippel Lindau	VHL	VHL	VHL	Von Hippel-Lindau Tumor Suppressor	0.5 - 0.7	Rabbit	Novus Biologicals	NB100-485	1000	15000	Hypoxia
Vimentin	VIM	VIM	VIM	Vimentin	0.5 - 0.7	Mouse	Dako	M0725	400	15000	Cytoskeletal
Wee1	WEE1	WEE1	WEE1	WEE1 G2 Checkpoint Kinase	0.5 - 0.7	Rabbit	Cell Signaling	4936	500	15000	Cell Cycle
WTAP	WTAP	WTAP	WTAP	WT1 Associated Protein	> 0.7	Rabbit	UTSA (Sanjay Bansal)	?	10000	15000	Histone
XIAP	XIAP	XIAP	XIAP	X-Linked Inhibitor Of Apoptosis	0.5 - 0.7	Rabbit	Cell Signaling	2042	200	15000	Apoptosis Regulating
XPA	XPA	XPA	XPA	XPA, DNA Damage Recognition And Repair Factor	0.5 - 0.7	Mouse	Santa Cruz Biotechnology	sc-56813	75	15000	DNA damage
CRM1	XPO1	XPO1	XPO1	Exportin 1	> 0.7	Rabbit	Santa Cruz Biotechnology	sc-5595	2000	15000	Cytoskeletal
Ku80	XRCC1	XRCC1	XRCC1	X-Ray Repair Cross Complementing 1	0.5 - 0.7	Rabbit	Cell Signaling	2753	150	15000	DNA damage
YAP	YAP1	YAP1	YAP1	Yes Associated Protein 1	0.5 - 0.7	Rabbit	Cell Signaling	4912	100	15000	HIPPO
Phospho-YAP (Ser127)	YAP1.pS127	YAP1 Phospho Ser 127	YAP1	Yes Associated Protein 1	0.5 - 0.7	Rabbit	Cell Signaling	4911	500	15000	HIPPO
Phospho-YB1 (Ser102)	YBX1.pS102	YBX1 Phospho Ser 102	YBX1	Y-Box Binding Protein 1	> 0.7	Rabbit	Cell Signaling	2900	250	15000	Transcription
Anti-Yes1	YES1	YES1	YES1	YES Proto-Oncogene 1, Src Family Tyrosine Kinase	> 0.7	Rabbit	Abcam	ab133314	2000	20000	HIPPO, SRC
14-3-3 ε	YWHAE	YWHAE	YWHAE	Tyrosine 3-Monooxygenase/Tryptophan 5-Monooxygenase Activation Protein Epsilon	0.5 - 0.7	Mouse	Santa Cruz Biotechnology	sc-23957	200	15000	TP53

Table S2

Figure 3D

All patients (n=410)	OS from study entry			
	N	HR	95% CI	p
Cluster				
3	153	1		
1	91	2.10	1.34 - 3.29	**0.001**
2	131	1.32	0.84 - 2.06	0.227
4	35	0.83	0.37 - 1.87	0.657

Cluster 3 is selected as baseline group (largest group with good outcome)

ADE (n=200)	OS from study entry			
	N	HR	95% CI	p
Cluster				
3	82	1		
1	40	1.42	0.74 - 2.75	0.291
2	64	1.84	1.05 - 3.22	**0.033**
4	14	no convergence		

No convergence because of no events in Cluster 4 for this group (100% survival)

ADEB (n=210)	OS from study entry			
	N	HR	95% CI	p
Cluster				
3	71	1		
1	51	2.98	1.57 - 5.65	**<0.001**
2	67	0.83	0.39 - 1.78	0.635
4	21	1.88	0.77 - 4.61	0.168

Cluster 2 (n=131)	OS from study entry			
	N	HR	95% CI	p
Treatment				
ADE	64	1		
ADEB	67	0.33	0.17 - 0.66	**0.002**

Cluster 4 (n=35)	OS from study entry			
	N	HR	95% CI	p
Treatment				
ADEB	21	1		
ADE	14	no convergence		

No convergence because of no events in Cluster 4 for this group (100% survival)

Figure 5A

All patients	OS from study entry				RR from end of Induction II			
	N	HR	95% CI	p	N	HR	95% CI	p
Signature								
S1	44	1			41	1		
S2	46	2.32	1.05 - 5.12	**0.038**	36	1.02	0.48 - 2.18	0.960
S3	27	0.34	0.07 - 1.55	0.162	21	0.85	0.34 - 2.15	0.729
S4	42	1.52	0.65 - 3.55	0.336	35	1.07	0.50 - 2.30	0.861
S5	71	1.86	0.87 - 3.97	0.110	62	1.82	0.98 - 3.37	0.056
S6	41	1.38	0.57 - 3.33	0.477	34	0.75	0.30 - 1.85	0.530
S7	31	1.87	0.78 - 4.52	0.163	29	2.41	1.21 - 4.79	**0.012**
S8	72	1.61	0.74 - 3.51	0.227	64	1.57	0.82 - 2.99	0.176
S9	36	1.51	0.62 - 3.63	0.364	26	1.09	0.47 - 2.53	0.837

Figure 5B

All patients	OS from study entry				RR from end of Induction II			
	N	HR	95% CI	p	N	HR	95% CI	p
Proteomic risk class								
Intermediate	235	1			200	1		
Favorable	27	0.24	0.06 - 0.96	**0.044**	21	0.74	0.33 - 1.65	0.462
Unfavorable	148	1.41	0.98 - 2.01	0.061	127	1.47	1.04 - 2.06	**0.028**

Figure 5C

	Signatures=8				Signatures=3			
	OS from study entry				RR from end of Induction II			
	N	HR	95% CI	p	N	HR	95% CI	p
Treatment								
ADE	33	1			11	1		
ADEB	39	0.43	0.18 - 1.03	0.058	10	0.18	0.02 - 1.37	0.098

Figure 5D

Since there are no events (100% survival, 0% RR) for the ADEB group, OS and RR analyses do not converge

Figure S3A

All patients (n=410)	EFS from study entry			
	N	HR	95% CI	p
Cluster				
3	153	1		
1	91	1.90	1.34 - 2.71	**<0.001**
2	131	1.26	0.90 - 1.78	0.179
4	35	0.79	0.43 - 1.46	0.450

ADE (n=200)	EFS from study entry			
	N	HR	95% CI	p
Cluster				
3	82	1		
1	40	1.34	0.78 - 2.31	0.285
2	64	1.80	1.15 - 2.83	**0.011**
4	14	0.26	0.06 - 1.08	0.064

ADEB (n=210)	EFS from study entry			
	N	HR	95% CI	p
Cluster				
3	71	1		
1	51	2.50	1.55 - 4.04	**<0.001**
2	67	0.85	0.50 - 1.44	0.551
4	21	1.34	0.66 - 2.73	0.423

Figure S3B

CR patients (n=348)	RR from end of Induction II			
	N	HR	95% CI	p
Cluster				
3	131	1		
1	77	1.89	1.23 - 2.89	**0.004**
2	109	1.16	0.78 - 1.73	0.468
4	31	0.49	0.21 - 1.14	0.099

ADE (n=170)	RR from end of Induction II			
	N	HR	95% CI	p
Cluster				
3	68	1		
1	36	1.64	0.85 - 3.17	0.141
2	52	1.92	1.10 - 3.37	**0.022**
4	14	0.39	0.10 - 1.58	0.189

ADEB (n=178)	RR from end of Induction II			
	N	HR	95% CI	p
Cluster				
3	63	1		
1	41	2.11	1.21 - 3.68	**0.009**
2	47	0.68	0.38 - 1.22	0.196
4	17	0.55	0.18 - 1.64	0.282

Figure S7 - all (OS and RR are same as Figure 5A)

All patients	OS from study entry				EFS from study entry			RR from end of Induction II			
	N	HR	95% CI	p	HR	95% CI	p	N	HR	95% CI	p
Signature											
S1	44	1			1			41	1		
S2	46	2.32	1.05 - 5.12	**0.038**	1.58	0.85 - 2.93	0.145	36	1.02	0.48 - 2.18	0.960
S3	27	0.34	0.07 - 1.55	0.162	0.83	0.37 - 1.86	0.650	21	0.85	0.34 - 2.15	0.729
S4	42	1.52	0.65 - 3.55	0.336	1.19	0.62 - 2.28	0.611	35	1.07	0.50 - 2.30	0.861
S5	71	1.86	0.87 - 3.97	0.110	1.56	0.88 - 2.75	0.126	62	1.82	0.98 - 3.37	0.056
S6	41	1.38	0.57 - 3.33	0.477	1.30	0.67 - 2.52	0.440	34	0.75	0.30 - 1.85	0.530
S7	31	1.87	0.78 - 4.52	0.163	2.10	1.11 - 3.98	0.023	29	2.41	1.21 - 4.79	**0.012**
S8	72	1.61	0.74 - 3.51	0.227	1.46	0.82 - 2.60	0.200	64	1.57	0.82 - 2.99	0.176
S9	36	1.51	0.62 - 3.63	0.364	1.38	0.71 - 2.71	0.344	26	1.09	0.47 - 2.53	0.837

Figure S7 - ADE only

All patients	OS from study entry				EFS from study entry			RR from end of Induction II			
	N	HR	95% CI	p	HR	95% CI	p	N	HR	95% CI	p
Signature											
S1	23	1			1			22	1		
S2	23	1.62	0.53 - 4.95	0.399	1.27	0.53 - 3.07	0.594	18	1.26	0.40 - 3.91	0.694
S3	15	0.55	0.11 - 2.82	0.472	0.92	0.33 - 2.58	0.868	11	1.67	0.55 - 5.09	0.363
S4	18	1.18	0.34 - 4.07	0.797	1.08	0.42 - 2.81	0.870	17	1.29	0.43 - 3.89	0.654
S5	32	1.37	0.47 - 4.01	0.564	1.43	0.64 - 3.19	0.378	25	2.29	0.92 - 5.68	0.074
S6	21	1.98	0.65 - 6.06	0.231	1.14	0.45 - 2.87	0.785	17	0.39	0.08 - 1.98	0.255
S7	15	1.97	0.60 - 6.44	0.265	2.15	0.87 - 5.30	0.096	14	2.82	0.96 - 8.29	0.060
S8	33	2.21	0.80 - 6.14	0.128	1.57	0.71 - 3.51	0.267	30	1.83	0.70 - 4.77	0.219
S9	20	1.54	0.49 - 4.85	0.462	1.38	0.56 - 3.39	0.488	16	1.40	0.46 - 4.27	0.551

Figure S7 - ADEB only

All patients	OS from study entry				EFS from study entry			RR from end of Induction II			
	N	HR	95% CI	p	HR	95% CI	p	N	HR	95% CI	p
Signature											
S1	21	1			1			19	1		
S2	23	3.24	1.03 - 10.2	**0.045**	1.93	0.81 - 4.59	0.140	18	0.83	0.30 - 2.29	0.719
S3	12	no convergence			0.67	0.18 - 2.53	0.557	10	0.24	0.03 - 1.84	0.169
S4	24	1.91	0.58 - 6.35	0.290	1.30	0.52 - 3.23	0.572	18	0.89	0.31 - 2.57	0.832
S5	39	2.43	0.81 - 7.26	0.113	1.68	0.75 - 3.77	0.212	37	1.48	0.65 - 3.39	0.351
S6	20	0.79	0.18 - 3.54	0.760	1.53	0.59 - 3.97	0.381	17	1.13	0.37 - 3.46	0.834
S7	16	1.78	0.48 - 6.65	0.388	2.09	0.84 - 5.19	0.114	15	2.07	0.85 - 5.00	0.108
S8	39	1.14	0.34 - 3.78	0.833	1.38	0.60 - 3.17	0.451	34	1.35	0.56 - 3.22	0.506
S9	16	1.38	0.35 - 5.54	0.646	1.37	0.50 - 3.78	0.546	10	0.79	0.21 - 3.01	0.729

Figure S8 - low risk patients only

Low risk	OS from study entry				EFS from study entry			RR from end of Induction II			
	N	HR	95% CI	p	HR	95% CI	p	N	HR	95% CI	p
Signature											
S1	30	1			1			28	1		
S2	29	1.76	0.58 - 5.38	0.322	1.35	0.61 - 2.97	0.457	27	1.75	0.74 - 4.15	0.203
S3	21	0.57	0.11 - 2.92	0.498	0.74	0.27 - 1.99	0.546	19	0.93	0.32 - 2.75	0.898
S4	31	1.41	0.45 - 4.44	0.558	1.18	0.53 - 2.63	0.693	28	1.20	0.47 - 3.04	0.709
S5	39	2.66	0.98 - 7.27	0.056	1.86	0.91 - 3.82	0.091	39	2.16	0.98 - 4.75	0.056
S6	22	0.85	0.20 - 3.56	0.822	0.93	0.36 - 2.39	0.876	20	0.75	0.22 - 2.59	0.649
S7	27	2.40	0.80 - 7.15	0.117	2.58	1.23 - 5.42	0.013	26	3.20	1.42 - 7.19	**0.005**
S8	57	1.20	0.42 - 3.46	0.735	1.30	0.64 - 2.65	0.465	55	1.84	0.84 - 4.01	0.128
S9	25	0.69	0.17 - 2.91	0.617	0.84	0.34 - 2.09	0.710	23	0.90	0.32 - 2.51	0.837

Figure S8 - high risk patients only

High risk	OS from study entry				EFS from study entry			RR from end of Induction II			
	N	HR	95% CI	p	HR	95% CI	p	N	HR	95% CI	p
Signature											
S1	13	1			1			13	1		
S2	16	2.53	0.79 - 8.08	0.117	1.72	0.63 - 4.75	0.292	9	no convergence		
S3	6	no convergence			1.20	0.30 - 4.82	0.794	2	1.11	0.18 - 6.89	0.907
S4	10	1.35	0.36 - 5.03	0.655	0.99	0.30 - 3.25	0.987	7	0.95	0.25 - 3.67	0.940
S5	32	0.87	0.27 - 2.77	0.811	1.05	0.41 - 2.66	0.923	23	1.27	0.49 - 3.34	0.626
S6	18	1.12	0.33 - 3.83	0.857	1.33	0.48 - 3.65	0.586	14	0.64	0.17 - 2.46	0.520
S7	4	1.30	0.24 - 7.09	0.766	1.05	0.21 - 5.22	0.951	3	0.68	0.09 - 5.19	0.714
S8	10	2.17	0.61 - 7.70	0.231	1.44	0.46 - 4.46	0.530	9	1.29	0.31 - 5.44	0.731
S9	10	3.18	0.96 - 10.6	0.060	4.63	1.64 - 13.1	**0.004**	3	8.74	3.09 - 24.7	**<0.001**

No convergence because of no events in S2 for this group (0% RR)

No convergence because of no events in S3 for this group (100% survival)

Table S3

	Variable	**Total (n=500)**	**PC-1**	**PC-2**	**PC-3**	**PC-4**	***P***	***P****
Treatment arm (n=410)	ADE	40%	38%	42%	39%	40%	0.061	0.242
	ADEB	51%	56%	51%	46%	60%		
	ADES	9%	5%	7%	14%	0%		
Gender (n=498)	Female	49%	46%	52%	48%	56%	0.618	0.719
Age (years)	0-1	12%	16%	14%	8%	8%	0.059	0.096
	2-10	33%	35%	36%	30%	23%		
	11+	55%	48%	50%	61%	69%		
Ethnicity (n=497)	Hispanic	20%	24%	18%	19%	18%	0.660	1.000
Race (n=488)	Black	12%	16%	13%	11%	8%	0.489	0.509
CNS status (at Dx) (n=497)	Positive	39%	38%	40%	43%	26%	0.242	0.136
WBC (at study entry)	>100000	24%	24%	23%	29%	8%	0.034	0.058
FAB classification (n=339)	M0	2%	3%	1%	2%	0%	0.022	0.266
	M1	15%	13%	11%	19%	21%		
	M2	13%	7%	13%	16%	21%		
	M4	16%	16%	14%	19%	8%		
	M5	18%	22%	20%	14%	21%		
	M6	1%	0%	1%	1%	0%		
	M7	3%	2%	7%	1%	0%		
	NA	32%	37%	32%	29%	31%		
AAML1031 risk group (n=485)	High risk	27%	21%	28%	32%	18%	0.088	0.287
Cytogenetics (n=492)	t(8;21)	16%	28%	19%	3%	33%	0.000	0.242
	inv16	13%	8%	16%	17%	23%		
	normal karyotype	28%	32%	23%	7%	15%		
	t(9;11)(p22;q23)/11q23	18%	8%	10%	10%	5%		
	-5, -7 or +8	9%	12%	17%	11%	10%		
	other	15%	12%	15%	51%	13%		
FLT3-ITD (n=489)	ITD	21%	11%	18%	35%	5%	0.000	0.082
NPM1 (n=483)	Mutant	10%	4%	6%	19%	5%	0.000	1.000
CEBPA (n=483)	Mutant	9%	0%	2%	22%	3%	0.000	1.000
c-Kit (exon 8) (n=399)	Mutant	4%	3%	5%	4%	3%	0.963	1.000
c-Kit (exon 17) (n=399)	Mutant	8%	13%	10%	2%	15%	0.006	0.625
c-Kit (combined)) (n=399)	Mutant	12%	16%	14%	6%	18%	0.053	0.762
KRAS (n=390)	Mutant	7%	15%	8%	3%	6%	0.008	1.000
NRAS (n=390)	Mutant	25%	29%	23%	27%	16%	0.448	0.548
NRAS.KRAS (n=390)	Mutant	31%	41%	28%	29%	19%	0.089	0.421
PTPN11 (n=390)	Mutant	7%	12%	3%	9%	3%	0.062	1.000
MYH11 (n=390)	Mutant	4%	5%	6%	3%	3%	0.582	0.839
GATA2 (n=390)	Mutant	3%	1%	2%	5%	3%	0.407	1.000
IDH1/2 (combined) (n=390)	Mutant	4%	1%	3%	4%	10%	0.169	0.259

* P-value PC-2 vs PC-4

Table S4

Constellation	Protein Cluster
CON-1	adhesion C4
	apopreg C4
	cellcycle C3
	creb C2
	differentiation C3
	histone C4
	hypoxia C1
	mek C4
	metabolic C4
	mtor C2
	pi3kakt C3
	smad C4
	stat C2
	stp C2
	tcell C4
	tp53 C2
	transcription C4
CON-2	adhesion C2
	apopreg C3
	dna damage C2
	histone C1
	metabolic C1
	pi3kakt C1
	smad C1
	transcription C2
CON-3	cellcycle C2
	hypoxia C2
	stat C1
	stp C1
	tp53 C1
CON-4	creb C1
	cytoskeletal C2
	differentiation C4
	hippo C3
	mek C1
	metabolic C2
	mtor C1
	tcell C1
	upr C1
CON-5	adhesion C3
	dna damage C4
	hypoxia C3
	smad C3
	stp C3
	transcription C3
CON-6	apopreg C1
	bh3 C3
	creb C3
	histone C5
	mapk C4
	mtor C3
	pi3kakt C2
	stat C3
	tcell C3
	tp53 C3
	autophagy C1
	cytoskeletal C1
	hippo C1

CON-7	mapk C2 mek C2 pkc C1 ribosome C4 src C2
CON-8	apopoccur C1 bh3 C2 dna damage C3 heatshock C2 upr C2 wnt C2
CON-9	apopoccur C2 apopoccur C3 autophagy C3 bh3 C1 differentiation C2 dna damage C1 heatshock C3 mapk C1 phosphatase C1 phosphatase C2 pkc C3 ribosome C3 src C1
CON-10	cellcycle C1 heatshock C1 mapk C3 pi3kakt C4 ribosome C2 smad C2 transcription C1 wnt C3
CON-11	adhesion C1 apopreg C2 autophagy C2 autophagy C5 cytoskeletal C3 histone C3 mek C3 phosphatase C3 pkc C2 pkc C4 ribosome C1 src C4 stat C4
CON-12	apopoccur C4 autophagy C4 differentiation C1 heatshock C4 hippo C2 histone C2 metabolic C3 mtor C4 src C3 tcell C2 upr C3 upr C4 wnt C1

Table S5

A

		AAML1031 risk groups				
		Total (n=410)	Total (100%)	Low (n=281)	High (n=122)	Unknown (n=7)
Prot-SIG risk	Favorable (S3)	27	7%	78%	22%	0%
	Intermediate (S1, 4, 6, 8, 9)	235	57%	70%	27%	4%
	Unfavorable (S2, 5, 7)	148	36%	65%	35%	2%

B

		Conventional cytogenetics				
		Total (n=410)	Total (100%)	Fav (n=217)	Int (n=170)	Unfav (n=105)
Prot-SIG risk	Favorable (S3)	27	7%	70%	15%	15%
	Intermediate (S1, 4, 6, 8, 9)	235	57%	53%	33%	14%
	Unfavorable (S2, 5, 7)	148	36%	32%	47%	21%

Table S6

A

Proteins significantly changed between 0hr vs 10hr

Antibody	Estimate mean of the differences	P value (uncorrected)	Bonferroni corrected P-value
MDM4	0.4271	0.0000	0.0000
TP53	-0.5267	0.0000	0.0000
BBC3	-0.2576	0.0000	0.0000
TP53.pS15	-0.4373	0.0000	0.0000
WEE1	0.2982	0.0000	0.0000
ATM.pS1981	-0.2528	0.0000	0.0000
CHEK1	0.3206	0.0000	0.0000
SRC.pT527	-0.3274	0.0000	0.0000
CCND3	-0.2015	0.0000	0.0000
CHEK2	0.1273	0.0000	0.0000
RB1.pS807_811	0.4107	0.0000	0.0000
MCL1	-0.1703	0.0000	0.0000
CDKN1A	-0.3349	0.0000	0.0000
CCNB1	0.2988	0.0000	0.0000
KDM1A	0.1307	0.0000	0.0000
MYC	0.1511	0.0000	0.0000
TFRC	0.1969	0.0000	0.0000
CHEK2.pT68	-0.1335	0.0000	0.0000
EEF2K	0.1392	0.0000	0.0000
RB1	0.1056	0.0000	0.0000
NOTCH1	-0.0824	0.0000	0.0000
CDK1.pT15	0.1674	0.0000	0.0000
NOTCH1.cle	-0.2016	0.0000	0.0000
RAD51	0.2115	0.0000	0.0000
ASH2L	0.1060	0.0000	0.0000
PRKCB.pS660	-0.1728	0.0000	0.0000
RPS6KB1.pT389	-0.1042	0.0000	0.0000
ATM	0.1362	0.0000	0.0000
GATA3	0.1195	0.0000	0.0000
PKM2	-0.1364	0.0000	0.0000
GATA1	0.1492	0.0000	0.0000
AKT1_2_3.pT308	-0.1657	0.0000	0.0000
STAT3.pS727	-0.0812	0.0000	0.0000
MSH2	0.0958	0.0000	0.0000
STAT3	-0.0965	0.0000	0.0000
NCL	0.1065	0.0000	0.0000
VIM	0.1325	0.0000	0.0000
SIRT1	0.0970	0.0000	0.0000
HSPB1.pS82	-0.1518	0.0000	0.0000
LEF1	0.2221	0.0000	0.0001
DDX17	0.0712	0.0000	0.0001
TIGAR	-0.0684	0.0000	0.0001
BCL2	0.1218	0.0000	0.0001
ABL1	-0.0977	0.0000	0.0001
ETS1	0.0781	0.0000	0.0002
JUNB	-0.1043	0.0000	0.0002
MTOR	0.0814	0.0000	0.0003
PTK2.pT397	-0.1388	0.0000	0.0003
STAT3.pT705	-0.0805	0.0000	0.0003
ASNS	0.1372	0.0000	0.0003
HSF1	0.0775	0.0000	0.0003
PRKCB	0.0764	0.0000	0.0003
PIK3CA	0.1049	0.0000	0.0006
SMAD3	0.0604	0.0000	0.0006
KDR	0.1065	0.0000	0.0008
EIF2S1	0.1155	0.0000	0.0008
MAPK14.pT180_182	-0.2249	0.0000	0.0010
SYK	-0.1150	0.0000	0.0011
SPP1	-0.0796	0.0000	0.0012
HNRNPK	0.0911	0.0000	0.0016
ERCC1	0.0496	0.0000	0.0017
KIT	0.1498	0.0000	0.0018
LCK	0.1094	0.0000	0.0022
FLI1	0.0585	0.0000	0.0028
BRD4	0.0528	0.0000	0.0028
WTAP	0.0839	0.0000	0.0034
ACTB	-0.0658	0.0000	0.0034
RAF1	-0.0500	0.0000	0.0034
AIFM1	0.0659	0.0000	0.0060
CASP7.cle	0.1101	0.0000	0.0073
SMAD1	-0.0740	0.0000	0.0131
SOD2	-0.0848	0.0000	0.0133
MDM2	-0.0845	0.0000	0.0146
RICTOR.pT1135	-0.1037	0.0001	0.0161
OMA1	0.0580	0.0001	0.0186
PIK3CB	-0.0708	0.0001	0.0208

PPP2R2A_B_C_D	0.0740	0.0001	0.0223
FOXO3A.pS318_321	0.0808	0.0001	0.0230
PTPN11.pT542	-0.0609	0.0001	0.0261
BID	-0.0918	0.0001	0.0295
ARAF	-0.0594	0.0001	0.0326
MEF2C	0.0572	0.0001	0.0337
CDKN1B.pT157	0.0745	0.0001	0.0384
SSBP2	0.0829	0.0001	0.0441
RICTOR	0.0559	0.0002	0.0446
RPA32.pS4_8	0.0658	0.0002	0.0459
CREB1	0.0615	0.0002	0.0488

B

Proteins significantly changed between 0hr vs 24hr			
Antibody	**Estimate mean of the differences**	**P value (uncorrected)**	**Bonferroni corrected P-value**
MDM4	0.38567	0.00000	0.00000
SRC.pT527	-0.7086	0.0000	0.0000
WEE1	0.5199	0.0000	0.0000
TFRC	0.5190	0.0000	0.0000
KDM1A	0.2871	0.0000	0.0000
CHEK2	0.2513	0.0000	0.0000
TP53	-0.4115	0.0000	0.0000
CHEK1	0.5741	0.0000	0.0000
BBC3	-0.2610	0.0000	0.0000
RB1	0.2453	0.0000	0.0000
MSH6	0.2244	0.0000	0.0000
PTK2.pT397	-0.4671	0.0000	0.0000
PTPN11.pT542	-0.2435	0.0000	0.0000
RB1.pS807_811	0.5873	0.0000	0.0000
SSBP2	0.2792	0.0000	0.0000
AKT1_2_3.pT308	-0.3463	0.0000	0.0000
EEF2K	0.2329	0.0000	0.0000
ASH2L	0.2196	0.0000	0.0000
TP53.pS15	-0.3510	0.0000	0.0000
MSH2	0.2028	0.0000	0.0000
RPS6KB1.pT389	-0.1942	0.0000	0.0000
BCL2	0.2775	0.0000	0.0000
WTAP	0.2539	0.0000	0.0000
CDKN1B.pS10	-0.1385	0.0000	0.0000
TIGAR	-0.1729	0.0000	0.0000
NCL	0.2218	0.0000	0.0000
KIT	0.3770	0.0000	0.0000
RAD50	0.1773	0.0000	0.0000
PRKCB.pS660	-0.2871	0.0000	0.0000
OMA1	0.1764	0.0000	0.0000
AIFM1	0.1778	0.0000	0.0000
PRKCA.pS657	-0.3323	0.0000	0.0000
XRCC1	0.1909	0.0000	0.0000
PKM2	-0.2319	0.0000	0.0000
PRKCD.pS664	-0.1305	0.0000	0.0000
DDX17	0.1423	0.0000	0.0000
PRKCA	-0.2167	0.0000	0.0000
SRC	-0.3898	0.0000	0.0000
ATM.pS1981	-0.1779	0.0000	0.0000
ERG	0.2053	0.0000	0.0000
H3K36Me3	0.2114	0.0000	0.0000
CCNB1	0.3892	0.0000	0.0000
STAT3.pS727	-0.1372	0.0000	0.0000
NPM1	0.1801	0.0000	0.0000
MAP2K1	-0.2084	0.0000	0.0000
ACTB	-0.1437	0.0000	0.0000
ERCC1	0.1090	0.0000	0.0000
MAPK14.pT180_182	-0.4390	0.0000	0.0000
ARID1A	0.1849	0.0000	0.0000
PIK3CA	0.2095	0.0000	0.0000
HNRNPK	0.1868	0.0000	0.0000
PECAM1	-0.1940	0.0000	0.0000
ELK1.pS383	0.1662	0.0000	0.0000
GATA1	0.2197	0.0000	0.0000
RICTOR.pT1135	-0.2526	0.0000	0.0000
CDK1.pT15	0.2257	0.0000	0.0000
NOTCH1.cle	-0.2269	0.0000	0.0000
PLK1	-0.2230	0.0000	0.0000
RAD51	0.2939	0.0000	0.0000
HDAC2	0.1081	0.0000	0.0000
JMJD6	-0.1076	0.0000	0.0000
CDKN1A	-0.3025	0.0000	0.0000
SMAD5.pS463_465	-0.2058	0.0000	0.0000
STAT3.pT705	-0.1351	0.0000	0.0000
ABL1	-0.1746	0.0000	0.0000
PDL1	-0.1800	0.0000	0.0000
IGF1R.pY1135_1136	-0.1960	0.0000	0.0000
FLI1	0.1068	0.0000	0.0000
ERN1	-0.3143	0.0000	0.0000
ERCC5	0.1185	0.0000	0.0000
RELA.pS536	-0.2273	0.0000	0.0000
STMN1	0.1730	0.0000	0.0000
RPA32	0.1218	0.0000	0.0000
EIF2S1	0.1678	0.0000	0.0000
CCND3	-0.1556	0.0000	0.0000
MAPK8_10.pT183_185	-0.1734	0.0000	0.0000

NOTCH1	-0.0834	0.0000	0.0000
HIST3H3	0.1690	0.0000	0.0000
ITGA2	-0.1584	0.0000	0.0000
HDAC3	0.0931	0.0000	0.0000
STK4	-0.0926	0.0000	0.0000
CDKN1B	-0.1064	0.0000	0.0000
MCL1	-0.1372	0.0000	0.0000
SIRT1	0.1270	0.0000	0.0000
ITGAL	-0.1437	0.0000	0.0000
VIM	0.1823	0.0000	0.0000
TAPBP	0.1023	0.0000	0.0000
MYC	0.1315	0.0000	0.0000
TSC2.pT1462	-0.1376	0.0000	0.0000
SIRT6	0.1061	0.0000	0.0000
SMAD4	0.0860	0.0000	0.0000
PIK3CB	-0.1399	0.0000	0.0000
ATM	0.1293	0.0000	0.0000
CREB1	0.1097	0.0000	0.0000
STAT3	-0.1205	0.0000	0.0000
GAB2.pT452	-0.1643	0.0000	0.0000
IGF1R	-0.2939	0.0000	0.0000
MTOR	0.1022	0.0000	0.0000
ASNS	0.1742	0.0000	0.0000
EIF2S1.pS51	0.1280	0.0000	0.0000
RAF1.pS338	-0.1185	0.0000	0.0000
MAP2K1_2	-0.1060	0.0000	0.0000
ELAVL1	0.1449	0.0000	0.0000
AKT1	-0.1575	0.0000	0.0000
DUSP6	-0.1510	0.0000	0.0000
AKT1S1.pT246	-0.1436	0.0000	0.0000
EIF2AK2	0.1101	0.0000	0.0000
JAG1	-0.1140	0.0000	0.0000
SHC1.pT317	-0.1350	0.0000	0.0000
HDAC6	0.1219	0.0000	0.0000
LCK	-0.1350	0.0000	0.0000
EP300	0.1095	0.0000	0.0000
MDM2	-0.1154	0.0000	0.0000
SYK	-0.1387	0.0000	0.0000
BAX	-0.1141	0.0000	0.0000
AKT1S1	-0.1474	0.0000	0.0001
STK11	-0.1217	0.0000	0.0001
IGFBP2	-0.1319	0.0000	0.0001
RPS6	0.1481	0.0000	0.0002
HSF1.pS326	-0.1902	0.0000	0.0003
MMP2	-0.0967	0.0000	0.0003
H3K4Me3	0.1392	0.0000	0.0003
BRAF	-0.0759	0.0000	0.0003
HIF1A	-0.1310	0.0000	0.0004
CDKN1B.pT198	0.1137	0.0000	0.0004
RAF1	-0.0646	0.0000	0.0004
H3K27Me3	0.1116	0.0000	0.0005
AKT3	-0.2692	0.0000	0.0005
TUBA1A.de	-0.1346	0.0000	0.0007
CREB1.pS133	-0.1256	0.0000	0.0008
RPS6KB1	0.0909	0.0000	0.0009
NOL3	-0.0901	0.0000	0.0009
FOXO3A.pS318_321	0.0940	0.0000	0.0010
SPP1	-0.0918	0.0000	0.0010
HSF1	0.0885	0.0000	0.0011
EGLN1	-0.0726	0.0000	0.0012
EIF4G1	0.0832	0.0000	0.0013
PDK1.pS241	-0.0846	0.0000	0.0014
HSPA1A_L	-0.1870	0.0000	0.0014
CDKN1B.pT157	0.0979	0.0000	0.0016
ATF3	-0.1157	0.0000	0.0016
PARP1	0.1278	0.0000	0.0017
LATS1	0.0617	0.0000	0.0023
MSI2	-0.0928	0.0000	0.0025
PRKCB	0.0755	0.0000	0.0033
YWHAE	-0.0818	0.0000	0.0034
RHEB	-0.0665	0.0000	0.0036
BAK1	0.0688	0.0000	0.0037
CDK1	0.0891	0.0000	0.0039
EIF4EBP1	0.0928	0.0000	0.0040
NFE2L2	-0.1066	0.0000	0.0042
HSPB1.pS82	-0.1469	0.0000	0.0043
ASS1	-0.0898	0.0000	0.0046
NLN	0.0746	0.0000	0.0049
HSP90AA1_B1	0.1249	0.0000	0.0054
ITGB1	-0.1084	0.0000	0.0065

PDK1	-0.0807	0.0000	0.0065
PPARA	-0.1022	0.0000	0.0071
RPS6.pS240_244	0.2000	0.0000	0.0096
COG3	0.0564	0.0000	0.0113
CDH2	0.0822	0.0000	0.0114
RICTOR	0.0643	0.0000	0.0132
BIRC2	-0.1188	0.0000	0.0135
RPSKA1_2_3	-0.0728	0.0000	0.0144
RPA32.pS4_8	0.0732	0.0001	0.0164
GATA3	0.0824	0.0001	0.0185
PPP2R2A_B_C_D	0.0819	0.0001	0.0206
FOXO3A	-0.0513	0.0001	0.0214
EIF4EBP1.pT37_46	0.1664	0.0001	0.0215
CBX7	-0.0737	0.0001	0.0230
CHEK2.pT68	-0.0644	0.0001	0.0241
SMAD3	0.0635	0.0001	0.0436
BECN1	0.0793	0.0002	0.0485

C

Proteins significantly changed after both 10 and 24 hours by protein functional group

PFG	Protein	Absolute number of proteins that changed	Size group	%
DNA damage	ATM, ATM-pS1981, CHEK1, CHEK2, CHEK2-pT68, ERCC1, MSH2, RAD51, RPA32-pS4_8, SSBP2	10	19	53%
Cell cycle	CCNB1, CCND3, CDK1-pT15, CDKN1A, CDKN1B-pT157, RB1, RB1-pS807_810, Wee1, FOXO3A-pS318_321	9	23	39%
TP53	ATM, ATM-pS1981, MDM2, MDM4, TP53, TP53-pS15	6	8	75%
Histone	ASH2L, HNRNPK, KDM1A, NCL, SIRT1, WTAP	6	23	26%
STP	ABL1, KIT, PTK2-pT397, PTPN11-pT542, SYK,	5	18	28%
Ribosome	DDX17, EEF2K, EIF2S1, HNRNPK, RPS6KB1.pT389	5	24	21%
PI3KAKT	AKT1_2_3.pT308, FOXO3A.pS318_321, PIK3CA, PIK3CB	4	15	27%
Metabolic	ASNS, OMA1, PKM2, TIGAR	4	16	25%
STAT	STAT3, STAT3.pS727, STAT3.pT705	3	7	43%
BH3	BBC3, BCL2, MCL1	3	9	33%
mTOR	MTOR, RICTOR, RICTOR-pT1135	3	11	27%
Differentiation	GATA1, GATA3	2	5	40%
SRC	LCK, SRC.pT527	2	5	40%
PKC	PRKCB, PRKCB.pS660	2	6	33%
Cytoskeletal	ACTB, VIM	2	7	29%
Heat shock	HSF1, HSPB1-pS82	2	7	29%
T-cell	NOTCH1, NOTCH1-cle	2	8	25%
Transcription	MYC, FLI1	2	15	13%
Phosphatase	PPP2R2A_B_C_D	1	2	50%
Apoptosis Regulating	AIFM1	1	4	25%
Creb	Creb1	1	4	25%
UPR	EIF2S1	1	6	17%
SMAD	SMAD3	1	8	13%
Adhesion	SPP1	1	11	9%
MEK	RAF1	1	11	9%
MAPK	MAPK14-pT180_182	1	13	8%
Apoptosis Occurring	-	0	6	0%
Autophagy	-	0	7	0%
HIPPO	-	0	8	0%
Hypoxia	-	0	5	0%
Wnt	-	0	4	0%

Table S7

	Ref.	Clinical phase leukemia/ lymphoma?	Drug	S1	S2	S3	S4	S5	S6	S7	S8	S9	Comment
ABL1	8, 9, 10, 11	Yes	Dasatinib, imatinib, nilotinib, bosutinib, ponatinib	■									
ACTB			-				■		■	■	■	■	
AKT1	6, 12, 13		MK-2206, Ipatasertib, AZD5363	■	■								
AKT1_2_3.pT308				■	■		■		■	■	■	■	T308 = activation
AKT3				■	■								
AKT1S1			-	■	■	■	■				■	■	
ASNS			-		■						■	■	
ASS1			-	■									
ATG3			-						■	■	■	■	
ATG7			-				■	■	■	■	■	■	
ATM	19, 20	No	KU-60019, AZD0156							■	■	■	S1981 = activation (upon DNA damage, phosphorylation causes dissociation of ATM)
ATM.pS1981				■	■	■	■			■	■	■	
AXL	23, 24	Yes	Bemcentinib, Gilteritinib	■									
BAK1			-			■	■	■	■	■	■	■	
BAX			-				■	■	■	■	■	■	
BCL2L11			-	■	■						■	■	
BECN1			-						■	■	■		
BID			-						■	■			
BIRC2	27	No	Birinapant	■	■								
BRAF	28, 29, 30	No	Vemurafenib, dabrafenib, encorafenib	■	■								
BRCA2			-	■	■								
BRD4	34, 35	Yes	Mivebresib, CC-90010	■									
CASP3			-					■					
CASP7.cle			-	■				■					
CASP9			-	■	■					■			
CAV1			-	■	■		■					■	
CBX7			-									■	
CCND1	36, 37		Ribociclib, palbociclib, abemaciclib	■									Indirect (CDK4/6 inhibitors)
CCND3										■			
CD44	38		Bivatuzumab					■	■	■	■	■	
CDKN1B			-		■	■	■	■			■	■	
CDKN1B.pS10						■	■					■	
CDKN2A			-			■		■					
CHEK1.pS296	40, 41, 42	Yes	SRA737, Prexasertib, AZD7762	■									
CHEK1.pS345				■	■			■	■	■	■		S345 = activation upon DNA damage
CHEK2.pT68											■	■	
CSNK2A1			-	■	■	■							
CTNNB1.pS33_37_T41	44, 45	No	PRI-724, SM08502	■	■								
CTNNB1.pT41_S45				■	■								

DLX1			-	■	■	■		■				■	
DUSP6			-			■	■	■	■		■	■	
E2F1	43	No	CGT003	■									
EGFR	7, 89, 90		Gefitinib, nimotuzumab, cetuximab	■	■								
EGLN1			-				■		■		■		
ERN1			-	■	■						■	■	
ETS1	65	Yes	TK216	■	■	■	■					■	
FLI1	65	Yes	TK216										
FOXM1			-	■									
FOXO3A			-	■									
GAB2			-						■		■		
GAB2.pT452				■									
GATA3			-									■	
GSK3A_B.pS21_9	78, 79		9-ING-41, Tideglusib							■			
H3K27Me3			-			■	■					■	
HIF1A	72, 73, 74, 75, 76, 77,	Yes	Panzem, tanespimycin, vorinostat, PT2385, EZN-2208, CRLX101	■									
HSPA1A_L	80, 81, 82		Ganetespib, onalespib, luminespib									■	
HSPB1.pS82	52, 53		OGX-427, RP101							■			
IGF1R	54, 55		Ganitumab, Figitumumab	■	■								
IGF1R.pY1135_1136				■	■	■	■					■	
IGFBP2			-	■	■							■	
ITGA2			-	■	■	■	■				■	■	
ITGAL	83		Efalizumab							■	■	■	
ITGB1			-	■									
JAG1			-	■	■		■				■	■	
KDR	84, 85, 86		Sunitinib, bevacizumab, ranibizumab		■	■	■	■	■	■	■	■	
LCK*	90, 91		Saractinib, Masitinib	■	■	■	■	■	■	■	■	■	
LYN	123	Yes	Bafetinib								■	■	
MAP2K1	31, 32, 33, 56, 66		Binimetinib, Trametinib, Cobimetinib, ONC201, Selumetinib				■		■	■	■	■	
MAP2K1_2										■	■		
MAP2K1_2.pS217_221					■	■	■	■	■	■	■	■	
MAPK1			-							■	■		
MCL1*	25, 26	Yes	MIK665, AMG-397	■	■	■	■	■	■	■	■	■	
MDM2	60, 61, 62, 63, 64	Yes	Idasanutlin, AMG232/ KRT232, APG-115, Milademetan, Siremadlin (HDM201)								■		
MEF2C			-							■			
MET.pY1230_1234_1235	99, 100, 101, 102		Crizotinib, cabozantinib, foretinib, Tivantinib	■	■	■						■	
MKNK1	103		BAY 1143269				■		■	■	■	■	
MMP2	104		Marimastat	■	■	■	■						
MSI2			-	■									
MYH11*			-	■	■	■	■	■	■	■	■	■	
NFE2L2	105, 106		TAK-228, Tecfidera	■									

NOL3			-	■	■		■	■	■	■	■	■	
OMA1			-					■					
PARP1	14, 15, 16, 17, 18	No	Olaparib, Rucaparib, Niraparib, Talazoparib, Veliparib			■	■	■					
PARP1.cle				■	■	■	■	■				■	
PCNA			-	■									
PDGFRB	84, 92		Sunitinib, Olaratumab	■	■							■	
PDK1			-	■	■						■	■	
PDK1.pS241										■	■		
PDL1	57, 58, 59		Atezolizumab, Avelumab, Durvalumab	■	■	■	■					■	
PECAM1			-	■	■								
PIK3CA	93, 94, 95, 96, 97		Idelalisib, copanlisib, duvelisib, alpelisib, taselisib, etc.			■		■					
PIK3CB				■	■								
PIM2	107, 108, 109, 110, 111	Yes	PIM447, AZD1208, SGI-1776, TP-3654, SEL24	■	■	■	■	■			■	■	
PKM2			-						■	■	■		
PLK1	50, 51	Yes	Volasertib, Rigosertib	■									
PPARA	112		TPST-1120	■	■							■	
PRKCA	113, 114, 115, 116		LXS196, ruboxistaurin, Bryostatin 1, Tamoxifen	■	■	■	■		■	■	■	■	
PRKCB						■					■	■	
PRKCB.pS660							■	■	■	■	■		
PRKCD.pS664				■	■	■		■	■	■	■	■	
PTEN			-					■					
PTK2.pT397	117, 118, 119, 120		GSK2256098, BI 853520, PF-00562271, Defactinib	■	■	■					■	■	
PTPN11.pT542	121		TNO-155, RCM-4630									■	
RAF1.pS338*	98	Yes	Sorafenib	■	■	■	■	■	■	■	■	■	
RHEB			-	■									
RICTOR	68, 69, 70, 71		Rapamycin, everolimus, temsirolimus, sirolimus										Via mTORC2
RICTOR.pT1135				■	■	■	■	■	■	■	■	■	
RPS6KB1.pT389			?	■				■	■	■	■	■	Indirect, mTORC1 inhibitors
RPSKA1_2_3								■	■	■			
RPSKA1.pT573				■	■		■	■	■	■	■		
RPTOR	68, 69, 70, 71		Rapamycin, everolimus, temsirolimus, sirolimus	■	■							■	Via mTORC1
SMAD5.pS463_465	87		Galunisertib	■	■	■	■					■	
SOX2			-	■									
SPI1			-						■	■	■		
SPP1			-	■	■								
SRSF1	45		SM08502	■									
STK4	67		Neratinib		■		■	■	■	■	■	■	
SYK	46, 47, 48	Yes	Fostamatinib, cerdulatinib, entospletinib								■		
TAPBP			-									■	

TP53			-			■							
TP53.pS15				■	■							■	
TSC1			-			■	■		■	■	■	■	
TSC2.pT1462			-	■	■								
VCP	21	Yes	CB-5339					■	■	■			
VIM*	49	No	20(R)-Rg3, Silibinin, Volasertib	■	■	■	■	■	■	■	■	■	
YBX1.pS102*			-	■	■	■	■	■	■	■	■	■	

*	Universal
1	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7017239/
2	https://clinicaltrials.gov/ct2/show/NCT01870596?term=chk1&draw=2&rank=2
3	https://clinicaltrials.gov/ct2/show/NCT02797964?term=chk1&draw=2&rank=5
4	https://www.cancer.gov/about-cancer/treatment/clinical-trials/intervention/axl-inhibitor-bgb324?redirect=true
5	https://clinicaltrials.gov/ct2/results?cond=&term=bgb324 2206&type=&rslt=&age_v=&gndr=&cond=&intr=&titles=&outc=&spons=&lead=&id=&cntry1=&state1=&cntry2=&state2=&
6	https://clinicaltrials.gov/ct2/results?term=MK
7	https://clinicaltrials.gov/ct2/results?cond=&term=Gefitinib&cntry=&state=&city=&dist=
8	https://clinicaltrials.gov/ct2/results?cond=&term=Ponatinib&cntry=&state=&city=&dist=
9	https://clinicaltrials.gov/ct2/results?cond=&term=Dasatinib&cntry=&state=&city=&dist=
10	https://clinicaltrials.gov/ct2/results?cond=&term=nilotinib&cntry=&state=&city=&dist=
11	https://clinicaltrials.gov/ct2/results?cond=&term=imatinib&cntry=&state=&city=&dist=
12	https://clinicaltrials.gov/ct2/results?cond=&term=Ipatasertib&cntry=&state=&city=&dist=
13	https://clinicaltrials.gov/ct2/results?cond=&term=AZD5363&cntry=&state=&city=&dist=
14	https://clinicaltrials.gov/ct2/results?cond=&term=olaparib&cntry=&state=&city=&dist=
15	https://clinicaltrials.gov/ct2/results?cond=&term=Rucaparib&cntry=&state=&city=&dist=
16	https://clinicaltrials.gov/ct2/results?cond=&term=Niraparib&cntry=&state=&city=&dist=
17	https://clinicaltrials.gov/ct2/results?cond=&term=Talazoparib&cntry=&state=&city=&dist=
18	https://clinicaltrials.gov/ct2/results?cond=&term=Velipar 60019&cntry=&state=&city=&dist=
19	https://clinicaltrials.gov/ct2/results?cond=&term=KU
20	https://clinicaltrials.gov/ct2/results?cond=&term=AZD01 5339&cntry=&state=&city=&dist=
21	https://clinicaltrials.gov/ct2/results?cond=&term=CB 5083&cntry=&state=&city=&dist=
22	https://clinicaltrials.gov/ct2/results?cond=&term=CB
23	https://clinicaltrials.gov/ct2/results?cond=&term=BGB32 0903&cntry=&state=&city=&dist=
24	https://clinicaltrials.gov/ct2/results?cond=&term=Gilteritinib&cntry=&state=&city=&dist=
25	https://clinicaltrials.gov/ct2/results?cond=&term=MIK665 397&cntry=&state=&city=&dist=
26	https://clinicaltrials.gov/ct2/results?cond=&term=AMG
27	https://clinicaltrials.gov/ct2/show/NCT03803774?term=birc2&draw=2&rank=1
28	https://clinicaltrials.gov/ct2/results?cond=&term=Vemurafenib&cntry=&state=&city=&dist=
29	https://clinicaltrials.gov/ct2/results?cond=&term=dabrafenib&cntry=&state=&city=&dist=
30	https://clinicaltrials.gov/ct2/results?cond=&term=encorafenib&cntry=&state=&city=&dist=
31	https://clinicaltrials.gov/ct2/results?cond=&term=Binimetinib&cntry=&state=&city=&dist=
32	https://clinicaltrials.gov/ct2/results?cond=&term=Trametinib+&cntry=&state=&city=&dist=
33	https://clinicaltrials.gov/ct2/results?cond=&term=Cobimetinib&cntry=&state=&city=&dist=
34	https://clinicaltrials.gov/ct2/results?cond=&term=mivebr 90010&cntry=&state=&city=&dist=
35	https://clinicaltrials.gov/ct2/results?cond=&term=CC
36	https://clinicaltrials.gov/ct2/results?cond=&term=Palbociclib&cntry=&state=&city=&dist=
37	https://clinicaltrials.gov/ct2/results?cond=&term=ribociclib&cntry=&state=&city=&dist=
38	https://clinicaltrials.gov/ct2/results?cond=&term=Bivatuzumab&cntry=&state=&city=&dist=
39	https://clinicaltrials.gov/ct2/results?cond=&term=LY2606368&cntry=&state=&city=&dist=
40	https://clinicaltrials.gov/ct2/results?cond=&term=AZD7762&cntry=&state=&city=&dist=
41	https://clinicaltrials.gov/ct2/results?cond=&term=Prexasertib&cntry=&state=&city=&dist=
42	https://clinicaltrials.gov/ct2/results?cond=&term=SRA737&cntry=&state=&city=&dist=

43	https://clinicaltrials.gov/ct2/results?cond=&term=CGT003 724&cntry=&state=&city=&dist=
44	https://clinicaltrials.gov/ct2/results?cond=&term=PRI
45	https://clinicaltrials.gov/ct2/results?cond=&term=SM08502&cntry=&state=&city=&dist=
46	https://clinicaltrials.gov/ct2/results?cond=&term=Fostamatinib&cntry=&state=&city=&dist=
47	https://clinicaltrials.gov/ct2/results?cond=&term=cerdulatinib&cntry=&state=&city=&dist=
48	https://clinicaltrials.gov/ct2/results?cond=&term=entospletinib&cntry=&state=&city=&dist=
49	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7017239/
50	https://clinicaltrials.gov/ct2/results?cond=&term=Volasertib&cntry=&state=&city=&dist=
51	https://clinicaltrials.gov/ct2/show/NCT02030639?term=R 427&cntry=&state=&city=&dist=
52	https://clinicaltrials.gov/ct2/results?cond=&term=OGX
53	https://clinicaltrials.gov/ct2/results?cond=&term=RP101&cntry=&state=&city=&dist=
54	https://clinicaltrials.gov/ct2/results?cond=&term=Figitumumab&cntry=&state=&city=&dist=
55	https://clinicaltrials.gov/ct2/results?cond=&term=Ganitumab&cntry=&state=&city=&dist=
56	https://clinicaltrials.gov/ct2/results?cond=&term=ONC201&cntry=&state=&city=&dist=
57	https://clinicaltrials.gov/ct2/results?cond=&term=Atezolizumab&cntry=&state=&city=&dist=
58	https://clinicaltrials.gov/ct2/results?cond=&term=Avelumab&cntry=&state=&city=&dist=
59	https://clinicaltrials.gov/ct2/results?cond=&term=Durvalumab&cntry=&state=&city=&dist=
60	https://clinicaltrials.gov/ct2/results?cond=&term=idasanutlin&cntry=&state=&city=&dist=
61	https://clinicaltrials.gov/ct2/results?cond=&term=AMG23 115&cntry=&state=&city=&dist=
62	https://clinicaltrials.gov/ct2/results?cond=&term=APG
63	https://clinicaltrials.gov/ct2/results?cond=&term=Milademetan&cntry=&state=&city=&dist=
64	https://clinicaltrials.gov/ct2/results?cond=&term=Siremadlin+%28HDM201%29&cntry=&state=&city=&dist=
65	https://clinicaltrials.gov/ct2/results?cond=&term=TK216&cntry=&state=&city=&dist=
66	https://clinicaltrials.gov/ct2/results?cond=&term=Selumetinib&cntry=&state=&city=&dist=
67	DOI: 10.1038/s41420-019-0232-0
68	https://clinicaltrials.gov/ct2/results?cond=&term=Rapamycin&cntry=&state=&city=&dist=
69	https://clinicaltrials.gov/ct2/results?cond=&term=everolimus&cntry=&state=&city=&dist=
70	https://clinicaltrials.gov/ct2/results?cond=&term=temsirolimus&cntry=&state=&city=&dist=
71	https://clinicaltrials.gov/ct2/results?cond=&term=sirolimus&cntry=&state=&city=&dist=
72	https://clinicaltrials.gov/ct2/results?cond=&term=Panzem&cntry=&state=&city=&dist=
73	https://clinicaltrials.gov/ct2/results?cond=&term=tanespimycin&cntry=&state=&city=&dist=
74	https://clinicaltrials.gov/ct2/results?cond=&term=+vorinostat&cntry=&state=&city=&dist=
75	https://clinicaltrials.gov/ct2/results?cond=&term=+PT238 2208&cntry=&state=&city=&dist=
76	https://clinicaltrials.gov/ct2/results?cond=&term=EZN
77	https://clinicaltrials.gov/ct2/results?cond=&term=CRLX101&cntry=&state=&city=&dist=
78	https://clinicaltrials.gov/ct2/results?cond=&term=Tideglu ING 41&cntry=&state=&city=&dist=
79	https://clinicaltrials.gov/ct2/results?cond=&term=9
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82	https://clinicaltrials.gov/ct2/results?cond=&term=AUY922&cntry=&state=&city=&dist=
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86	https://clinicaltrials.gov/ct2/results?cond=&term=ranibizumab&cntry=&state=&city=&dist=

87	https://clinicaltrials.gov/ct2/results?cond=&term=Galunisertib&cntry=&state=&city=&dist=
88	https://clinicaltrials.gov/ct2/results?cond=&term=nimotuzumab&cntry=&state=&city=&dist=
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