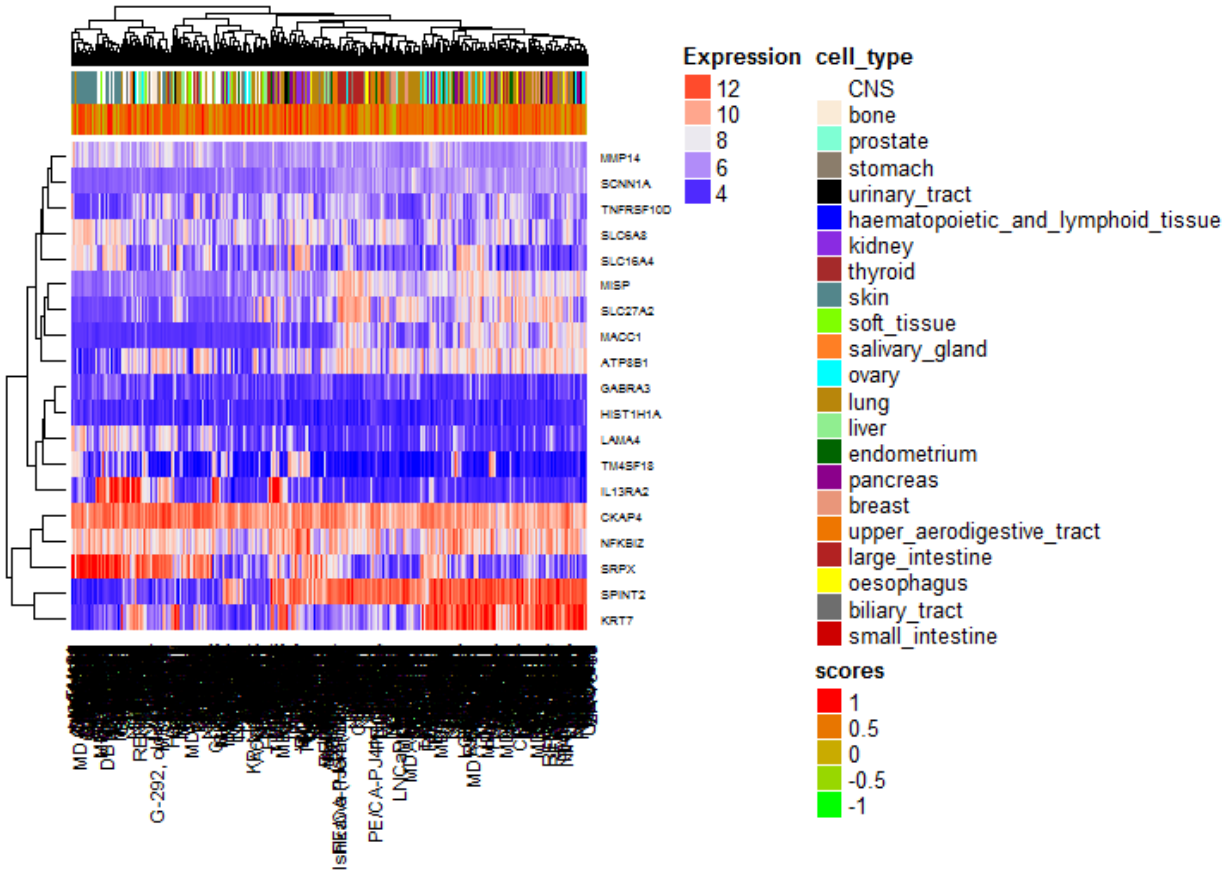
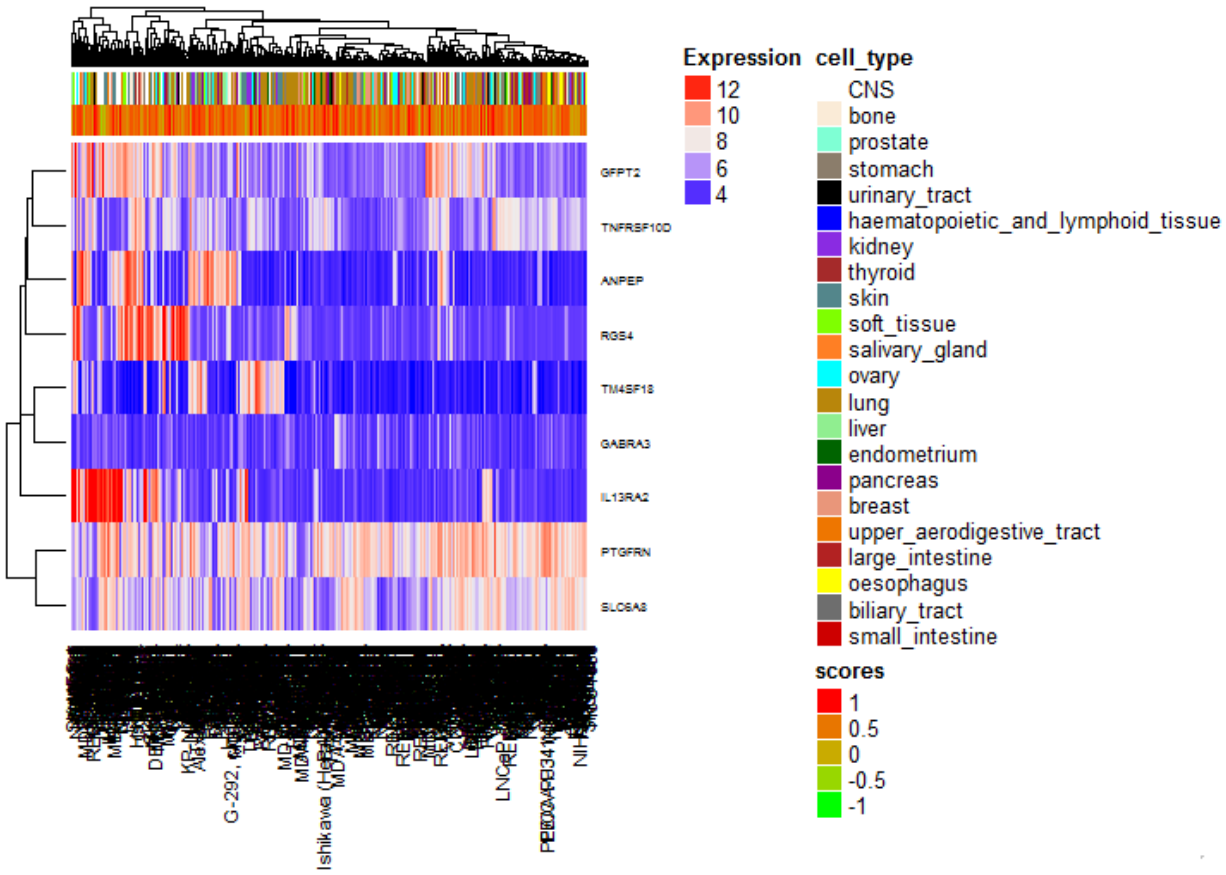
SUPPLEMENTARY DATA



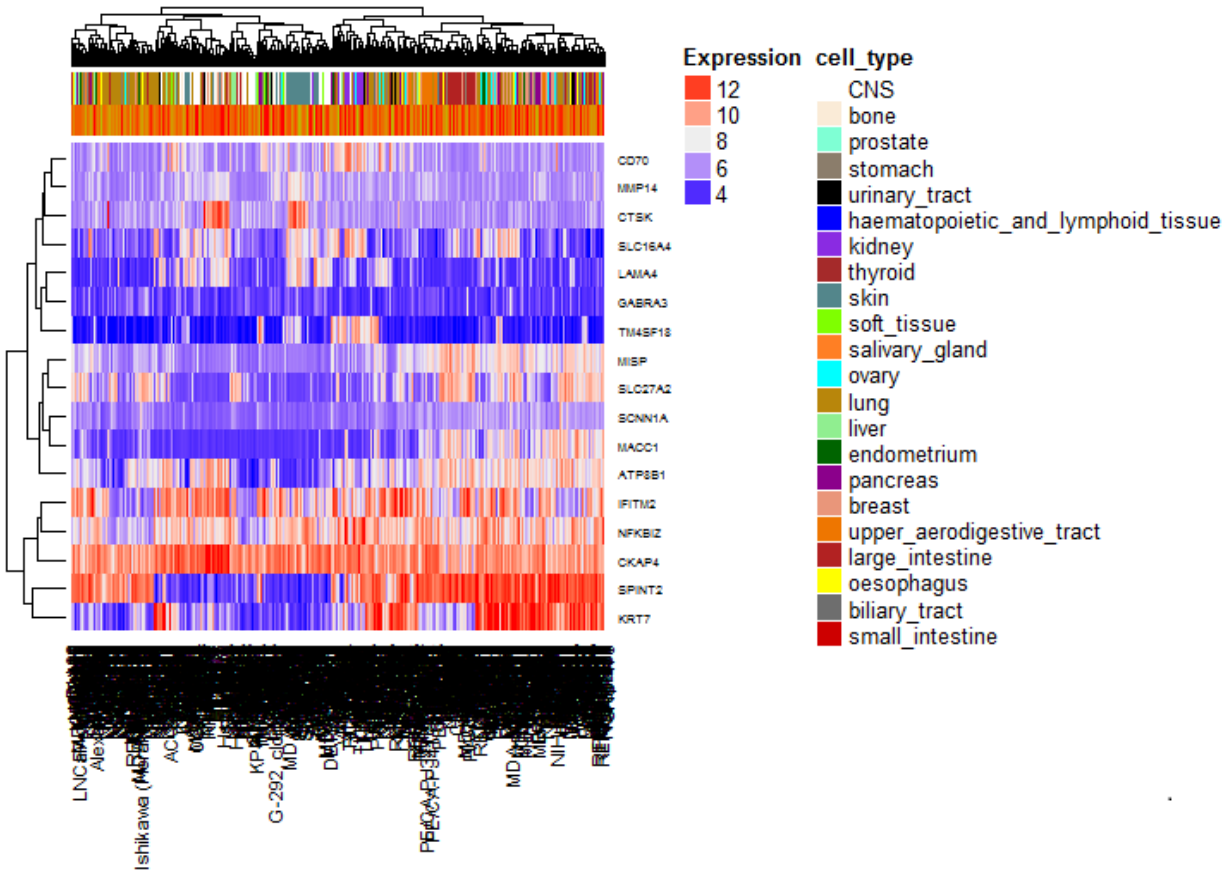
Supplementary Figure 1A Potential biomarker genes of atorvastatin sensitivity

The CCLE cell lines' tissue of origin, mRNA expression levels (4-12) of potential biomarker genes and scores for atorvastatin sensitivity (1 to -1) are shown using the Atorva-MGM method.



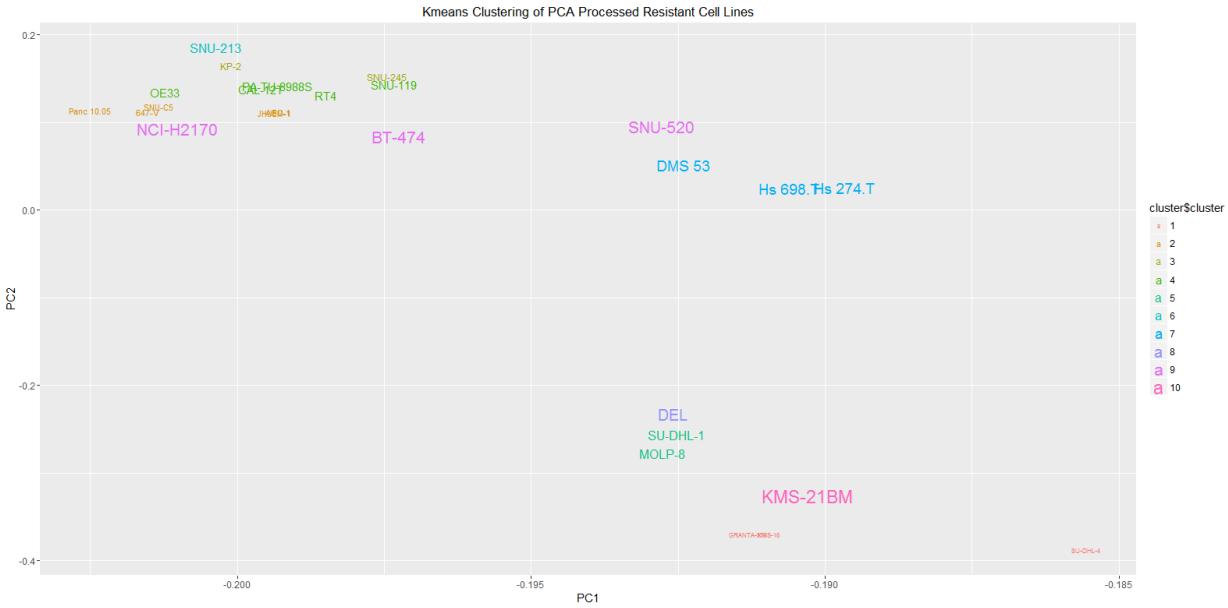
Supplementary Figure 1B Potential biomarker genes of atorvastatin and rosuvastatin sensitivity

The CCLE cell lines' tissue of origin, mRNA expression levels (4-12) of potential biomarker genes and scores for atorvastatin sensitivity (1 to -1) are shown using the combined-MGM method.



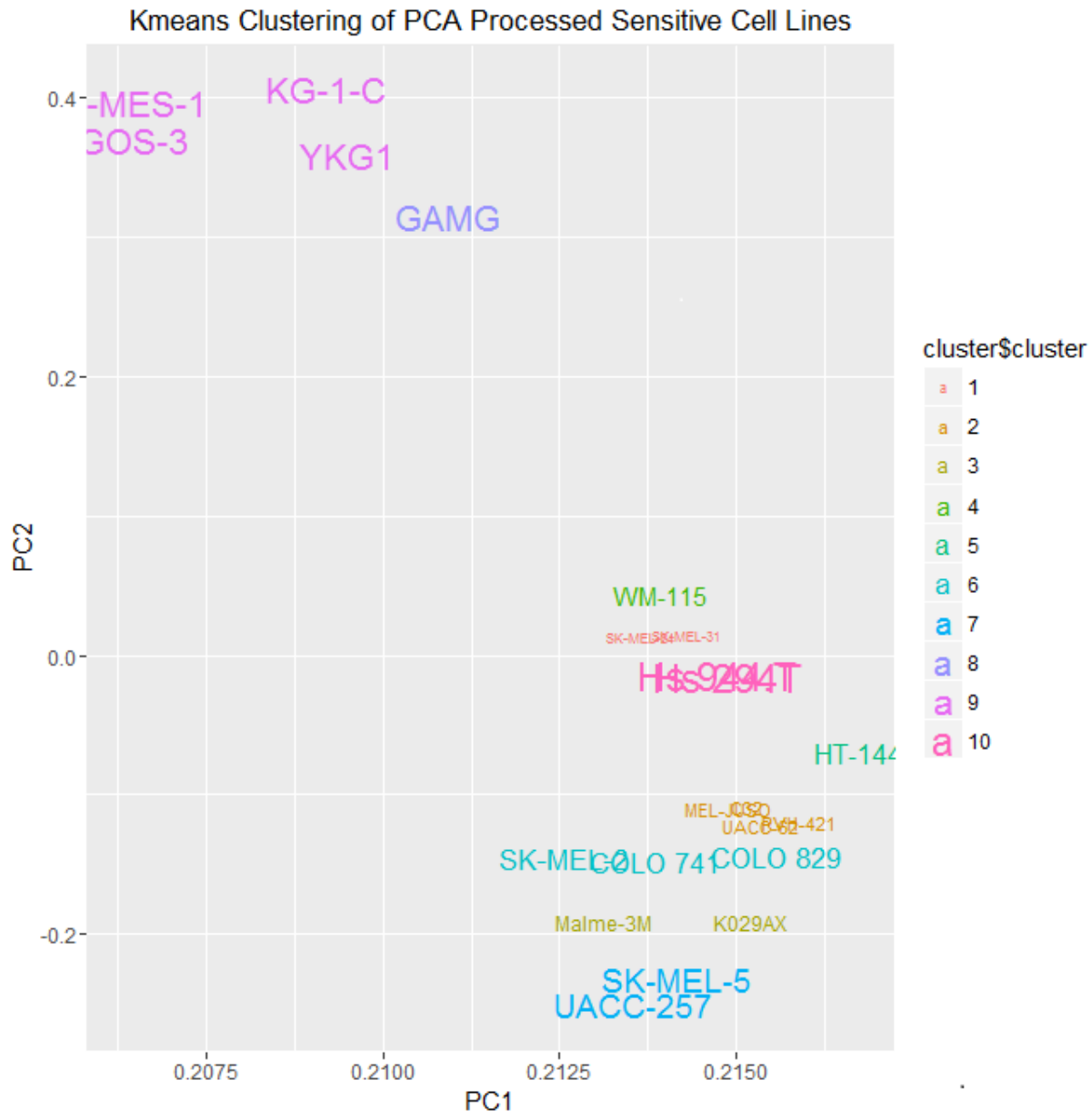
Supplementary Figure 1C Potential biomarker genes of atorvastatin sensitivity

The CCLE cell lines' tissue of origin, mRNA expression levels (4-12) of potential biomarker genes and scores for atorvastatin sensitivity (1 to -1) are shown using the Atorva-TReCS method.



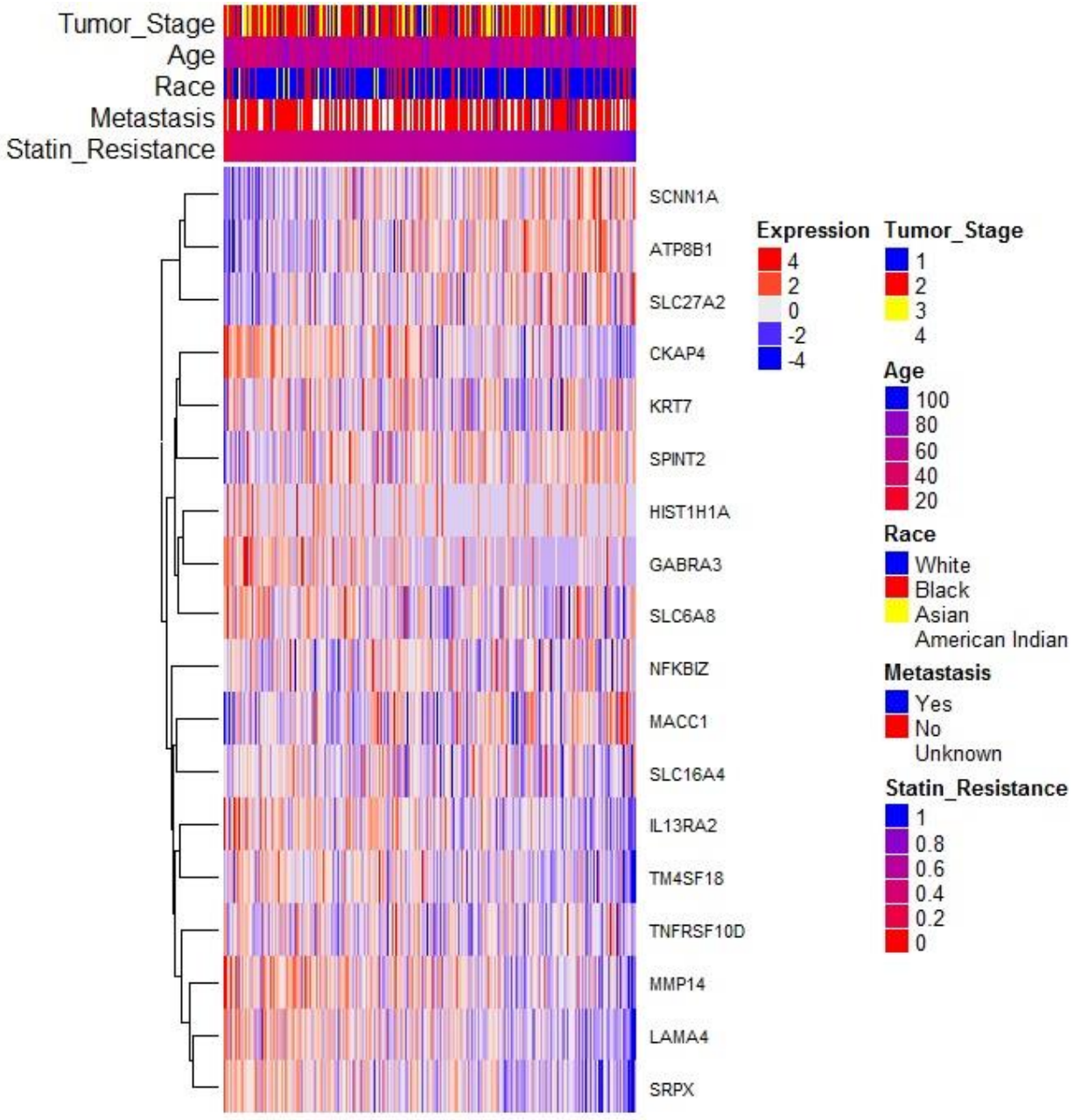
Supplementary Figure 2A Transcriptome comparison of predicted statin resistant CCLE cell lines

Principal component analysis was performed on the baseline gene expression profiles of 26 CCLE cell lines that are predicted to be statin resistant. K-means clustering was then applied to find 10 predominant clusters of the CCLE cell lines to establish a top 10 set of resistant cell lines.

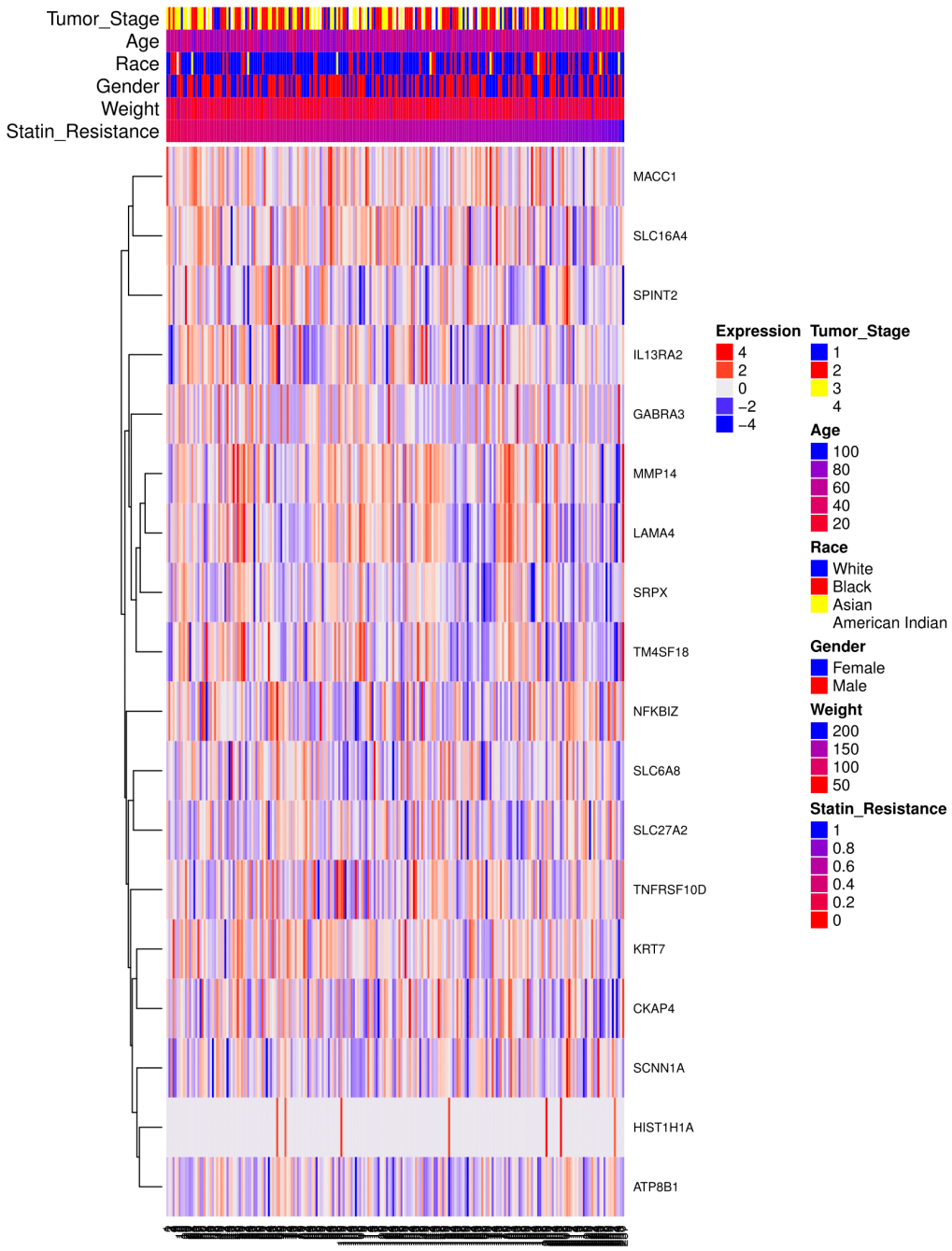


Supplementary Figure 2B Transcriptome comparison of predicted statin sensitive CCLE cell lines

Principal component analysis was performed on the baseline gene expression profiles of 23 CCLE cell lines that are predicted to be statin sensitive. K-means clustering was then applied to find 10 predominant clusters of the CCLE cell lines to establish a top 10 set of sensitive cell lines.

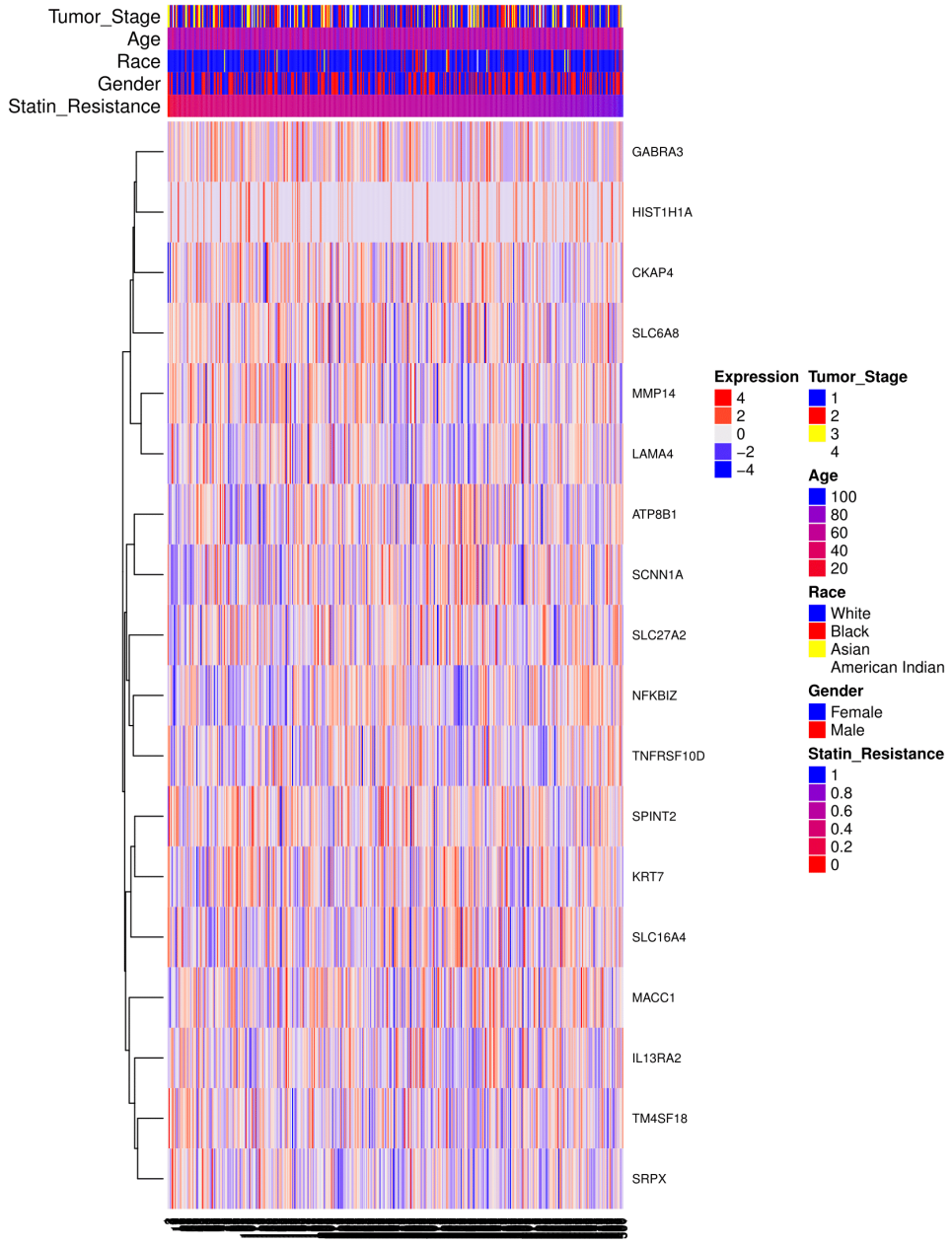


Supplementary Figure 3A. **Predicted statin sensitivity of breast cancers deposited in TCGA.** Transcriptome profiles of breast cancer samples deposited in TCGA were used as input into our statin sensitivity predictive model. Clinical covariates showed no significant relationship with statin sensitivity.

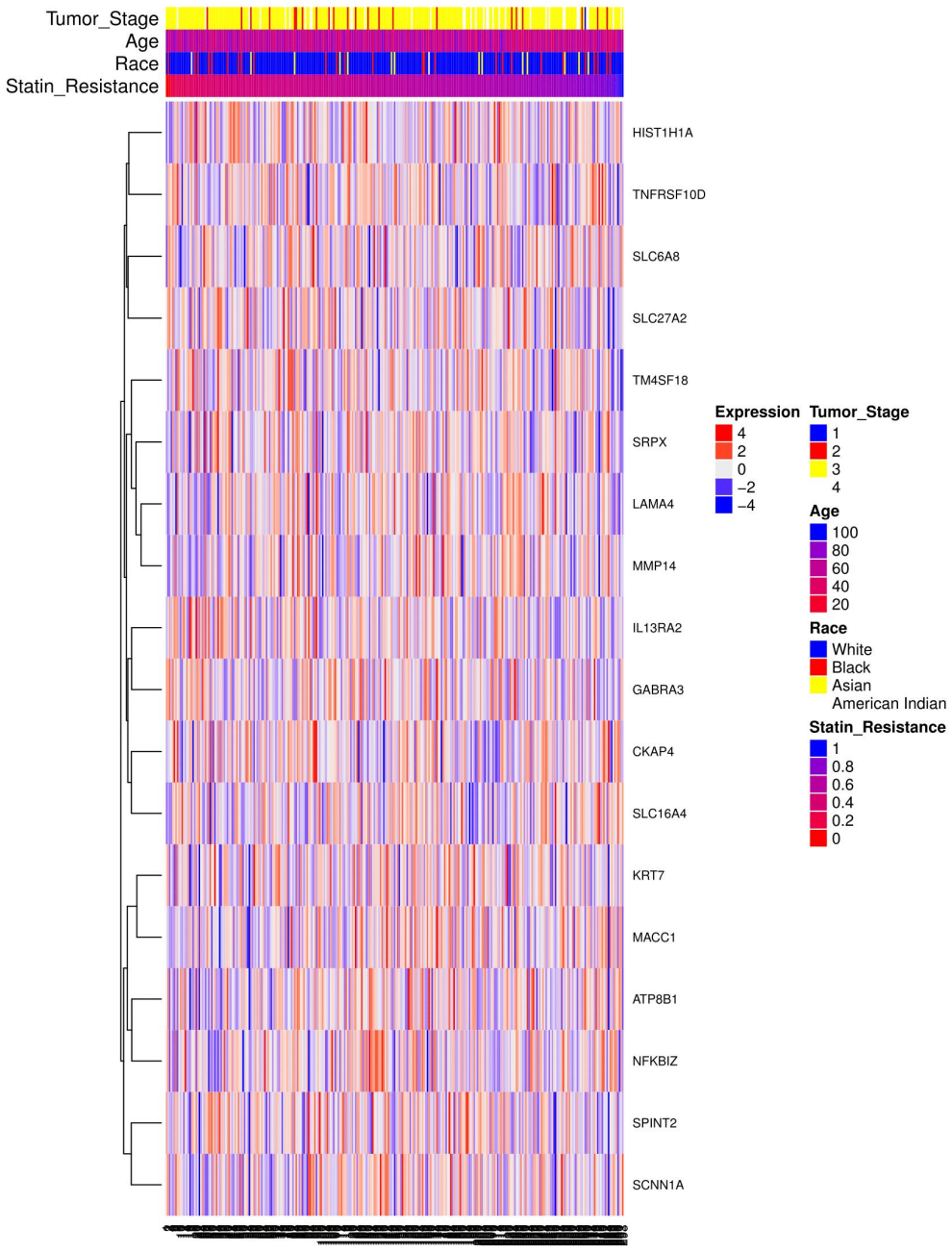


Supplementary Figure3B COAD statin sensitivity predictions. Predictions of statin sensitivity on the COAD (Colon Adenocarcinoma) TCGA expression data. Tumor metastasis was found to be significantly

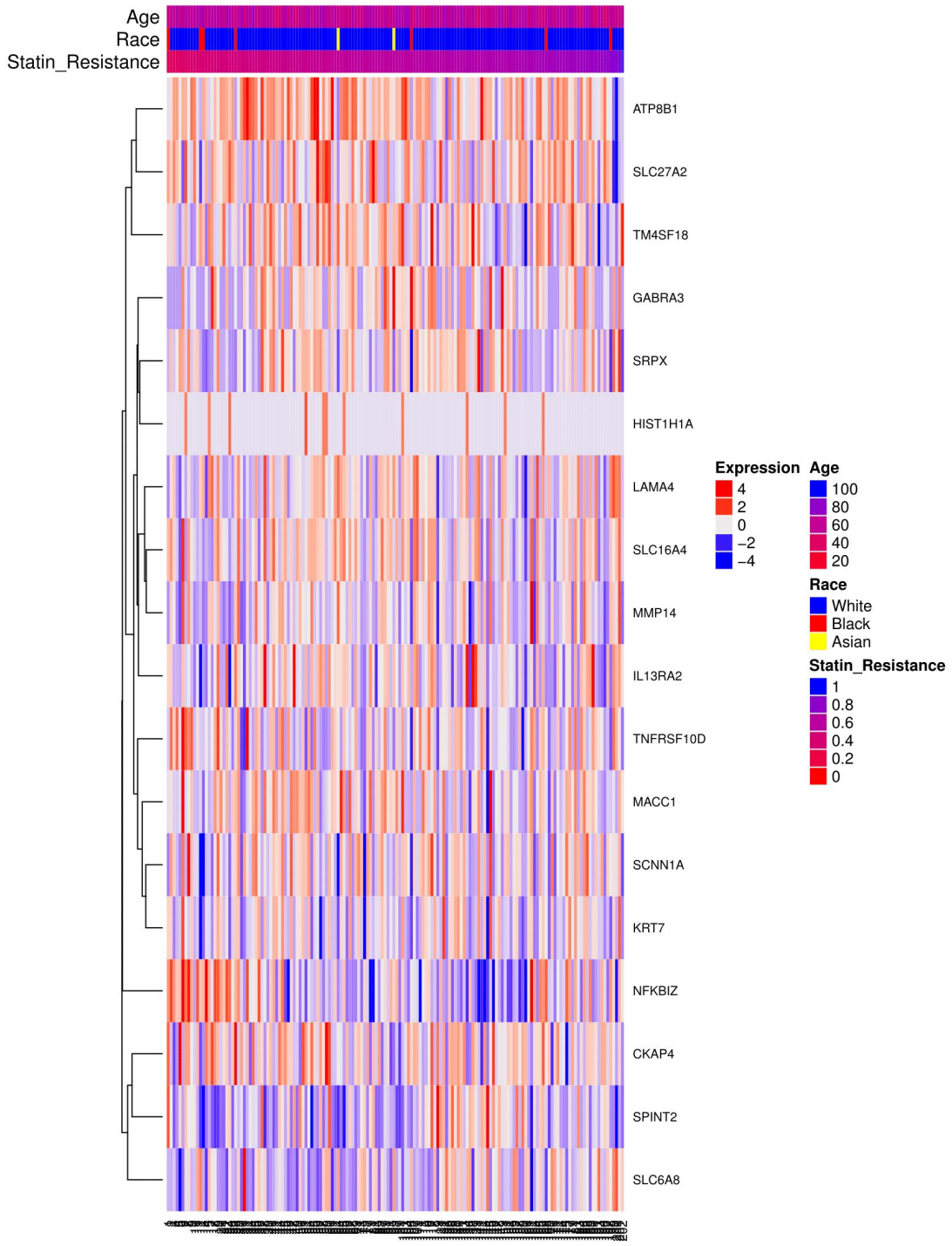
correlated to statin sensitivity.



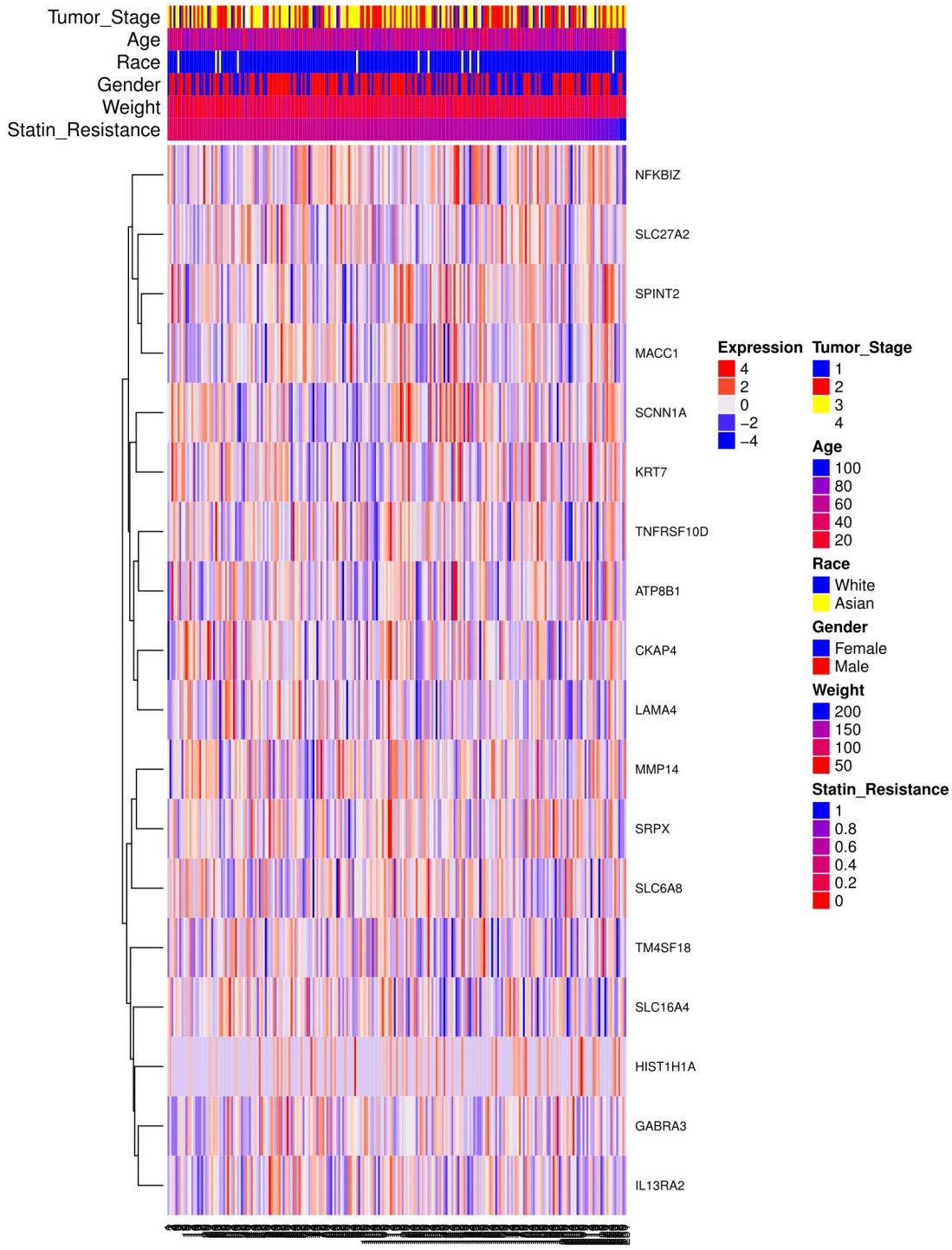
Supplementary Figure 3C LUAD statin sensitivity predictions. Predictions of statin sensitivity on the LUAD (Lung Adenocarcinoma) TCGA expression data. No covariates were found to be significantly correlated to statin sensitivity.



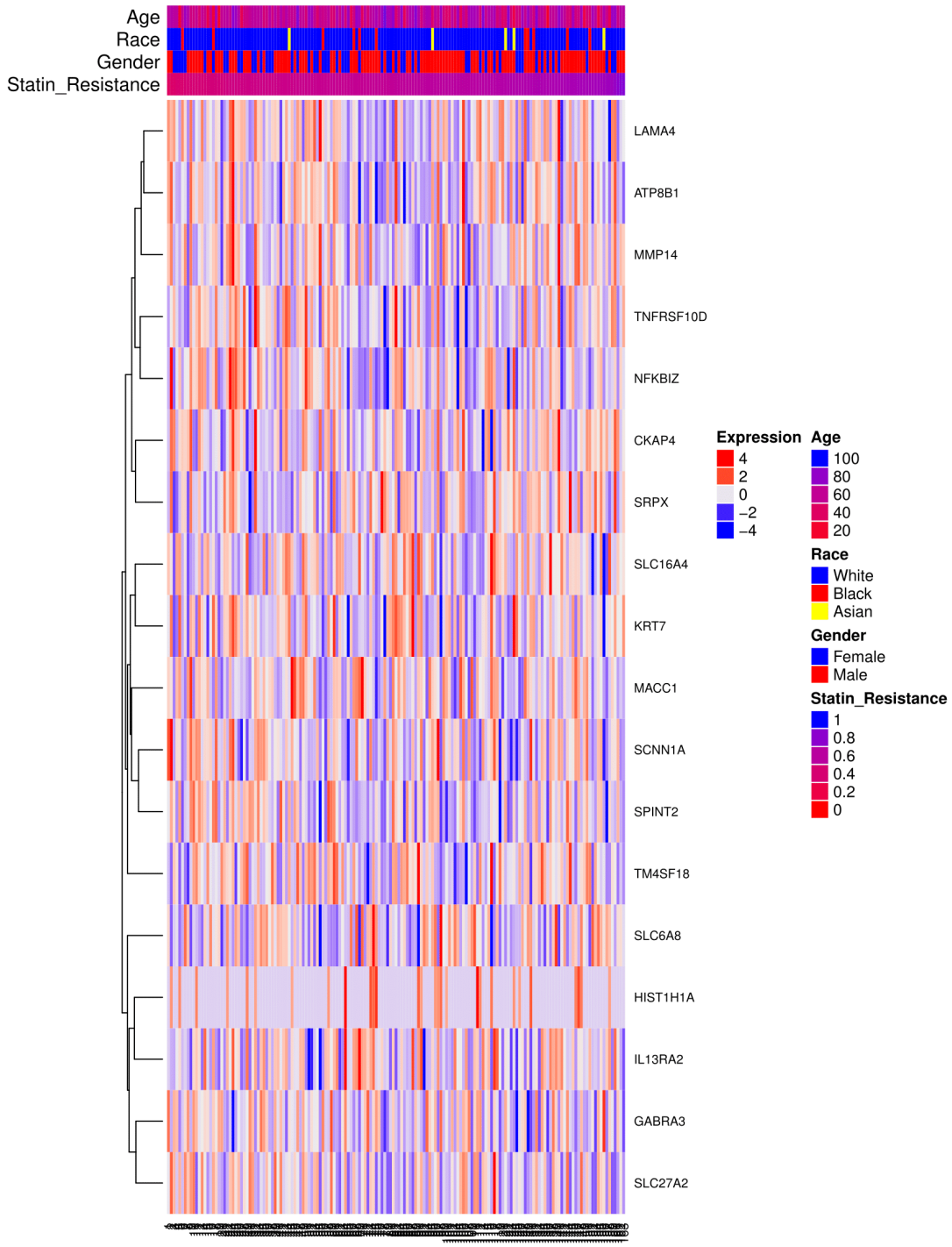
Supplementary Figure 3D OV statin sensitivity predictions. Predictions of statin sensitivity on the OV (Ovarian Cancer) TCGA expression data. Age was found to be significantly correlated to statin sensitivity.



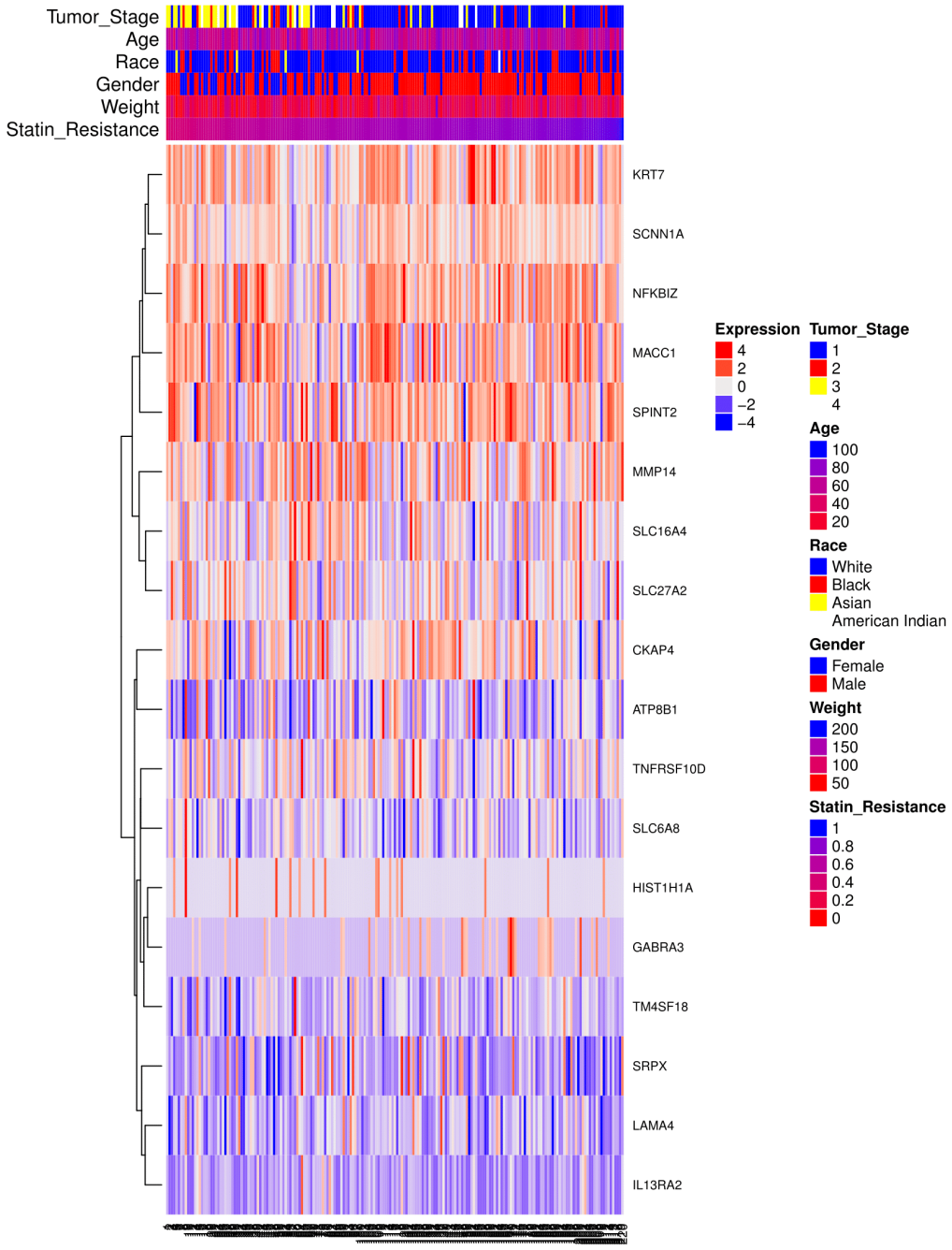
Supplementary Figure 3E PRAD statin sensitivity predictions. Predictions of statin sensitivity on the PRAD (Prostate Adenocarcinoma) TCGA expression data. No clinical covariates were found to be significantly correlated to statin sensitivity.



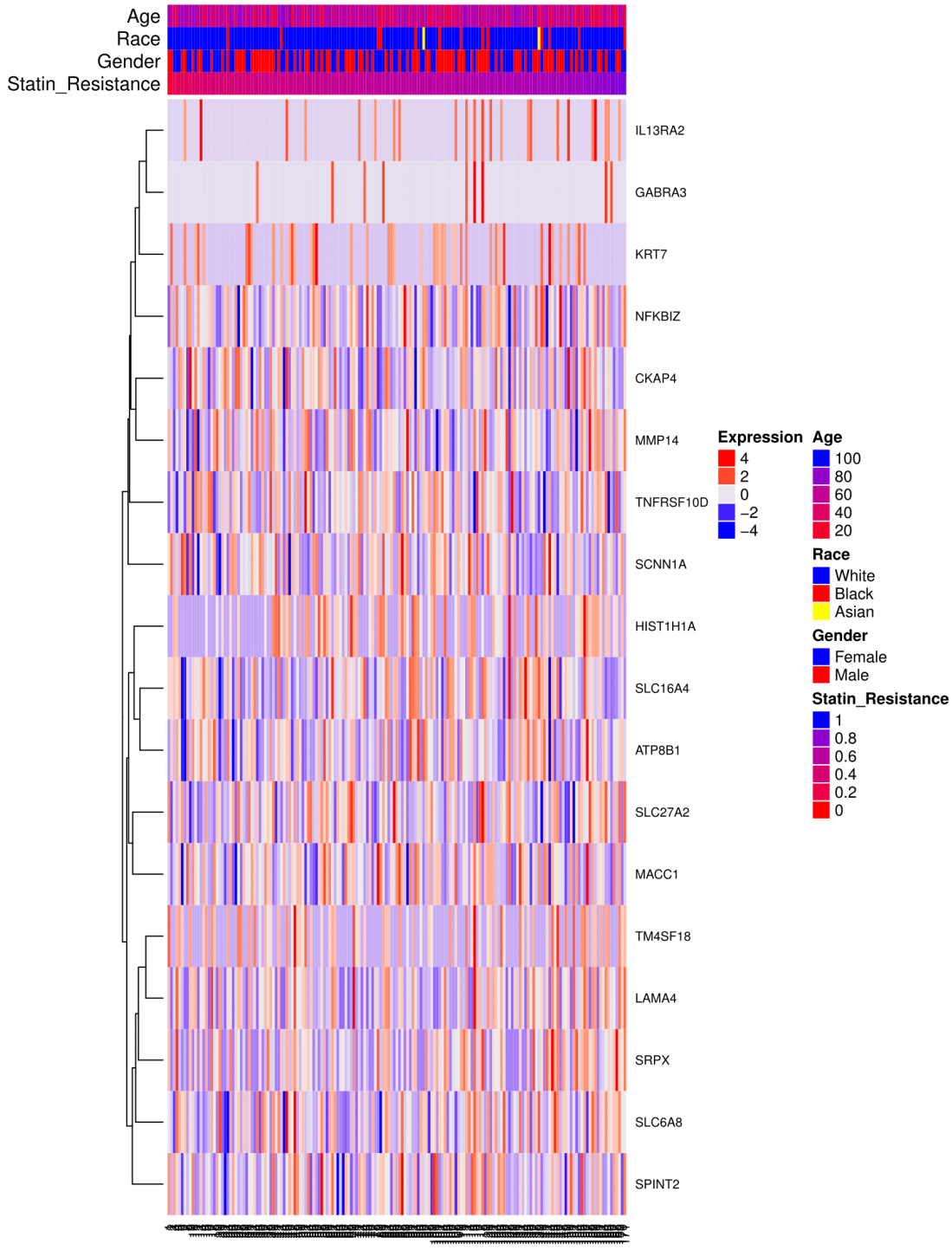
Supplementary Figure 3F SKCM statin sensitivity predictions. Predictions of statin sensitivity on the SKCM (Skin Cutaneous Melanoma) TCGA expression data. No clinical covariates were found to be significantly correlated to statin sensitivity.



Supplementary Figure 3G GBM statin sensitivity predictions. Predictions of statin sensitivity on the GBM (Glioblastoma) TCGA expression data. No clinical covariates were found to be significantly correlated to statin sensitivity.



Supplementary Figure 3H KIPAN statin sensitivity predictions. Predictions of statin sensitivity on the KIPAN (Pan-Kidney Cohort) TCGA expression data. Age, Tumor Stage, and Weight were found to be significantly correlated to statin sensitivity.



Supplementary Figure 3I LAML statin sensitivity predictions. Predictions of statin sensitivity on the LAML (Acute Myeloid Leukemia) TCGA expression data. Age was found to be significantly correlated to statin sensitivity.

GO Term	Relevant Genes	Corrected P-Value
Axonal transport of mitochondrion	UCHL1, NEFL	0.13939585
Axon cytoplasm	UCHL1, NEFL	0.250536938
Extracellular space	CXCL5, CD70, IL13RA2	0.439228308
Extracellular region	CXCL5, MMP1, IL13RA2	0.45323271
Myelin sheath	UCHL1, NEFL	0.466479946
Rheumatoid arthritis	CXCL5, MMP1	0.473252751
Cell-cell signaling	CXCL5, CD70	0.959289219

Supplementary Table 1 Ontology of cluster one from identified signature: Gene ontology terms from cluster one of genes from the Atorva-T-ReCS identified biological signature. P-Value correction for multiple testing was applied using the Bonferroni correction method.

GO Term	Relevant Genes	Corrected P-Value
Extracellular space	CTSK, EREG, IL18, GAL, TNFAIP2	0.260167934
Angiogenesis	EREG, IL18, TNFAIP2	0.647369645
SNARE binding	VAMP8, TNFAIP2	0.66437542
Extracellular region	CTSK, EREG, IL18, GAL	0.759814148
Inflammatory response	TNFRSF10D, IL18, GAL	0.764152784
Rheumatoid arthritis	CTSK, IL18	0.801237029
Positive regulation of smooth muscle cell proliferation	EREG, IL18	0.814152797
Legionellosis	IL18, EEF1A2	0.861642906

Supplementary Table 2 Ontology of cluster two from identified signature: Gene ontology terms from cluster two of genes from the Atorva-T-ReCS identified biological signature. P-Value correction for multiple testing was applied using the Bonferroni correction method.

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GO Term	Relevant Genes	Corrected P-Valiue
Cell adhesion	LAMA4, LPXN, SRPX, TNC, POSTN, CDH2, ITGB3, THBS1, ENG, FN1, PCDH18, THY1	9.06E-08
Focal adhesion	LPXN, TNC, HSPA1A, CDH2, ITGB3, ENG, PLAU, THY1	1.81E-04
Extracellular matrix	LAMA4, SERPINE2, TNC, SERPINE1, POSTN, THBS1, FN1	2.46E-04
Extracellular matrix organization	LAMA4, TNC, SERPINE1, POSTN, ITGB3, THBS1, FN1	2.58E-04
Extracellular space	SERPINE2, TNC, SERPINE1, CD109, AXL, POSTN, DPYSL3, THBS1, ENG, PLTP, PLAU, FN1	2.64E-04
Cell surface	SRPX, CD109, AXL, VAMP5, ITGB3, THBS1, ENG, PLAU, HLA-DRA	2.71E-04
Extracellular region	INHBA, LAMA4, CHRDL1, SERPINE2, GLIPR1, TNC, SERPINE1, HIST1H3C, THBS1, PLTP, PLAU, FN1	8.55E-04
Regulation of cell migration	LAMA4, SERPINE2, DPYSL3, ITGB3, THY1	0.00136393
ECM-receptor interaction	LAMA4, TNC, ITGB3, THBS1, FN1	0.002847294
Negative regulation of plasminogen activation	SERPINE2, SERPINE1, THBS1	0.003599381

Supplementary Table 3 Ontology of cluster three from identified signature: Gene ontology terms from cluster three of genes from the Atorva-T-ReCS identified biological signature. P-Value correction for multiple testing was applied using the Bonferroni correction method.

Tumor Type	COAD	LUAD	OV	PRAD	SKCM	GBM	KIPAN	LAML
Metastasis	**1.59E-02**	NA	NA	NA	2.55E-01	NA	NA	NA
Gender	7.13E-01	4.60E-01	NA	NA	2.39E-01	1.33E-01	**5.23E-04**	8.47E-01
Age	9.51E-01	5.55E-02	**6.62E-03**	3.14E-01	2.87E-01	6.41E-01	9.93E-01	**1.25E-02**
Tumor Stage	3.53E-01	6.61E-01	2.18E-01	NA	6.79E-01	NA	**1.30E-11**	NA
Weight	7.08E-01	NA	NA	NA	9.54E-01	NA	**1.40E-02**	NA
Race	6.51E-02	3.95E-01	5.15E-01	3.73E-01	5.44E-01	5.19E-01	2.36E-01	2.14E-01

Supplementary Table 4 Correlations of clinical covariates with predicted statin sensitivity.

Correlations represented as p-values with the null hypothesis of zero correlation. Statistically significant non-zero correlations at the .05 threshold are bolded. Columns refer to different tumor types from the TCGA, and rows refer to the particular clinical covariate.

Cell_Line	Atorva_TRECS	Combined	Atorva_MGM	Average
UACC-62	-0.095187618	-0.078630291	-0.29537356	-0.156397156
SK-MEL-2	-0.174954889	-0.29596797	-0.290684293	-0.25386905
Hs 944.T	-0.066754828	-0.299593724	-0.279612918	-0.21532049
SK-MEL-24	-0.436971908	-0.252854899	-0.271016817	-0.320281208
MEL-JUSO	-0.00990986	-0.059853918	-0.247283339	-0.105682372
HT-144	-0.14165462	-0.135218854	-0.235577555	-0.17081701
YKG1	0.026982043	-0.554744169	-0.216842825	-0.24820165
SK-MEL-5	0.022627577	-0.099987534	-0.212991538	-0.096783832
COLO 829	-0.221409415	0.112235768	-0.212423444	-0.10719903
UACC-257	-0.12704164	-0.108290579	-0.200920061	-0.145417427
A-375	-0.030142679	-0.143974657	-0.191396146	-0.121837827
Hs 936.T	0.072522085	0.056116996	-0.154045524	-0.008468814
K029AX	-0.16224047	-0.171384531	-0.131436226	-0.155020409
SNU-201	0.033576857	-0.150756849	-0.126382517	-0.081187503
U-251 MG	0.054975706	-0.017881175	-0.125564316	-0.029489928
SK-MEL-31	-0.189181905	0.079321322	-0.115899571	-0.075253384
RVH-421	-0.189273117	-0.121734169	-0.115774761	-0.142260683
SNB-19	0.001513038	-0.062588956	-0.111499233	-0.05752505
KG-1-C	0.224584688	-0.239376694	-0.084750054	-0.033180687
H4	0.276203106	0.073991624	-0.079664398	0.090176777
KP-N-SI9s	0.131929563	0.103308055	-0.070777485	0.054820044
SNU-1105	0.326841213	0.085167406	-0.070727659	0.11376032
C32	-0.163065606	0.056761213	-0.070252655	-0.05885235
COLO 741	-0.242386581	-0.255876859	-0.064776594	-0.187680011
COLO-783	-0.034895507	-0.115713981	-0.058608781	-0.069739423
Hs 683	0.288959109	0.07226015	-0.051902846	0.103105471
LOX IMVI	0.288476543	0.387372566	-0.049604263	0.208748282
GOS-3	-0.023521889	-0.417776885	-0.044031881	-0.161776885
SK-N-AS	0.376469835	0.264380327	-0.038499445	0.200783572
GCT	0.161856723	-0.068986899	-0.015770646	0.025699726
Hs 939.T	-0.008322876	0.350443375	-0.014147429	0.109324357
1321N1	0.354244008	0.289195908	-0.011499169	0.210646915
IPC-298	-0.148214832	0.043592736	-0.007556455	-0.03739285
COLO-849	-0.015912221	0.250225694	-0.004486434	0.076609013
SF-295	0.115274396	0.180740492	-0.002583673	0.097810405
MDA-MB-436	0.400143855	0.008135647	0.009015562	0.139098354
RKN	0.25161838	0.386798182	0.011691016	0.216702526
KMRC-1	0.040761949	-0.109429144	0.011833984	-0.018944404
KNS-81	0.209055895	-0.15185271	0.01598071	0.024394631
KALS-1	0.396633204	-0.159073876	0.016849903	0.084803077
KNS-60	0.494516291	0.138370012	0.01894922	0.217278508
A172	0.356922596	0.215032111	0.026124813	0.19935984
Malme-3M	-0.20386625	0.158152223	0.026986799	-0.006242409
A101D	-0.098904093	0.304914249	0.028955078	0.078321744
CAS-1	0.19198202	0.644338378	0.029239637	0.288520011
DK-MG	0.521071069	0.378153182	0.038672685	0.312632312

GAMG	0.201622434	-0.377772726	0.042138391	-0.044670634
COLO-800	-0.111449905	0.219737477	0.042483222	0.050256931
HuH28	0.192526094	-0.030939612	0.047740969	0.069775817
NMC-G1	0.411829529	-0.002827932	0.04793942	0.152313672
WM-793	0.051260376	0.014739309	0.048129256	0.03804298
U-87 MG	0.216003827	0.415345185	0.053367346	0.228238786
Daoy	0.257198928	0.129535958	0.057024574	0.14791982
COLO-679	-0.014030322	0.358450816	0.058275881	0.134232125
COLO-818	-0.103031667	0.067961916	0.05829518	0.00774181
RPMI-7951	0.488588228	0.200259007	0.066124833	0.251657356
AM-38	0.35638653	0.372118315	0.071013815	0.26650622
SK-MEL-28	0.080113182	0.345351142	0.072436875	0.165967066
SH-4	0.054342064	0.108037424	0.076183363	0.07952095
Hs 294T	-0.233853801	0.329266716	0.089262882	0.061558599
WM-88	-0.097309623	0.319080331	0.104648646	0.108806451
YH-13	0.451710121	0.13813274	0.105511339	0.231784734
SK-MEL-3	0.036016185	0.313705532	0.108113831	0.152611849
WM1799	0.005935186	-0.035153193	0.110966773	0.027249589
WM-266-4	-0.123160449	0.38158636	0.115034015	0.124486642
SW 1353	0.382551142	0.131035875	0.116327295	0.209971438
Hs 695T	-0.110754368	0.170739611	0.116614862	0.058866701
MDA-MB-435S	0.050213151	0.018911844	0.118114123	0.062413039
FTC-133	0.372809935	0.059584763	0.126745614	0.186380104
IGR-1	0.197624223	0.264778538	0.130234796	0.197545852
TM-31	0.545699346	0.150763051	0.133004241	0.276488879
NCI-H1792	0.435043481	-0.049400159	0.134738201	0.173460507
HD-MY-Z	0.404059931	0.358342134	0.136995884	0.299799316
SNU-387	0.468047939	0.264303172	0.138482848	0.290277986
DBTRG-05MG	0.3386855	0.582466364	0.147707804	0.356286556
GMS-10	0.275700189	0.109248001	0.148147013	0.177698401
SNU-626	0.265274417	0.063003076	0.149844473	0.159373989
SK-MES-1	0.155692509	-0.480376647	0.152314153	-0.057456662
GCIY	-0.013350652	0.237909587	0.15266228	0.125740405
MeWo	0.214229618	0.417979455	0.155651637	0.262620237
U-138 MG	0.496775126	0.359641593	0.15729371	0.337903476
NCI-H1299	0.253457443	0.427151397	0.16209573	0.280901523
SK-MEL-30	0.207979302	0.456392335	0.163816385	0.276062674
G-361	0.273713946	0.423528998	0.166468954	0.287903966
KNS-42	0.15326689	0.07407735	0.16732942	0.131557887
MDST8	0.366491481	0.360344668	0.16938863	0.298741593
GI-1	0.354442072	0.176050002	0.174431504	0.234974526
SK-LMS-1	0.362656612	0.768204723	0.176765192	0.435875509
SW 1783	0.431889011	0.271398593	0.180961829	0.294749811
Becker	0.077261356	0.303386661	0.182863739	0.187837252
COLO-699	0.012466158	-0.005464352	0.184120403	0.063707403
MHH-NB-11	0.539066952	0.487044778	0.185459656	0.403857129
SW 1088	0.335728293	0.374817646	0.195391986	0.301979308

MEL-HO	0.054964505	0.343415068	0.198002377	0.198793984
IGR-37	0.343672954	0.311265466	0.198163486	0.284367302
RD	0.021952203	0.361302775	0.200794851	0.194683276
Hs 742.T	0.365989003	0.77038711	0.205430736	0.44726895
IGR-39	0.638161646	0.267732697	0.209383122	0.371759155
NCI-H460	0.333198916	0.175366399	0.211348539	0.239971285
Hs 706.T	0.214282397	0.350291461	0.213023113	0.259198991
SNU-466	0.2674747	0.557624534	0.213320997	0.346140077
WM-983B	0.235112384	0.541924691	0.221145965	0.33272768
LU99	0.387759968	0.331296155	0.224483408	0.314513177
CCF-STTG1	0.295842395	0.212030507	0.225279102	0.244384002
COLO 792	0.246466167	0.641209581	0.226676197	0.371450648
SK-N-BE(2)	0.474913766	0.596347102	0.233703489	0.434988119
NCI-H1339	0.087531994	0.38390299	0.234297148	0.235244044
SNU-878	0.6805759	0.216313554	0.241330486	0.379406647
143B	0.454179987	0.120897842	0.242955351	0.272677727
Hs 852.T	0.366436905	0.554856064	0.243037857	0.388110275
huH-1	0.379425427	-0.110204775	0.24310761	0.170776087
LN-229	0.187205834	0.432862287	0.246239179	0.2887691
RKO	0.338055215	0.609699406	0.247583187	0.398445936
CHL-1	0.205763782	0.314117043	0.2500614	0.256647408
NCI-H1651	0.160812171	0.152447613	0.250392714	0.187884166
WM-115	-0.175412577	0.497663333	0.250609108	0.190953288
Hs 766T	0.247044474	0.145050979	0.253269354	0.215121602
NH-6	0.453629694	0.50216086	0.255587005	0.403792519
Hs 675.T	0.33607949	0.743410265	0.255813576	0.44510111
LMSU	0.272115599	0.735710796	0.256534654	0.421453683
MSTO-211H	0.425055725	0.580681369	0.256836622	0.420857905
JHH-2	0.215382389	0.340550899	0.256931947	0.270955078
B-CPAP	0.326094792	0.563634724	0.260150249	0.383293255
U-2 OS	0.2347249	0.233736635	0.261746643	0.243402726
SK-MEL-1	0.318348063	0.399310811	0.261826957	0.326495277
MPP 89	0.538320398	0.585438443	0.26480093	0.462853257
UM-UC-3	0.624529471	0.643830598	0.266709822	0.511689964
HLE	0.479045982	0.228193967	0.270406848	0.325882266
Hs 746T	0.469361275	0.857096006	0.270537949	0.532331743
HT-1080	0.415609811	0.231131923	0.271687769	0.306143168
SK-UT-1	0.551300778	0.389668838	0.272285314	0.40441831
Hs 618.T	0.476053964	0.894425336	0.273030545	0.547836615
NCI-H650	-0.046363345	0.272580086	0.275009404	0.167075382
ES-2	0.209812514	0.422278719	0.275148356	0.302413196
TUHR14TKB	0.40697594	-0.044063931	0.278254455	0.213722155
ESS-1	0.439211239	0.254160748	0.280221037	0.324531008
SNU-46	0.477962013	0.407456331	0.282580996	0.389333113
RERF-LC-MS	0.474042152	0.277680092	0.28982983	0.347184025
SF126	0.456132005	0.438167317	0.290111199	0.394803507
SH-10-TC	0.390726887	0.498518143	0.295866341	0.395037124

8-MG-BA	0.20645091	0.501376561	0.297697877	0.335175116
S-117	0.56221501	0.246110171	0.302665864	0.370330349
BT-549	0.59399652	0.030186724	0.30296985	0.309051031
SK-N-SH	0.523600622	0.552692362	0.303074585	0.45978919
SK-N-FI	0.391203411	0.543953347	0.305976859	0.413711206
SCC-25	0.615111537	0.251382667	0.31727254	0.394588914
KS-1	0.521181576	0.750055343	0.319001328	0.530079415
EN	0.016845973	-0.099105712	0.319721175	0.079153812
Hs 839.T	0.57711234	0.591084884	0.320851448	0.496349557
MG-63	0.639835309	0.170153869	0.324316478	0.378101885
HMCB	0.165603965	0.295631352	0.324721522	0.261985613
Hs 606.T	0.441665208	0.78511341	0.32644527	0.517741296
Hs 343.T	0.539620839	0.717138529	0.328663779	0.528474382
HLF-a	0.445604578	0.995924077	0.328975611	0.590168089
Hs 840.T	0.481895507	0.969861275	0.335157214	0.595637998
JHH-4	0.155845012	0.307710909	0.335889454	0.266481792
CHP-212	0.406391183	0.662436969	0.3372427	0.468690284
HGC-27	0.338872635	0.462703942	0.337523295	0.379699957
JHOM-1	0.326222066	0.490419338	0.337601695	0.3847477
Hey-A8	0.696035579	0.639909806	0.339192229	0.558379205
NCI-H196	0.291605362	0.585503255	0.342479808	0.406529475
A-498	0.339117528	0.084697598	0.342563482	0.255459536
T98G	0.25825758	0.544258517	0.343688218	0.382068105
ML-1	0.22318703	0.160291143	0.348234472	0.243904215
Hs 888.T	0.33900489	0.969877553	0.350021205	0.552967883
Hs 822.T	0.608734218	0.672822477	0.351749374	0.544435357
ONS-76	0.503125304	0.358686565	0.352729275	0.404847048
JMSU-1	0.59476091	0.755302946	0.352767707	0.567610521
LCLC-103H	0.723219655	0.278054531	0.353410605	0.451561597
JHOC-5	0.250031396	0.126321744	0.356287864	0.244213668
786-O	0.115531916	0.168849661	0.357048536	0.213810038
MDA-MB-157	0.163806932	0.529481464	0.357539554	0.350275983
BCP-1	0.613935376	0.782684969	0.357665803	0.584762049
G-292, clone A141B1	0.767555247	0.532072154	0.360657068	0.553428156
NCI-H1915	0.479102015	0.905715831	0.360905641	0.581907829
Hs 600.T	0.527961827	0.808827463	0.361016178	0.565935156
DMS 273	0.460505258	0.457889818	0.363613348	0.427336142
Hs 729	0.508332089	0.481108961	0.364216218	0.451219089
SK-LU-1	0.277184144	0.433016367	0.364511422	0.358237311
Hs 172.T	0.505252414	0.928691895	0.371774972	0.601906427
KYSE-520	0.425275811	0.282673419	0.372110599	0.360019943
NB-1	0.451416069	0.577352854	0.372455769	0.467074897
8305C	0.523266444	0.842847439	0.373682706	0.579932196
Caki-1	0.004658391	0.221659017	0.377425655	0.201247688
TO 175.T	0.533377841	0.730597522	0.379358616	0.547777993
CAL-78	0.33144161	0.406449955	0.381527818	0.373139795
SJRH30	0.321792947	0.583749374	0.382208714	0.429250345

NCI-H2052	0.68432228	0.520589359	0.384384815	0.529765485
Hs 934.T	0.635168866	0.613406925	0.384637587	0.544404459
AN3 CA	0.377955463	0.428220013	0.385475075	0.39721685
OUMS-27	0.578177445	0.497885703	0.386344379	0.487469175
KMRC-2	0.077195778	0.26998018	0.389744677	0.245640212
Hs 895.T	0.527545105	1.036126637	0.38979091	0.651154217
M059K	0.314530131	0.28389811	0.394799906	0.331076049
Hs 739.T	0.371825995	0.964040062	0.397433648	0.577766568
NCI-H716	0.402878887	0.757526586	0.399897621	0.520101031
SNU-423	0.828370259	0.548352464	0.402165362	0.592962695
KELLY	0.444080013	0.79881443	0.403979883	0.548958109
NCI-H2228	0.521297239	0.375994833	0.405941448	0.434411173
RH-41	0.390302494	0.630966467	0.406176922	0.475815295
BHT-101	-0.022498363	0.104490477	0.40729725	0.163096455
NCI-H524	0.367352531	0.556729151	0.407461578	0.443847753
Hs 688(A).T	0.512935328	0.831008962	0.407568282	0.583837524
JHH-6	0.749979371	0.354788003	0.411865614	0.50554433
LN-18	0.29109867	0.66489422	0.413317405	0.456436765
42-MG-BA	0.378267732	0.674794735	0.413941039	0.489001168
NCI-H2227	0.456405545	0.551720803	0.416674857	0.474933735
MFE-296	0.286318375	0.362647162	0.422790062	0.357251866
COV504	0.685888941	0.599987127	0.425299563	0.570391877
Hs 281.T	0.576119484	0.933716754	0.427994618	0.645943619
NCI-H2405	0.124428878	0.121305347	0.428260619	0.224664948
MDA-MB-361	0.987271422	0.252679701	0.428787258	0.556246127
JHUEM-2	0.348665219	0.742973919	0.430674537	0.507437892
NCI-H28	0.397355014	0.71398044	0.433394261	0.514909905
HARA	0.603067464	0.412589232	0.433474686	0.483043794
CJM	0.645222896	0.420760094	0.433956358	0.499979783
KP4	0.46479526	0.378528926	0.434445139	0.425923108
A-204	0.233597047	0.388263314	0.434636728	0.352165696
SIMA	0.522577029	0.838658551	0.435578844	0.598938142
COV318	0.579405846	0.496619611	0.439275522	0.505100326
TUHR10TKB	0.171463275	0.063794668	0.440840872	0.225366272
CGTH-W-1	0.355586652	1.036038295	0.44257328	0.611399409
IMR-32	0.435824545	0.511747827	0.442912529	0.463494967
D283 Med	0.316977182	0.297930162	0.443156988	0.352688111
RERF-LC-Sq1	0.593080151	0.190311139	0.446180966	0.409857419
NCI-H1755	0.69499222	0.592046437	0.446521025	0.577853227
SNU-475	0.324058509	0.516061988	0.448810665	0.429643721
HCC1395	0.574610424	0.741913807	0.449895458	0.588806563
ACHN	0.415988652	0.251932917	0.450568459	0.372830009
NCI-H1694	0.394251169	0.520886076	0.453582652	0.456239966
COLO-320	0.441020913	0.789439955	0.459227152	0.56322934
NCI-H1341	0.534548689	0.547335972	0.46118912	0.514357927
SH-SY5Y	0.472231499	0.638803817	0.462255375	0.52443023
NCI-H1155	0.296098992	0.568031762	0.463614324	0.442581693

TOV-21G	-0.061738976	0.660243507	0.46503577	0.354513433
SK-N-DZ	0.432340531	0.626547742	0.467261612	0.508716628
KP-N-YN	0.347213722	0.576250081	0.467316063	0.463593289
KP-N-RT-BM-1	0.490608045	0.633812746	0.47015749	0.531526094
BFTC-909	0.555946744	0.795092535	0.471844016	0.607627765
Hs 604.T	0.654528062	0.890860808	0.472173467	0.672520779
OPM-2	0.275059318	0.689393469	0.472711499	0.479054762
SNU-398	0.473031232	0.717387453	0.474235057	0.554884581
T1-73	0.42887933	0.904000628	0.477163962	0.603347973
NCI-H446	0.767208405	0.588510369	0.477164052	0.610960942
QGP-1	0.782517808	-0.033873713	0.477764136	0.408802744
OV56	0.147342522	0.392088867	0.47916539	0.33953226
NCI-H1184	0.380187546	0.558098763	0.480667709	0.472984673
NCI-H661	0.045463526	0.73649478	0.48203363	0.421330646
EJM	0.438351765	0.761713727	0.4832609	0.561108797
KMRC-3	0.296964432	0.351233928	0.483429283	0.377209214
PC-3	0.835406266	0.328257173	0.487738881	0.55046744
639-V	0.647245066	0.409855849	0.487865931	0.514988949
VMRC-RCZ	0.331913136	0.181764633	0.488277776	0.333985182
HCC-366	0.475090377	0.332752928	0.488344372	0.432062559
SNU-1077	0.527575709	0.287117396	0.489858169	0.434850425
HLF	0.556028175	0.38905805	0.490243201	0.478443142
TOV-112D	0.39851622	0.787542381	0.490934324	0.558997642
KYSE-70	0.679852023	0.472689447	0.491161759	0.547901076
BICR 16	0.705531108	0.243912668	0.491720443	0.480388073
SKM-1	0.411171067	0.745640631	0.491868506	0.549560068
Hs 229.T	0.53821058	1.023294871	0.496262129	0.685922527
BC-3C	0.55371768	0.338446989	0.498060071	0.463408246
TUHR4TKB	0.226446323	0.30422008	0.501670267	0.344112223
SW-1710	0.342375464	0.170121585	0.502989799	0.338495616
Hs 870.T	0.478900211	0.819990209	0.504045629	0.600978683
SK-N-MC	0.478126207	0.704199923	0.50416866	0.56216493
HCC1569	0.54092177	0.634242316	0.504296747	0.559820278
PLC/PRF/5	0.214753182	0.218067568	0.505292893	0.312704548
Li-7	0.458913065	0.243557962	0.509065193	0.403845407
NCI-H1581	0.17969238	0.348045741	0.509268758	0.34566896
MHH-ES-1	0.626106008	0.762895943	0.509940048	0.632980667
CHP-126	0.587085842	0.726674487	0.510599962	0.608120097
PSN1	0.330165092	0.189920913	0.51403166	0.344705888
Alexander cells	0.258417706	0.164961363	0.515044698	0.312807922
SK-ES-1	0.484359765	0.659170367	0.516181758	0.553237297
Hs 819.T	0.761710612	0.902010119	0.518165282	0.727295337
PE/CA-PJ49	0.540448876	0.474664948	0.518532894	0.511215573
Calu-6	0.09915363	0.473927293	0.519050955	0.364043959
NCI-H1703	0.219359923	0.23262475	0.522021373	0.324668682
OV7	0.579652036	0.649937216	0.523978865	0.584522706
SNU-5	0.035107221	0.157254774	0.524585784	0.238982593

NCI-H2452		0.573844397	0.694628587	0.532645837	0.60037294
NCI-H520		0.287634521	0.078405154	0.533661341	0.299900339
NCI-H522		0.277567083	0.744924865	0.534471098	0.518987682
MIA PaCa-2		0.143305857	0.327217635	0.535182909	0.335235467
Hs 737.T		0.586017669	0.931749841	0.535979406	0.684582305
OCI-AML3		0.279781765	0.859448813	0.537254378	0.558828319
ECC10		0.590668881	0.6921606	0.537716365	0.606848615
NCI-H841		0.400320636	0.759674085	0.54015082	0.566715181
KP-3		0.154405339	0.472281181	0.540192709	0.388959743
TT		0.65771234	0.266519629	0.541362085	0.488531351
YD-15		0.778370325	0.605547773	0.541648362	0.641855486
NCI-H23		0.408727923	0.926877808	0.542531757	0.62604583
OAW42		0.230472436	0.64427119	0.544259728	0.473001118
OV-90		0.471825349	0.730542879	0.546535893	0.58296804
LC-1/sq-SF		0.546134806	0.485609112	0.547869855	0.526537925
NCI-H82		0.538517986	0.555020073	0.54877735	0.54743847
DMS 114		0.472161983	0.85086747	0.54895923	0.623996228
CAL-54		0.31428584	0.57591008	0.551589852	0.480595257
JVM-2		0.488263846	0.808530789	0.553051234	0.616615289
KYSE-140		0.72008966	0.307033941	0.553366038	0.52682988
TT2609-C02		0.327767003	0.867167294	0.554016783	0.582983694
A3/KAW		0.51324679	0.772592067	0.557995805	0.614611554
KYO-1		0.402980579	0.467516123	0.558055646	0.476184116
A2780		0.395559607	0.698343374	0.558549029	0.550817337
OCI-AML5		0.406790479	0.898976901	0.558590566	0.621452648
NCI-H2066		0.507300738	0.730991049	0.559008734	0.599100174
JIMT-1		0.806924158	0.226563255	0.559145017	0.530877477
SCaBER		0.585838312	0.488411076	0.559393878	0.544547755
DAN-G		0.460764407	-0.110834671	0.559606107	0.303178614
Hs 578T		0.727914343	0.742600931	0.559752937	0.67675607
KHM-1B		0.406037815	0.887628629	0.56002323	0.617896558
HL-60		0.62365674	0.732646691	0.560820972	0.639041468
VMRC-RCW		0.729713744	0.57230675	0.561921208	0.621313901
LK-2		0.442445515	0.236775269	0.562081078	0.413767287
SJSA-1		0.399664723	0.828286829	0.562593296	0.596848283
	697	0.461488961	0.657032586	0.563057848	0.560526465
GSS		0.495375241	0.39107269	0.563964726	0.483470886
U266B1		0.411910206	0.763686295	0.564132792	0.579909764
NCI-H1930		0.518076607	0.699241998	0.565575322	0.594297976
SNU-182		0.35187411	0.864656552	0.566835362	0.594455341
HEC-50B		-0.061333655	0.366279771	0.566969451	0.290638522
BDCM		0.57799664	0.923602277	0.56725603	0.689618316
P3HR-1		0.545877695	0.822152964	0.567572603	0.645201087
COLO-704		0.622523237	0.638980229	0.569085856	0.610196441
CPC-N		0.645529361	0.616273118	0.569646408	0.610482962
NCI-H1963		0.437550943	0.425260252	0.571810764	0.47820732
U-937		0.474661774	0.926206996	0.571839991	0.657569587

D341 Med		0.566058117	0.756765733	0.572205007	0.631676286
A-704		0.200733884	0.383502076	0.572235743	0.385490568
Raji		0.468272844	0.834741584	0.573327126	0.625447185
KMS-34		0.526560314	0.859685113	0.574313794	0.65351974
HCC-33		0.48330093	0.561819487	0.574435541	0.539851986
SNU-449		0.592078846	0.248475905	0.575080747	0.471878499
K-562		0.607062319	0.521121301	0.575347051	0.567843557
KMRC-20		0.496083815	0.792713959	0.575443513	0.621413763
G-402		0.503803627	0.958005349	0.57571116	0.679173379
SNU-410		0.517689793	0.615823446	0.577916362	0.570476534
TYK-nu		0.248698436	0.728262539	0.578644838	0.518535271
SBC-5		0.327683748	0.843891541	0.580291993	0.583955761
SEM		0.445540841	0.824581433	0.580331135	0.616817803
KASUMI-1		0.426766111	0.899006521	0.581854054	0.635875562
CAL-120		0.560681777	0.553514689	0.583098902	0.565765123
PL-21		0.42047423	0.882005108	0.583272889	0.628584076
PANC-1		0.137006977	0.16447133	0.583592027	0.295023444
IA-LM		0.157275404	0.53523347	0.583806559	0.425438478
SUP-T1		0.666017018	0.853167836	0.583856921	0.701013925
RPMI 6666		0.494505973	0.84220554	0.583926182	0.640212565
KLE		0.479938603	0.619924328	0.584215616	0.561359516
	5637	0.766062367	0.583633304	0.584808263	0.644834645
PCM6		0.286705941	0.949682085	0.585821089	0.607403038
YD-10B		0.609058826	0.573592619	0.586130217	0.589593887
Hs 698.T		0.693078622	1.204979318	0.586828896	0.828295612
NCI-H929		0.488890708	0.863372887	0.586831938	0.646365178
769-P		0.228451868	0.310989005	0.58735159	0.375597487
HuH-7		0.418063048	0.98856166	0.587958721	0.664861143
BL-41		0.374717044	0.908485333	0.588573143	0.623925174
SCLC-21H		0.637738712	0.613371766	0.588802932	0.61330447
PE/CA-PJ41 (clone D2)		0.751409351	0.525966967	0.589294975	0.622223764
Hs 863.T		0.787071997	0.932646508	0.592172253	0.770630253
MC116		0.443817464	0.866761457	0.593934854	0.634837925
YD-8		0.525748722	0.482842101	0.593972929	0.534187918
KMS-20		0.201337028	0.661279191	0.594488442	0.485701554
JURL-MK1		0.37204886	0.716661765	0.596264494	0.561658373
OVTOKO		0.016459282	0.555727874	0.59647477	0.389553975
ST486		0.446573938	0.856444368	0.597512875	0.633510394
RERF-GC-1B		0.447261697	0.765052735	0.597849466	0.603387966
L-363		0.440108348	0.98742426	0.598111861	0.675214823
SUIT-2		0.23237531	0.143661349	0.59890902	0.324981893
SK-MM-2		0.276963286	0.804823416	0.600445799	0.560744167
OCI-LY3		0.405745066	0.786831136	0.601043994	0.597873399
SW 1573		0.454566269	0.525078827	0.60108639	0.526910495
THP-1		0.489734394	0.646890663	0.601134072	0.579253043
FU-OV-1		0.603766937	0.405216532	0.602766618	0.537250029
JM1		0.430041967	0.844345228	0.603519664	0.625968953

GA-10	0.438435637	0.884130708	0.604369676	0.642312007
Toledo	0.392985727	0.889877917	0.605057452	0.629307032
SHP-77	0.62531811	0.639384047	0.605120178	0.623274112
NCI-H211	0.643673409	0.467774958	0.6069083	0.572785556
RCC10RGB	0.687261665	0.553575079	0.607817425	0.616218056
Daudi	0.600834719	0.858360912	0.607947906	0.689047845
KMS-28BM	0.433528967	0.861913766	0.608831977	0.634758237
Caki-2	0.226784661	0.737845337	0.608875707	0.524501902
EFO-21	0.309212612	0.605279402	0.610014002	0.508168672
LP-1	0.516162476	0.960629784	0.610505877	0.695766046
BL-70	0.481510994	0.897876269	0.611384812	0.663590692
Hs 751.T	0.67214788	1.107462145	0.611426218	0.797012081
SU-DHL-8	0.409989305	0.778568353	0.612347938	0.600301865
CAL-85-1	0.582318218	0.167653962	0.612782342	0.454251508
HSC-2	0.615984789	0.731733841	0.612888106	0.653535579
JeKo-1	0.37418927	0.9210335	0.613080412	0.636101061
DND-41	0.455039957	0.933416044	0.613555687	0.667337229
Loucy	0.376612196	0.994620389	0.613960897	0.661731161
COV434	0.426229874	0.978406318	0.614233446	0.672956546
NCI-H2171	0.53156035	0.53788085	0.616550316	0.561997172
FU97	0.435531811	0.809185217	0.616789203	0.620502077
RI-1	0.414363927	0.912053521	0.617133274	0.647850241
MEC-1	0.441421998	0.948111163	0.617146434	0.668893198
SNU-1214	0.610362179	0.645781329	0.617733386	0.624625631
SNU-1272	0.398412433	0.57737216	0.617832867	0.53120582
MOLT-16	0.498690073	0.813372331	0.618212672	0.643425025
Hs 821.T	0.608465164	1.004622987	0.618308975	0.743799042
Reh	0.437106521	0.940478203	0.618412211	0.665332312
OC 314	0.506929538	0.83956517	0.619077371	0.655190693
NCI-H1734	0.479695575	0.668858362	0.619106414	0.589220117
RPMI-8402	0.355844181	0.915062075	0.619150128	0.630018795
JHH-7	0.48351841	0.77211771	0.620074198	0.625236773
OVK18	0.541844952	0.592542082	0.620544466	0.584977167
EB1	0.36999393	0.896972149	0.62072364	0.629229906
KMS-27	0.471704997	1.044422683	0.621184995	0.712437558
SNU-1	0.298334511	0.678975032	0.621785081	0.533031542
HT	0.491514445	0.889376786	0.622177658	0.667689629
KYM-1	0.039994242	0.885897766	0.622422839	0.516104949
TE 441.T	0.357718985	0.98291838	0.622451148	0.654362838
SUP-B15	0.434665166	0.955071434	0.622914072	0.670883557
TE-11	0.829762639	0.529856478	0.622993477	0.660870865
L-1236	0.541184301	0.533258339	0.623267637	0.565903426
CA46	0.415345965	0.87864024	0.624367296	0.639451167
SW 1271	0.749858076	0.860070624	0.62458441	0.744837703
NALM-6	0.39883371	0.923364389	0.625325356	0.649174485
IST-MES2	0.928886407	0.654796809	0.625376499	0.736353238
MFE-319	0.428372989	0.661374932	0.625841021	0.571862981

MONO-MAC-6	0.458928436	0.780526794	0.625874312	0.621776514
OCI-AML2	0.38652552	0.968040525	0.628390095	0.66098538
Hs 616.T	0.703234959	1.051818615	0.628574097	0.794542557
SU-DHL-6	0.541566183	0.88396262	0.629052825	0.684860542
NCI-H1105	0.474402152	0.567442613	0.629255832	0.557033532
NCI-H1563	0.381348124	0.86056611	0.630272171	0.624062135
NB-4	0.476826847	0.709491252	0.630729525	0.605682542
NCI-H1048	0.755469423	0.582576049	0.630829616	0.656291696
SUP-HD1	0.606056703	0.680919588	0.630878342	0.639284878
KMS-26	0.467807544	1.151409006	0.631002678	0.750073076
MOLT-13	0.462362765	0.88556979	0.631317421	0.659749992
EFE-184	0.780940312	0.611239121	0.631395797	0.674525077
AsPC-1	0.329118019	0.319767071	0.631599437	0.426828176
SNU-503	0.697828701	0.343829651	0.631764044	0.557807466
Hs 274.T	0.775435474	1.22577601	0.631811722	0.877674402
EPLC-272H	0.822691344	0.618487198	0.631981895	0.691053479
HEC-59	0.501050002	0.529771269	0.632361688	0.55439432
BV-173	0.294613822	1.116520164	0.633022355	0.681385447
SCC-9	0.664074119	0.772002548	0.634274592	0.690117086
HPB-ALL	0.499652481	0.81372316	0.634358422	0.649244688
NUGC-2	1.038210934	0.51248872	0.634974772	0.728558142
TE-8	0.488110759	0.734656515	0.636860847	0.61987604
CML-T1	0.337764837	0.875868873	0.6372611	0.616964937
SU-DHL-10	0.604246189	0.906603986	0.637523098	0.716124424
HCC1937	0.465754626	-0.090238868	0.638543933	0.338019897
NCI-H2172	0.68505687	0.847834206	0.638782862	0.723891313
SU-DHL-5	0.54882491	0.966378572	0.639303421	0.718168968
KYSE-270	0.686739462	0.72816299	0.640536217	0.685146223
MHH-CALL-2	0.407711744	0.81425295	0.641394882	0.621119859
A4/Fuk	0.524821169	0.86349585	0.642128166	0.676815062
BICR 18	0.69549808	0.477316609	0.642449935	0.605088208
RS4;11	0.457674544	0.915741198	0.642746389	0.672054044
Panc 02.13	1.039772103	0.585095834	0.64297213	0.755946689
REC-1	0.494342584	0.866710545	0.643042278	0.668031802
PEER	0.456003538	0.860451981	0.643138823	0.653198114
EB2	0.470648893	0.873057966	0.643324098	0.662343652
EHEB	0.603364732	0.837591962	0.643893223	0.694949972
SNU-738	0.717374309	0.826775728	0.644949053	0.729699697
OUMS-23	0.435311087	0.559626508	0.64510899	0.546682195
G-401	0.236047215	0.724248876	0.645199513	0.535165202
IGROV1	0.465527243	0.883280427	0.645423368	0.664743679
MOLP-8	0.313490126	1.15876535	0.645767764	0.706007746
HCC1187	0.683288019	0.413110137	0.646800097	0.581066084
J82	0.489239441	0.723764044	0.647731147	0.620244877
TE 617.T	0.382422699	0.95203926	0.647888532	0.660783497
8505C	0.751159372	0.936916571	0.64800303	0.778692991
NCI-H1666	0.757714012	0.742548255	0.648335989	0.716199419

SCC-4	0.846689472	0.730574753	0.649365331	0.742209852
SIG-M5	0.349607032	1.001067147	0.649564234	0.666746138
P12-ICHIKAWA	0.486865742	0.855136877	0.650019508	0.664007376
JURKAT	0.513936433	0.769821695	0.650189874	0.644649334
NALM-1	0.299764874	0.937872824	0.650278134	0.629305277
EC-GI-10	0.68139615	0.612902041	0.650343059	0.64821375
KM-H2	0.4553962	0.772204415	0.651127133	0.626242583
BHY	0.725931425	0.685291527	0.651266052	0.687496334
SNU-761	0.813541023	0.707944302	0.651574425	0.72435325
MONO-MAC-1	0.481418307	0.856435753	0.652686333	0.663513464
NCI-H69	0.783152334	0.729370286	0.652711922	0.721744848
KMS-12-BM	0.299549833	0.893282718	0.652761035	0.615197862
RL	0.549314984	0.969444942	0.652816547	0.723858824
ECC12	0.782838568	0.770295385	0.653954392	0.735696115
NCI-H838	0.507466115	0.708547745	0.654020561	0.623344807
PF-382	0.464495048	0.84940259	0.654423425	0.656107021
JL-1	0.883796526	0.738076236	0.65519967	0.759024144
OVMANA	0.195878292	0.288168478	0.65543991	0.379828893
T84	0.885935248	0.563225739	0.655462677	0.701541222
Hs 940.T	0.83509422	1.133987801	0.6555319	0.874871307
SW579	0.834264402	1.071396829	0.655731429	0.853797553
RCH-ACV	0.390647885	0.858810523	0.655876207	0.635111538
NCI-H1436	0.583565196	0.696718458	0.656195172	0.645492942
MEG-01	0.599001911	0.640046731	0.656583878	0.631877507
DB	0.555231972	0.930427759	0.656704063	0.714121265
RD-ES	0.53138171	0.897658527	0.657157126	0.695399121
SK-HEP-1	0.680588228	0.731840307	0.657630057	0.69001953
NU-DUL-1	0.56455801	0.914072518	0.660378806	0.713003112
Set-2	0.44283783	0.739787287	0.661075864	0.614566993
A-673	0.745061135	1.084636882	0.661131799	0.830276605
SUP-M2	0.455484889	0.981004142	0.661446163	0.699311732
HuNS1	0.519131787	1.129188226	0.661486292	0.769935435
MHH-CALL-3	0.404412191	0.949460585	0.662180153	0.672017643
JVM-3	0.39439911	0.996677545	0.662344003	0.684473553
KE-37	0.544010325	0.888775921	0.662449612	0.698411952
COR-L311	0.563819518	0.500969702	0.662698279	0.575829166
JHUEM-3	0.4843208	0.614762054	0.6627948	0.587292551
T24	0.796668919	0.901957753	0.663364591	0.787330421
HCC-2279	0.519777316	0.321083631	0.663567727	0.501476225
NCI-H2009	0.743113815	0.641753663	0.664755488	0.683207655
HOS	0.689729556	0.89321586	0.665734222	0.749559879
MHH-CALL-4	0.405803325	0.901691891	0.667059389	0.658184868
MM1-S	0.529583713	0.900191478	0.6673288	0.699034664
Pfeiffer	0.45702161	0.873781277	0.667483624	0.666095504
AZ-521	0.361939026	1.013341626	0.667540353	0.680940335
CAL 27	0.582081242	0.48338435	0.667994252	0.577819948
CI-1	0.524334737	1.02561747	0.66809159	0.739347932

HSC-3	0.674551008	0.903061755	0.668289327	0.74863403
MOLM-16	0.414094274	0.783538167	0.668510862	0.622047767
Mino	0.496351702	1.001427098	0.669338993	0.722372598
RERF-LC-AI	0.665485727	0.613834764	0.669718971	0.649679821
CAL-51	0.420150571	0.586072134	0.670446918	0.558889874
NCI-H1618	0.592203603	0.730175218	0.670653958	0.66434426
KARPAS-620	0.412081834	0.830896012	0.671742159	0.638240002
MFE-280	0.452990006	0.817469387	0.673463157	0.647974183
MEC-2	0.459544248	0.965632053	0.673796668	0.699657656
A-253	0.573317232	0.7521324	0.673890405	0.666446679
NCI-H1876	0.63439364	0.836280914	0.676191198	0.715621917
F-36P	0.378902646	0.752555541	0.677002648	0.602820279
M-07e	0.470040677	0.761624818	0.678072168	0.636579221
OC 316	0.507821383	1.027976756	0.678088945	0.737962361
DOHH-2	0.480290175	1.102281427	0.678438017	0.753669873
VCaP	0.826830544	0.683355785	0.679114667	0.729766998
NCI-H2081	0.70332357	0.612533394	0.679490034	0.665115666
TC-71	0.626472545	1.044610656	0.680272982	0.783785394
KNS-62	0.497643779	0.726245509	0.681361044	0.635083444
NCI-H1092	0.631337659	0.756257062	0.681941081	0.689845267
COR-L24	0.82213735	0.592156781	0.682718047	0.69900406
NCI-H647	0.73346199	0.937831698	0.682857534	0.784717074
MDA PCa 2b	0.591170427	0.543925935	0.683743081	0.606279814
HDLM-2	0.672232963	0.744064146	0.684259411	0.700185507
SCC-15	0.754804431	0.63940812	0.684380815	0.692864455
NCI-H1385	0.515136164	0.500388366	0.684501266	0.566675265
SNU-C2A	0.679646756	0.173259242	0.685060209	0.512655402
NCI-H2106	0.566330669	0.693847368	0.685082148	0.648420062
NOMO-1	0.250798386	1.03757245	0.685243081	0.657871305
Hs 611.T	0.387928771	1.049184906	0.685339463	0.70748438
NCI-H2030	0.524188785	0.908978663	0.685609869	0.706259106
SW1417	0.433649169	0.399371668	0.686074864	0.506365234
MOTN-1	0.709865526	0.887573489	0.686118592	0.761185869
SW1116	0.820945946	0.703237147	0.687031109	0.737071401
SW837	0.700416295	0.45721991	0.687948455	0.615194887
SU-DHL-4	0.580143628	1.167193535	0.688685654	0.812007606
BICR 56	0.73799087	0.565462364	0.688744996	0.664066077
HuCCT1	0.610407507	0.205956833	0.689055725	0.501806688
HPAF-II	0.622976535	0.382065624	0.689949342	0.564997167
MJ	0.565433533	0.643571876	0.690478087	0.633161165
22Rv1	0.712577904	0.732810259	0.691443444	0.712277202
COV362	0.770154085	0.621825375	0.69174432	0.694574593
MOLP-2	0.228578722	0.969314272	0.691927458	0.629940151
HSC-4	0.80643602	0.531735907	0.691994619	0.676722182
Calu-1	0.928371884	1.031068883	0.693631996	0.884357588
TF-1	0.418144596	0.682702475	0.693927349	0.59825814
OVSAHO	0.721277994	0.554433532	0.694001053	0.65657086

CMK	0.533902184	0.81874503	0.694064233	0.682237149
MKN1	0.665996519	0.615082763	0.694674136	0.658584473
KYSE-450	0.736961372	0.636797909	0.695712216	0.689823833
HuTu 80	0.478047215	1.049056757	0.695832884	0.740978952
MV-4-11	0.465878921	0.921076468	0.696122334	0.694359241
NCI-H1944	0.376853633	0.56975594	0.697405609	0.548005061
NCI-H1373	0.6626025	0.707757074	0.697757298	0.689372291
HCT 116	0.573565065	0.517199418	0.698117664	0.596294049
KU812	0.451213788	0.779866853	0.698927788	0.643336143
MOLT-4	0.612002233	0.901917601	0.699681283	0.737867039
IST-MES1	0.975250934	0.837664584	0.699712643	0.83754272
PE/CA-PJ34 (clone C12)	0.771859285	0.649265361	0.700060011	0.707061552
HDQ-P1	0.727858761	0.4035325	0.70177379	0.611055017
TALL-1	0.510763142	1.088856583	0.7023291	0.767316275
Hep 3B2.1-7	0.561250644	0.933133703	0.703994012	0.732792786
MDA-MB-415	0.889064092	0.438002073	0.704141512	0.677069226
C3A	0.627408874	0.763009103	0.704194957	0.698204311
HuH-6	0.660625622	0.838856122	0.70429634	0.734592695
OCI-LY-19	0.422755788	1.098730955	0.704879987	0.742122243
SNU-1076	0.653132629	0.622828424	0.705826197	0.66059575
MDA-MB-231	0.750892148	1.076987788	0.706245672	0.844708536
Ki-JK	0.39263488	1.137026559	0.706798375	0.745486605
JHH-5	0.495372144	0.779655252	0.707687561	0.660904986
KMS-21BM	0.314094284	1.185410019	0.708476309	0.735993537
BICR 31	0.603746235	0.598752663	0.708555045	0.637017981
BICR 22	0.782768841	0.590166899	0.708745725	0.693893821
EFO-27	0.597348035	0.663545546	0.708837003	0.656576862
NCI-H889	0.4864748	0.547258427	0.70942815	0.581053792
DU4475	0.291854581	0.610540777	0.709637226	0.537344195
COR-L47	0.580145304	0.738478769	0.709843092	0.676155722
L-540	0.430194883	1.021797569	0.709921177	0.720637876
KE-97	0.602853317	1.137340022	0.710073911	0.81675575
KARPAS-299	0.466431145	0.989579219	0.710846957	0.722285773
JK-1	0.447741522	0.853072414	0.711997864	0.670937267
HUP-T3	0.8115629	0.637470155	0.712675943	0.720569666
NCI-H2141	0.721193816	0.620456761	0.714332644	0.68532774
HH	0.837755916	0.809090016	0.714616958	0.787154297
Caov-3	0.763133674	0.556250847	0.714642549	0.678009023
UT-7	0.400889877	0.818787096	0.715577291	0.645084755
P31/FUJ	0.526583089	1.000277755	0.716836405	0.747899083
NCO2	0.441256513	0.849826507	0.717958864	0.669680628
PK-45H	0.997712345	0.654719208	0.718385137	0.79027223
Hep G2	0.647018475	0.890634846	0.71875852	0.75213728
NCI-H1975	0.614149738	0.295334389	0.719180737	0.542888288
TCC-PAN2	0.434863348	0.890798642	0.719274076	0.681645356
SR-786	0.467555872	1.110202439	0.721421429	0.766393247
FaDu	0.816377565	0.535223874	0.721812815	0.691138085

SK-OV-3	0.752036838	0.667612818	0.723495447	0.714381701
HuT 78	0.453642082	0.791965147	0.724107541	0.65657159
HuT 102	0.615302464	0.974243311	0.725353263	0.771633013
KCL-22	0.371485765	0.850391962	0.72554005	0.649139259
DEL	0.317671245	1.205665791	0.725540408	0.749625815
MUTZ-5	0.473726472	1.062622186	0.726051315	0.754133324
COR-L88	0.695643228	0.618448224	0.726490273	0.680193908
MOLM-6	0.576764947	0.817454639	0.727418334	0.70721264
HCC1143	0.737776298	0.607566309	0.72827399	0.691205532
KMM-1	0.505035527	1.14846446	0.728747765	0.794082584
SNG-M	0.24350806	0.510512364	0.729628974	0.494549799
NCI-H2085	0.858051294	0.840632607	0.730381805	0.809688569
OVCAR-8	0.801190308	0.794769928	0.730901106	0.775620447
WSU-DLCL2	0.644009531	1.111473744	0.731292617	0.828925297
KMS-11	0.685375567	1.115659034	0.732015782	0.844350128
NCI-H1793	0.844367656	0.650753934	0.732082873	0.742401488
RPMI 8226	0.791233041	1.047219259	0.732986833	0.857146377
RCM-1	0.899287653	0.669745208	0.73430014	0.767777667
NCI-H596	0.656264575	0.545077693	0.734868566	0.645403611
LUDLU-1	0.827744055	0.574377397	0.734884651	0.712335368
RMG-I	0.660041287	0.859871178	0.735292565	0.75173501
KASUMI-2	0.367746962	0.942360451	0.736129699	0.682079037
OCI-M1	0.49842441	0.869241959	0.736928946	0.701531772
KYSE-180	0.752805439	0.664366188	0.73725886	0.718143496
HCC-95	0.936254861	0.509792141	0.737773594	0.727940199
HCC1428	0.830111719	0.514370106	0.73813821	0.694206678
HEL 92.1.7	0.491165568	0.743681084	0.739757072	0.658201241
SNU-1079	0.474020543	0.417159714	0.739873565	0.543684607
NALM-19	0.450278181	1.027995614	0.740274371	0.739516055
SUP-T11	0.536535831	1.077696034	0.740982301	0.785071388
KG-1	0.521264328	0.874488295	0.741581189	0.712444604
MOLM-13	0.471361645	1.015276001	0.74217833	0.742938659
CAL-62	0.574959141	0.735369475	0.744314425	0.684881014
HCC827	0.732037494	0.219664627	0.745987244	0.565896455
LoVo	0.766497749	0.741518683	0.746485585	0.751500672
TE-14	0.794186108	0.68393171	0.746756323	0.741624714
GRANTA-519	0.378145549	1.190357496	0.746971395	0.771824814
MDA-MB-468	0.560486005	0.383416424	0.748096058	0.563999496
CL-11	0.750516325	0.490235777	0.748473141	0.663075081
MCF7	0.682075498	0.659413233	0.748831266	0.696773332
SW 1990	0.42431022	0.657301916	0.750273533	0.610628557
NCI-H526	0.636121535	0.62974308	0.750287493	0.672050702
HCC1806	0.748900277	0.592623951	0.752216852	0.697913693
KPL-1	0.781347197	0.557527364	0.752347389	0.697073983
HEL	0.464363711	0.785026216	0.753173538	0.667521155
EOL-1	0.486694777	1.111548263	0.753506411	0.783916484
PA-TU-8988T	0.752800888	0.90099429	0.753995673	0.802596951

CMK-11-5	0.476242125	0.950630979	0.755240236	0.727371113
TE-15	0.888089251	0.664339118	0.756628913	0.769685761
HCC-44	0.527014587	0.734866223	0.756934508	0.672938439
HCC38	0.965650926	0.607237585	0.757045942	0.776644818
C2BBe1	0.938445686	0.990715181	0.757257913	0.895472927
COR-L95	0.691930138	0.69908006	0.758079856	0.716363351
ACC-MESO-1	0.876988689	0.721391508	0.758369875	0.785583357
NCI-H2029	0.790258635	0.578213584	0.758580874	0.709017698
AMO-1	0.476337938	1.078058578	0.759994652	0.771463723
Panc 02.03	0.621867845	0.162883538	0.761112775	0.515288053
Ishikawa (Heraklio) 02 ER-	0.766417911	0.731003291	0.761540046	0.752987083
LAMA-84	0.495922547	0.867749546	0.7617275	0.708466531
SNU-216	0.748736577	0.503396063	0.7623167	0.671483113
KO52	0.601707989	0.907284592	0.762677744	0.757223442
BFTC-905	0.816206171	0.661560341	0.763811105	0.747192539
NCI-H2286	0.782429785	0.826170681	0.764086948	0.790895804
HEC-1-B	0.463577244	0.87623575	0.764244586	0.701352526
TE-9	0.956257357	0.480994236	0.765273479	0.734175024
PE/CA-PJ15	0.896056527	0.495055201	0.765537153	0.71888296
JHH-1	0.531050162	1.073787132	0.765774233	0.790203843
LXF-289	0.67254688	0.895281056	0.76584256	0.777890165
Kasumi-6	0.606777026	0.811744873	0.76588483	0.728135576
RT-112	1.091931448	0.476590327	0.767731452	0.778751076
BT-20	0.777623447	0.462285866	0.767735939	0.669215084
YD-38	0.887532071	0.585507274	0.768580121	0.747206489
CAL-29	1.031908895	0.498286299	0.769019481	0.766404892
TE-6	0.773127006	0.761838664	0.769982525	0.768316065
NCI-H660	0.770409469	0.635128691	0.770688094	0.725408751
HT-1376	0.762118283	0.634762012	0.770705547	0.722528614
NUGC-3	0.78114545	0.792773175	0.771636506	0.78185171
TE-5	0.759906878	0.602696171	0.772722213	0.711775087
HCC4006	0.67769073	0.34153349	0.773054262	0.597426161
L-428	0.730038221	0.833123649	0.773110575	0.778757482
KOPN-8	0.504117127	0.997015614	0.775395879	0.758842873
T-47D	0.811269113	0.586067676	0.775731957	0.724356249
SW 900	0.731420222	0.935308676	0.776564747	0.814431215
NCI-H1573	0.794668257	0.671380806	0.777126549	0.747725204
NUGC-4	0.786115925	0.74014909	0.777413886	0.767892967
KYSE-410	0.718418485	0.696156071	0.778418217	0.730997591
NCI-H1869	0.762429275	0.060129556	0.778991316	0.533850049
NCI-H1395	0.850100282	0.855551861	0.779970736	0.82854096
Caov-4	0.877190678	0.699514883	0.780229028	0.785644863
Sq-1	0.619502477	0.489809037	0.780490676	0.629934063
NCI-H2126	0.683651254	0.574977783	0.780710718	0.679779918
CAMA-1	0.80193816	0.626522263	0.781711229	0.736723884
CADO-ES1	0.727042245	1.011690325	0.782658992	0.840463854
SU-DHL-1	0.393535393	1.332478731	0.783081218	0.836365114

T.T	0.788948844	0.67173681	0.784049	0.748244885
HT-29	0.870086553	0.625567973	0.784084106	0.759912877
DMS 79	0.731282387	0.832329153	0.784207031	0.782606191
MKN74	0.692670441	0.652705014	0.784838342	0.710071266
NCI-H2444	0.818048452	0.911022031	0.784922073	0.837997519
SW48	0.684389175	0.826551322	0.787453315	0.766131271
KYSE-150	0.880813967	0.484883322	0.788166074	0.717954454
MDA-MB-453	0.973944592	0.558749639	0.788496789	0.77373034
ME-1	0.882592737	0.841536737	0.789717813	0.837949096
AML-193	0.539111945	1.145739056	0.790178273	0.825009758
EFM-19	0.828273552	0.307091922	0.790632889	0.641999455
CFPAC-1	0.680779163	0.731722869	0.791077067	0.734526366
VM-CUB1	0.887832745	0.905542859	0.791880367	0.86175199
NCI-H209	0.83210925	0.593243952	0.792593004	0.739315402
NCI-H1648	0.931123402	0.631499855	0.793061274	0.785228177
SU.86.86	0.827580273	0.810634619	0.793852338	0.810689077
RL95-2	0.985499575	0.694002021	0.796350461	0.825284019
PC-14	0.715465839	0.379110069	0.796944229	0.630506712
LOU-NH91	0.686679462	0.66906158	0.79745132	0.717730787
CAL-148	0.964746246	0.568697772	0.797984525	0.777142848
HCC1599	0.92714148	0.488761489	0.800267958	0.738723642
KMS-18	0.648186541	1.299958765	0.800647159	0.916264155
AU565	0.945761141	0.396593951	0.802256835	0.714870642
KP-2	1.19206683	0.670468669	0.803532711	0.888689403
SNU-840	0.677898465	0.531425967	0.804491275	0.671271902
A549	0.591536106	0.433160993	0.80499446	0.609897187
SW948	0.979737154	0.905464288	0.805256935	0.896819459
LS123	0.887723753	0.717078053	0.806571255	0.80379102
NCI-H1623	0.874207712	0.751313244	0.806946211	0.810822389
MDA-MB-175-VII	0.793672628	0.359494464	0.808099055	0.653755382
NCI-H2023	0.609617168	0.73254132	0.808300186	0.716819558
NCI-H510	0.774939277	0.782506998	0.808417784	0.788621353
YMB-1	0.904466168	0.656345568	0.809359529	0.790057088
KYSE-510	0.815585924	0.610418149	0.810558162	0.745520745
SNU-308	0.937125591	0.806968127	0.81092229	0.851672003
NCI-H146	0.878689412	0.854907182	0.811708607	0.848435067
NCI-H226	0.908940062	1.053412391	0.81274447	0.925032307
Detroit 562	0.836801159	0.724110152	0.812825014	0.791245442
NCI-H1836	0.849409528	0.849521884	0.813507645	0.837479686
EM-2	0.589228285	0.909621486	0.814169159	0.77100631
BxPC-3	0.966977076	0.719773619	0.816154652	0.834301782
NCI-H1355	0.719681431	0.868415006	0.81737982	0.801825419
GDM-1	0.498744021	1.10703118	0.817521368	0.807765523
SNU-175	0.872683251	0.795901099	0.8177857	0.828790017
SW480	0.614917265	0.913814647	0.819807868	0.782846593
HT-1197	0.969128649	0.594444535	0.821732088	0.795101757
BT-483	1.006438573	0.489973634	0.821941281	0.772784496

HEC-6	0.726436918	0.882268376	0.822768231	0.810491175
HCC2157	0.953892318	0.77325628	0.823059859	0.850069486
NCI-H2196	0.851594054	0.766761935	0.823163149	0.813839712
JHOM-2B	0.972208227	0.746505709	0.823886859	0.847533599
TE-1	0.79991148	0.727344262	0.823984235	0.783746659
MCAS	0.891236437	0.442028776	0.824182155	0.719149123
PK-1	0.962903368	0.692258093	0.824245531	0.826468998
NCI-H810	0.987665586	0.620534649	0.825069235	0.811089823
COR-L23	0.990986988	0.708551642	0.825503553	0.841680728
TEN	0.530470931	0.761883473	0.825706084	0.706020163
ZR-75-1	0.950170475	0.652586816	0.827287565	0.810014952
RMUG-S	0.804316716	0.731371674	0.827390389	0.787692926
HT55	1.002360971	0.809961123	0.827632019	0.879984704
KE-39	0.654765494	0.86749147	0.829889588	0.784048851
HCC70	1.018849062	0.532343134	0.830263802	0.793818666
SNU-61	0.946068611	0.609823922	0.831081553	0.795658029
HCC-1171	0.931881836	0.86345124	0.831131277	0.875488118
DMS 153	0.86245035	0.837062626	0.83128407	0.843599016
HCC-56	0.904457053	0.773100374	0.831298217	0.836285215
NCI-H1650	0.979005981	0.617107326	0.833616475	0.809909927
RERF-LC-KJ	0.844433514	0.699407427	0.834416583	0.792752508
NU-DHL-1	0.688664194	1.084129305	0.835868361	0.869553953
SNU-1040	0.873088106	0.771719754	0.835885482	0.82689778
LS1034	0.92846906	0.850006797	0.838006626	0.872160828
HCC1500	0.918717129	0.723977668	0.838223244	0.826972681
NCI-H1568	0.818216606	0.718640089	0.838799096	0.791885264
TE-10	0.857096422	0.739811031	0.839048116	0.81198519
NCI-H441	0.699068255	0.526871412	0.839306487	0.688415385
OVCAR-4	0.990597979	0.630866778	0.840377466	0.820614074
NCI-N87	1.124394323	0.75443506	0.842846612	0.907225332
RT112/84	1.151955714	0.568485782	0.842879441	0.854440313
LU65	0.428836525	1.030730342	0.843127848	0.767564905
Panc 04.03	0.88173361	0.962944505	0.844204538	0.896294218
NCI-H2291	0.85343526	0.82372287	0.844767183	0.840641771
RERF-LC-Ad1	0.952463174	0.915480538	0.845103609	0.904349107
Panc 05.04	0.955455561	0.973279034	0.845748271	0.924827622
NCI-H1435	0.7452477	0.610178729	0.847538542	0.734321657
NCI-H727	1.066101315	0.894496487	0.847601355	0.936066386
PA-TU-8902	0.666156884	0.283559663	0.84797573	0.599230759
CL-14	0.950738912	0.925429572	0.848100063	0.908089516
HEC-1-A	0.77651761	0.661372057	0.84829294	0.762060869
OVKATE	1.07312718	0.646077055	0.849662892	0.856289042
BICR 6	0.931411681	0.630412539	0.850050161	0.803958127
HCT-15	0.836689317	0.860914864	0.85114456	0.849582914
ChaGo-K-1	0.965266725	0.704472066	0.85185276	0.840530517
HuG1-N	0.916004904	0.949812392	0.851982749	0.905933348
GP2d	1.009584395	0.642634197	0.852719143	0.834979245

HEC-151	0.60919232	0.976349157	0.853172852	0.812904776
SNU-407	0.796801073	0.832924314	0.85330627	0.827677219
SK-BR-3	1.08376509	0.520009912	0.853726709	0.819167237
LNCaP clone FGC	0.742030227	0.848277423	0.854130394	0.814812682
BEN	1.005891101	0.65369799	0.854320168	0.837969753
HCC1954	0.906028298	0.655592571	0.854881849	0.805500906
KCI-MOH1	0.831909873	0.911672615	0.854977224	0.866186571
NCI-H1437	0.821298346	0.592910682	0.855661588	0.756623538
NCI-H358	0.746714023	1.018835628	0.856773016	0.874107556
UACC-893	1.086932793	0.611344846	0.858491091	0.852256243
KU-19-19	0.902020343	0.893222267	0.859737529	0.88499338
MDA-MB-134-VI	0.966406861	0.847817809	0.860227531	0.891484067
KYSE-30	0.8482159	0.763259474	0.862036976	0.824504117
SNU-899	0.953975222	0.7540506	0.863745915	0.857257246
SW403	0.928022831	0.767967779	0.864009554	0.853333388
NCI-H2122	1.019955382	0.882966258	0.865699615	0.922873752
EFM-192A	1.085359264	0.55281078	0.867169277	0.835113107
HCC202	1.111676108	0.578880195	0.867949796	0.852835366
LCLC-97TM1	1.066928776	0.720331586	0.8680027	0.885087687
AGS	0.743935405	1.036686624	0.870008598	0.883543542
YAPC	0.866238163	0.453723553	0.870038419	0.730000045
T3M-4	0.980788937	0.895484976	0.874315134	0.916863016
DLD-1	0.865054033	0.893687807	0.874578115	0.877773318
SNU-C1	0.969065935	0.820296977	0.874660532	0.888007815
L3.3	0.820033397	0.759666338	0.875137852	0.818279196
Capan-2	0.883228926	0.999678122	0.87674228	0.919883109
NCI-H2087	0.967081166	0.839641026	0.877705162	0.894809118
HCC-1195	0.918166066	0.751133419	0.879244159	0.849514548
SNU-16	1.085025471	0.64182909	0.879783759	0.86887944
SW1463	0.986242077	0.800375712	0.88033712	0.88898497
JHOS-2	0.990238397	0.828436068	0.884221268	0.900965244
SNU-C4	0.915069722	0.974720688	0.885176477	0.924988962
COV644	1.070168045	0.615364237	0.885780066	0.857104116
NCI-H1693	0.804322473	1.114095664	0.886427479	0.934948539
RT4	1.226421804	0.655493052	0.887182894	0.923032583
ZR-75-30	1.095241798	0.578933857	0.88779135	0.853989002
COLO-680N	0.867000144	0.65605118	0.888656914	0.803902746
PK-59	0.948421998	0.931545906	0.888910304	0.922959403
DMS 454	1.098615064	0.668266643	0.889579911	0.885487206
UACC-812	1.173780894	0.524466306	0.889655813	0.862634338
MOR/CPR	0.922322374	0.560889969	0.890849436	0.791353927
HCC-15	0.757552103	0.904608823	0.89365196	0.851937629
SW 780	1.011390374	0.820040632	0.893990848	0.908473952
COR-L105	0.896975378	0.885380057	0.89403081	0.892128748
NCI-H322	1.089565773	0.708457433	0.894123519	0.897382241
SW620	0.975154436	0.809644456	0.894167659	0.89298885
KMBC-2	1.027405069	0.768069216	0.89460994	0.896694742

MKN7	0.949585487	0.699200952	0.894992989	0.847926476
OE19	0.902715874	0.947046526	0.895183573	0.914981991
NCI-H2110	0.966262778	0.733765705	0.897117579	0.865715354
CL-34	0.986505093	0.832469092	0.899730016	0.906234734
HPAC	0.853553254	0.7101185	0.901806605	0.82182612
BT-474	1.281182232	0.577116674	0.901855184	0.920051363
MKN-45	1.046628739	0.698114927	0.902843866	0.882529177
OAW28	1.065320099	0.762518408	0.904173679	0.910670728
SNU-620	0.990806978	0.80676282	0.904975521	0.90084844
SNU-478	0.963232087	0.647849137	0.905714656	0.83893196
NCI-H508	0.972406823	0.776333784	0.908198841	0.885646482
KATO III	1.027241308	0.341151666	0.913425176	0.76060605
HUP-T4	1.058434837	0.829683509	0.914035042	0.934051129
SNU-1196	1.055525	0.873514765	0.916534006	0.94852459
NCI-H2347	0.967608574	1.016095058	0.917612139	0.967105257
Calu-3	1.043376497	0.873610938	0.918300765	0.945096067
JHOS-4	1.063787392	0.758261303	0.918499544	0.91351608
CW-2	0.883299415	0.923645158	0.918878702	0.908607758
HCC2218	1.114118767	0.561228507	0.918878814	0.864742029
NIH:OVCAR-3	0.993679162	0.796829165	0.919408052	0.90330546
NCI-H747	0.919807616	1.012472631	0.919738742	0.950672996
NCI-H2342	1.027434447	0.742611108	0.920487115	0.896844223
LS513	1.022006395	0.799418594	0.921173412	0.914199467
SNU-283	1.021212889	0.817583439	0.924320593	0.921038974
EBC-1	1.023401554	1.007905035	0.926631843	0.985979478
COLO-678	0.841941813	0.911855102	0.927793436	0.89386345
NCI-H1838	0.86768483	0.870483962	0.92905934	0.889076044
HT115	1.077365919	0.823364834	0.930669791	0.943800181
23132/87	1.058855152	0.887188041	0.930708344	0.958917179
Capan-1	1.062216196	0.822238826	0.932836838	0.939097287
TE-4	0.935377778	0.814969667	0.933186739	0.894511395
HEC-265	0.94819801	0.696878741	0.939173394	0.861416715
DMS 53	1.214675239	0.833082657	0.941287482	0.996348459
HCC1419	1.140738486	0.682306811	0.943332613	0.92212597
Panc 08.13	0.98661095	0.870382123	0.944596257	0.93386311
OE33	1.243972649	0.805404951	0.944696024	0.998024541
Panc 03.27	0.979077882	0.711269753	0.945355019	0.878567551
HCC2935	1.082139187	0.725994542	0.945621418	0.917918382
TGBC11TKB	0.901266951	0.846436978	0.946381001	0.89802831
RERF-LC-Ad2	1.002285347	1.020853735	0.948245889	0.990461657
HEC-108	0.891636864	0.879692393	0.948483146	0.906604134
DV-90	0.941288438	0.82700018	0.950751873	0.90634683
COLO 668	1.170391866	0.846889614	0.951923924	0.989735135
CL-40	1.044954886	0.861807677	0.952454967	0.95307251
647-V	1.247845107	0.708555295	0.956058989	0.970819797
PL45	0.838640999	0.615711724	0.956575999	0.803642907
CCK-81	0.939457177	1.084998514	0.959001403	0.994485698

IM95	0.946414149	0.822441522	0.960329997	0.909728556
HEC-251	0.984381132	1.022263487	0.962205992	0.98961687
KM12	1.13001015	1.009605686	0.96544395	1.035019929
NCI-H2170	1.204726231	0.727451447	0.966542097	0.966239925
SNU-324	0.766982336	0.940549629	0.967345139	0.891625701
LS 180	0.972027644	0.951159799	0.969787695	0.964325046
LS411N	1.026580264	0.974977309	0.971762606	0.991106726
SK-CO-1	1.179840452	0.917785965	0.973124138	1.023583518
COLO 205	1.003377508	1.120463755	0.98098455	1.034941937
HCC-78	1.116953408	0.787359686	0.981379433	0.961897509
NCI-H1781	1.089370005	0.742975649	0.98609373	0.939479794
NCI-H854	1.078337642	0.927468381	0.987979112	0.997928378
GSU	1.181874892	0.760927608	0.98813074	0.976977747
OCUM-1	1.132714756	0.979732163	0.990320907	1.034255942
DU 145	0.975932779	1.11451995	0.991134176	1.027195635
PA-TU-8988S	0.916872365	0.973805828	0.992148538	0.960942244
JHUEM-1	1.047013882	1.010889566	1.00648641	1.021463286
Panc 10.05	0.929971071	0.672254304	1.010749277	0.870991551
SNU-213	0.933365156	1.139638815	1.025229275	1.032744416
CAL-12T	1.14558996	0.813700496	1.026773663	0.995354706
SNU-C5	1.061436645	0.894118312	1.028204131	0.994586363
SNU-119	1.284752398	0.758374838	1.029813179	1.024313471
ABC-1	0.935299311	1.197274698	1.040778476	1.057784162
SNU-245	1.250958107	0.86075641	1.04171874	1.051144419
SNU-520	1.189091557	1.10520664	1.06622235	1.120173515

Supplementary Table 5 Sensitivity Predictions for all CCLE Cell Lines. Sensitivity predictions for all cell lines in the CCLE, using each of the three learned biomarker signatures. A larger score indicates a resistant cell lines, whereas a smaller score indicates a sensitive cell line.

SUPPLEMENTARY MATERIAL AND METHODS

IC_{50} determination.

Predicted statin-resistant (BT-474 and NCI-H2170) and sensitive (SK-MES-1 and SK-MEL-24) cell lines were cultured as above, and seeded in 24-well plates at a concentration of 0.5×10^5 cells/mL (500µL per well). The next day, cells were treated with 0.1 µM, 0.3 µM, 1 µM, 3 µM, 10 µM, 30 µM, and 100 µM atorvastatin (Sigma). Cells treated with 0.2% DMSO (the concentration of DMSO in the 100 µM atorvastatin treatment condition) served as the control. Three days after treatment, the cells were washed with PBS and fixed in 3.7% formaldehyde (F79-1, ThermoFisher Scientific) for 15 minutes. Next, the cells were stained with 0.5% w/v crystal violet (Sigma-Aldrich) for 10 minutes. Excess dye was washed extensively with tap water. The absorbed dye was released with 2% SDS. The supernatants were mixed thoroughly before transfer to a 96-well plate to be read at 560 nm using a Tecan SpectraFluor microplate reader (Tecan US, Durham, NC). IC_{50} values were determined by fitting a standard, four-parameter sigmoid curve to the data. All treatments were carried out in triplicate samples and data are representative of three independent experiments.

Immunofluorescence microscopy.

Cultured BT-474, NCI-H2170, SK-MES-1 and SK-MEL-24 cells grown on coverslips in a 12-well plate were fixed with 3.7% formaldehyde (F79-1, ThermoFisher Scientific) for 15 min, and then permeabilized with 0.1% Triton-X-100 (Fisher Scientific, Pittsburgh, PA) made in PBS for 20 min. Next, non-specific proteins were blocked in 3% BSA for 45 min at RT. The cells were incubated with a monoclonal mouse antibody to human E-cadherin (1:500, 13-5700, Invitrogen) in a humidified container overnight at 4°C. After overnight incubation, coverslips were washed three times with 0.5% BSA for 5 minutes each and then were probed with an Alexa Fluor 488 goat anti-mouse IgG (1:200, Fisher Scientific) in the dark for 1 hour at RT. Following one 5-minute wash with 0.5% BSA, nuclei were stained with DAPI (1 µg/ml) in PBS for 15 min at RT, washed three times with PBS, and mounted in an aqueous-based mounting medium (gelvatol, recipe

courtesy of U-Pitt Center for Biological Imaging). Images were captured with the 60X oil objective lens on an Olympus BX40 fluorescence microscope (Olympus Optical).

Computational Models

Mixed Graphical Models [1] (MGM) is a new method to learn the direct associations in a dataset consisting of both categorical and continuous data. MGM characterizes the joint distribution of the categorical and continuous variables under the assumptions of linear Gaussian continuous variables and multinomial categorical variables. To prevent overfitting a sparsity penalty, λ, is employed. In accordance with Sedgwick et al. [2], we utilize separate sparsity penalties for each type, and the MGM method is used without modification from this work.

A common problem with using probabilistic graphical models for biomarker identification in highly structured data, like gene expression, is strong correlations between variables (genes). These correlations result in a *lack of stability* of the biomarkers as small changes in the data can result in changes amongst the selected biomarkers; and *multiplicity* of the predictive signatures, since multiple signatures that each contains highly correlated features, can be equally predictive. To mitigate this problem, we developed the Tree-Guided Recursive Cluster Selection (T-ReCS) procedure [3], which performs feature selection at the cluster level, on clusters that are generated dynamically during the feature selection process. We refer the reader to [3] for full details of the T-ReCS algorithm.

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SUPPLEMENTARY RESULTS

Selection of statin sensitive tumors from TCGA-deposited breast cancer samples

The experimentally confirmed gene expression signatures allow the selection of those subsets of primary tumors or metastases that may be sensitive to statin treatment. To this end, we have applied the biomarker search for transcriptome profiles obtained from breast cancer samples that are deposited in the Cancer Genome Atlas (TCGA) (1). We find that a small subset of primary breast tumors is predicted to be sensitive to statins while many of them are not (Fig. 3). We find no significant correlation with tumor stage, age, race, presence or absence of metastasis ($p=0.590$, $p=.101$, $p=.290$, $p=.275$, respectively). Subsequently, we have repeated the procedure for all tumor types in TCGA, finding overall similar trends (Supplementary Fig 3A-3H), We do find a statistically significant correlation to age in Ovarian cancer ($p<.01$) and Leukemia ($p<.05$), as well as an association to tumor progression in a renal cancer cohort ($p<.001$); however, these may be an artifact of multiple hypothesis testing. Note, however, that statin sensitivity does correlate with epithelial-to-mesenchymal transition (EMT) (2). Thus, those subsets of cells in primary tumors that undergo EMT and are most likely to metastasize can be statin sensitive even if the average transcriptome pattern of the bulk tumor does not indicate this.

Gene Ontology Enrichment Analysis

To validate the biological significance of the predictive biomarkers we performed gene ontology enrichment analyses using DAVID (3). Three gene lists were submitted to the resource, representing the three major gene clusters (consisting of more than two genes) that we identified by the Atorva_T-ReCS approach (Table S1-3). We only used the Atorva_T-ReCS approach for this analysis because unclustered predictive biomarkers tend to have a single representative from each pathway (since expression of genes in the same pathway tend to be correlated or anti-correlated), and thus ontological analysis would be unable to recognize important terms or important pathways. Through T-ReCS clustering, we mitigate this problem by finding multiple co-expressed genes in a single signature (see Materials and Methods).

Several ontological terms related to the submitted gene lists have evidence of association to statins in the literature. The two major ontological terms from cluster one refer to axonal transport of mitochondria and axon cytoplasm. Though there is no evidence for statins directly acting upon axons, their inhibition of the cholesterol synthesis pathway has been shown to delay axonal growth (4). From cluster two, statins have been shown to have biphasic effects on angiogenesis (5), and they have anti-inflammatory properties through their reduction in quantity of circulating C-reactive protein (CRP) (6). Also, though it is not yet clear if statins have a direct effect on SNARE protein binding, we note that statins may affect the release of insulin, in which SNARE proteins also have a role (7). Cluster three depicts two main terms: cell adhesion/migration and extracellular matrix organization. It has been shown that statins affect the adhesion related expression of selectin and VCAM-1 (8), and they further inhibit migration of cell lines, and in fact this may relate to their anti-inflammatory properties (9,10). In addition, statins have been shown to modulate the metabolism of the extracellular matrix to prevent fibrosis by inhibiting connective tissue growth factor (CTGF) production (11). Overall, this demonstrates the relevance of the genes in our predicted signature to the mechanisms underlying the physiological effect of statin.

Determination of potential combination statin therapies

We discuss here the results of Figure 2 for only those molecules that display positive statistically significant correlations (using False Discovery Rate < 0.05). In sum, we identified 27 drug molecules that satisfied this criterion.

The main drugs with highest statistical significance are BRAF inhibitors (Dabrafenib, PLX-4720, SB590885), MEK inhibitors (Refametinib, Selumetinib), Bcl-2/Bcl-x/Mcl-1 inhibitors (TW37), NF-κB inhibitors (piperlongumine) and HSP-90 inhibitors (Elesclomol) (Table 2). In recent studies, simvastatin was shown to have additive or synergistic effects in combination therapy with BRAF-inhibitor, PLX-4720 (12,13) that seem to depend on the mutational status of melanoma cells (13). A MEK inhibitor was also shown to synergize with statin in a Drosophila model of lung cancer (14). Thus, other inhibitors of the Ras-Raf-MEK-ERK pathway could also be tested for synergy with statins. Treatment with mitogen-activated

protein kinase (MAPK) pathway targeted therapies (i.e., combined BRAF and MEK inhibitors) is the current standard of care for patients with BRAF-mutant advanced melanoma demonstrating the clinical relevance of MEK-inhibitors. However, response to these therapies in patients typically lasts less than a year, suggesting that further research is necessary for the better clinical management of these patients (15).

HSP-90 family members can both suppress or contribute to tumor invasiveness. Also, cell surface HSP-90 contributes to metastasis formation (16), while the mitochondrial HSP-90, TRAP-1 suppresses tumor cell invasiveness and plays a role mediating the switch from OxPhos to aerobic glycolysis (17). Indeed, recent studies have also demonstrated that simvastatin synergizes with the HSP-90 inhibitors, 17-DMAG (13) or 17-AAG (12) in inhibiting melanoma cell proliferation.

Although they have not yet been tested in combination with statins the other main identified mechanisms are also of potential interest for statin co-therapy. Bcl-2 and Bcl-xL can promote cell migration, invasion and metastasis perhaps by their promotion of mitochondrial ROS formation (18); In contrast, pro-apoptotic Bcl-2 family members, Bax and Bak attenuate cell migration and metastasis formation (18). The selective Bcl-2 inhibitor ABT199/ Venetoclax is FDA approved and used for treating relapsed/ refractory CLL with 17p deletion. Similarly, the essential role of NF-kB in epithelial-mesenchymal transition (EMT), the main initial event in metastasis development, is well recognized (19,20), and its inhibitors can delay breast cancer invasiveness (21). These data argue that if they are expressed to a sufficient degree in a given cell line, the inhibition of both Bcl-2 and/ or NF-kB may synergize with the tumor growth-inhibitory function of statins.

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