

Up in Tumor-Free Mice Treated with Vaccine + Anti-CD25

Experiments 1+2

Gene Set	p-value	FDR
STEMCELL_COMMON_UP	0	0.018784
HSIAO_LIVER_SPECIFIC_GENES	0	0.022592
CPR_LOW_LIVER_DN	0	0.02914
CHOLESTEROL_BIOSYNTHESIS	0	0.056675
HSC_STHSC_FETAL	0	0.062272
UVC_XPCS_ALL_DN	0	0.069565
BRACX_UP	0.003289	0.070181
TPA_RESIST_EARLY_UP	0	0.072886
UVC_XPCS_8HR_DN	0	0.074547
CPR_NULL_LIVER_DN	0	0.078674
UVB_NHEK1_DN	0	0.079822
IDX_TSA_DN_CLUSTER6	0.01049	0.080885
HSC_STHSC_SHARED	0	0.081425
MOREAUX_TACI_HI_VS_LOW_DN	0	0.083259
HSA04610_COMPLEMENT_AND_COAGULATION_CASCADES	0	0.10156
UVC_TTD-XPCS_COMMON_DN	0	0.104492
NICK_RHAPC_UP	0.003546	0.106318
IL7PATHWAY	0.013115	0.107492
UVC_XPCS_4HR_DN	0	0.109237
NADLER_OBESITY_DN	0.007194	0.113438
CMV_HCMV_TIMECOURSE_18HRS_UP	0	0.114806
FLECHNER_KIDNEY_TRANSPLANT_WELL_UP	0	0.122817
BLOOD_CLOTTING_CASCADE	0.003521	0.151502
TPA_RESIST_MIDDLE_UP	0	0.158806
FSH_OVARY_MCV152_UP	0	0.173944
BRCA1KO_MEF_DN	0	0.178521
HDACI_COLON_BUT30MIN_DN	0.007435	0.179085
UVC_TTD_ALL_DN	0	0.180396
UVC_TTD_4HR_DN	0	0.184987
UVB_NHEK1_C6	0	0.186193
MARSHALL_SPLEEN_BAL	0.018727	0.200027
PAR1PATHWAY	0.028662	0.21274
HDACI_COLON_SUL12HRS_DN	0.021053	0.214085
ET743_SARCOMA_24HRS_DN	0	0.216648
HSA00640_PROPANOATE_METABOLISM	0.003802	0.221284
CHEN_HOXA5_TARGETS_UP	0	0.225897
UVB_NHEK3_C2	0.034884	0.225933
ET743_SARCOMA_DN	0	0.226064
HSA00100_BIOSYNTHESIS_OF_STEROIDS	0.034965	0.22687
ET743_SARCOMA_48HRS_DN	0	0.227139
GH_GHRHR_KO_24HRS_DN	0	0.229476
UVB_SCC_DN	0	0.230287
TFF2_KO_UP	0.029703	0.232395
FLECHNER_KIDNEY_TRANSPLANT_REJECTION_PBL_UP	0.017621	0.233387
SHIPP_FL_VS_DLBCL_UP	0.018051	0.233525
CIRCADIAN_EXERCISE	0.027344	0.233639

REOVIRUS_HEK293_UP	0	0.234757
CELL_ADHESION_MOLECULE_ACTIVITY	0.006098	0.238897
STATIN_PATHWAY_PHARMGKB	0.046875	0.246418

Experiment 1

<u>Gene Set</u>	<u>p-value</u>	<u>FDR</u>
HSAIO_LIVER_SPECIFIC_GENES	0	0
NADLER_OBESITY_DN	0	0.006496
CPR_LOW_LIVER_DN	0	0.006867
ADIP_HUMAN_UP	0	0.024882
HSA04610_COMPLEMENT_AND_COAGULATION_CASCADES	0	0.03139
CPR_NULL_LIVER_DN	0	0.03643
HSA00980_METABOLISM_OF_XENOBIOTICS_BY_CYTOCHROME	0	0.041851
HUMAN_TISSUE_LIVER	0	0.041877
FETAL_LIVER_VS_ADULT_LIVER_GNF2	0	0.044462
HOUSTIS_ROS	0	0.046504
STATIN_PATHWAY_PHARMGKB	0	0.048986
FLECHNER_KIDNEY_TRANSPLANT_WELL_UP	0	0.049993
STEMCELL_COMMON_UP	0	0.060373
SHEPARD_BMYB_MORPHOLINO_DN	0	0.064838
TPA_RESIST_EARLY_UP	0.002141	0.069036
IDX_TSA_UP_CLUSTER1	0.002358	0.073526
FLECHNER_KIDNEY_TRANSPLANT_REJECTION_DN	0	0.077965
GLUTATHIONE_METABOLISM	0.002141	0.093819
HSA00480_GLUTATHIONE_METABOLISM	0.006466	0.121716
CIRCADIAN_EXERCISE	0	0.13762
BLOOD_CLOTTING_CASCADE	0.006637	0.143008
DOX_RESIST_GASTRIC_DN	0.002232	0.143472
HSA00280_VALINE_LEUCINE_AND_ISOLEUCINE_DEGRADATION	0.007109	0.225346
NADLER_OBESITY_UP	0.006993	0.229754
INTRINSICPATHWAY	0.022371	0.233318
CREB_BRAIN_2WKS_UP	0.016055	0.237649
TPA_RESIST_MIDDLE_UP	0.012397	0.240233
LI_FETAL_VS_WT_KIDNEY_UP	0	0.240476

Experiment 2

<u>Gene Set</u>	<u>p-value</u>	<u>FDR</u>
CHOLESTEROL_BIOSYNTHESIS	0	0.00541
IL7PATHWAY	0	0.006214
BRACX_UP	0	0.012878
HSA03010_RIBOSOME	0	0.01565
GLEEVECPATHWAY	0.003906	0.030388
MRNA_PROCESSING_REACTOME	0	0.054535
MARSHALL_SPLEEN_BAL	0	0.055281
HSA04660_T_CELL_RECEPTOR_SIGNALING_PATHWAY	0	0.061682
MRNA_PROCESSING	0	0.062801
MOREAUX_TACI_HI_VS_LOW_DN	0	0.087228
HSA00100_BIOSYNTHESIS_OF_STEROIDS	0	0.095465

HDACI_COLON_TSABUT_DN	0.004016	0.098174
UVC_TTD-XPCS_COMMON_DN	0	0.105585
UVB_NHEK3_C2	0.005181	0.112996
UVC_XPCS_8HR_DN	0	0.126544
NICK_RHAPC_UP	0.014019	0.134717
FSH_OVARY_MCV152_UP	0	0.139887
SA_CASPASE_CASCADE	0.017668	0.145897
FLECHNER_KIDNEY_TRANSPLANT_REJECTION_PBL_UP	0.007042	0.148662
EGFPATHWAY	0.008811	0.155748
UVB_SCC_DN	0	0.160339
ET743_SARCOMA_24HRS_DN	0	0.160718
UVB_NHEK1_C6	0	0.160884
UVC_TTD_ALL_DN	0	0.161631
BYSTROM_IL5_DN	0	0.163932
GAMMA_ESR_WS_UNREG	0.018692	0.164164
RIBOSOMAL_PROTEINS	0	0.164592
MMS_MOUSE_LYMPH_HIGH_24HRS_UP	0.024896	0.165001
TCRPATHWAY	0	0.165234
ET743_SARCOMA_48HRS_DN	0	0.167592
ET743_SARCOMA_DN	0	0.167879
CALCINEURIN_NF_AT_SIGNALING	0.01087	0.168111
UVC_XPCS_ALL_DN	0	0.169326
FSH_OVARY_MCV152_DN	0.012579	0.171915
FLECHNER_KIDNEY_TRANSPLANT_WELL_PBL_DN	0.023392	0.171985
LOTEM_LEUKEMIA_UP	0.021277	0.172993
GH_GHRHR_KO_24HRS_DN	0	0.173113
LEE_TCELLS1_UP	0	0.173129
LEE_TCELLS10_UP	0	0.173484
UVB_NHEK1_DN	0	0.173499
LEE_TCELLS8_UP	0	0.174722
GH_EXOGENOUS_EARLY_UP	0.036496	0.175574
UVC_XPCS_4HR_DN	0	0.176798
IDX_TSA_DN_CLUSTER6	0.017621	0.177108
SHIPP_FL_VS_DLBCL_UP	0.017857	0.177327
APOPTOSIS_GENMAPP	0.006369	0.178885
HSA00640_PROPANOATE_METABOLISM	0.023697	0.18033
ET743_SARCOMA_72HRS_DN	0	0.180927
CHEN_HOXA5_TARGETS_UP	0	0.182011
STEMCELL_COMMON_UP	0	0.184426
CMV_HCMV_TIMECOURSE_4HRS_DN	0.020513	0.192079
UVB_NHEK2_DN	0	0.194683
GALE_FLT3ANDAPL_UP	0	0.194918
UVB_NHEK3_C5	0.037634	0.195705
PDGFPATHWAY	0.021277	0.196263
HSC_STHSC_FETAL	0.044898	0.197362
LEE_TCELLS4_UP	0.027778	0.197454
FETAL_LIVER_ENRICHED_TRANSCRIPTION_FACTORS	0.016529	0.198764
TPOPATHWAY	0.048246	0.199334
GUO_HEX_UP	0.018349	0.199455
REOVIRUS_HEK293_UP	0	0.199575
GAMMA_ESR_OLD_UNREG	0.037037	0.199747

HSC_STHSC_SHARED	0.039301	0.201308
HDACI_COLON_SUL12HRS_DN	0.038251	0.201455
P53_SIGNALING	0	0.201672
PARK_HSC_VS_MPP_UP	0.04878	0.202133
SA_B_CELL_RECEPTOR_COMPLEXES	0.028302	0.203763
ST_DIFFERENTIATION_PATHWAY_IN_PC12_CELLS	0.021978	0.206804
CMV_24HRS_UP	0	0.214161
CAMPTOTHECIN_PROBCELL_DN	0.037559	0.216381
UVC_TTD_4HR_DN	0	0.217285
PARK_MSCS_DIFF	0.039409	0.219653
CMV_HCMV_TIMECOURSE_18HRS_UP	0.024	0.234028

Up in Tumor-Free Mice Treated with Vaccine

Experiments 1+2

<u>Gene Set</u>	<u>p-value</u>	<u>FDR</u>
UVC_TTD-XPCS_COMMON_DN	0	0
FLECHNER_KIDNEY_TRANSPLANT_WELL_UP	0	9.18E-04
CMV_HCMV_TIMECOURSE_18HRS_UP	0	0.001255
UVC_TTD_4HR_DN	0	0.002352
UVC_TTD_ALL_DN	0	0.002605
DOX_RESIST_GASTRIC_DN	0	0.002697
STEMCELL_COMMON_UP	0	0.003031
UVC_XPCS_ALL_DN	0	0.003147
MOREAUX_TACI_HI_VS_LOW_DN	0	0.003371
UVB_NHEK1_DN	0	0.003437
UVC_XPCS_8HR_DN	0	0.00346
ZHAN_MMPC_PC	0	0.003593
UVC_XPCS_4HR_DN	0	0.005218
CISPLATIN_PROBCELL_UP	0	0.006725
UVB_SCC_UP	0	0.007166
LINDSTEDT_DEND_DN	0	0.008045
GOLDRATH_CELLCYCLE	0	0.008115
SIG_BCR_SIGNALING_PATHWAY	0	0.008294
UVB_NHEK1_C6	0	0.012718
HSC_MATURE_ADULT	0	0.012887
ROTH_HTERT_DIFF	0	0.013123
HSC_MATURE_SHARED	0	0.013295
HSA00632_BENZOATE_DEGRADATION_VIA_COA_LIGATION	0	0.016806
REOVIRUS_HEK293_UP	0	0.017196
HSC_LATEPROGENITORS_ADULT	0	0.017396
UVB_NHEK3_C2	0	0.017537
UVB_SCC_DN	0	0.018065
ET743_SARCOMA_48HRS_DN	0	0.019145
FLECHNER_KIDNEY_TRANSPLANT_REJECTION_PBL_UP	0	0.021267
WNTPATHWAY	0	0.021342
TARTE_BCELL	0	0.021416
PPARAPATHWAY	0	0.021428
ET743_SARCOMA_24HRS_DN	0	0.021799
CERAMIDEPATHWAY	0.006787	0.021854
CMV_HCMV_TIMECOURSE_16HRS_UP	0	0.021886
HSA04662_B_CELL_RECEPTOR_SIGNALING_PATHWAY	0	0.023338
HSC_LATEPROGENITORS_SHARED	0	0.023363
GAMMA-UV_FIBRO_UP	0	0.023865
HSC_LATEPROGENITORS_FETAL	0	0.026436
PENG_LEUCINE_DN	0	0.026522
YU_CMYC_UP	0.002674	0.027397
UVC_HIGH_D3_DN	0	0.029681
ET743_SARCOMA_DN	0	0.03031
KNUDSEN_PMNS_DN	0	0.030482
YU_CMYC_DN	0	0.03116
SIG_PIP3_SIGNALING_IN_B_LYMPHOCYTES	0	0.031445

MYOD_NIH3T3_DN	0	0.031742
HSC_MATURE_FETAL	0	0.031774
LINDSTEDT_DEND_8H_VS_48H_DN	0.002762	0.032171
MITOCHONDRIAL_FATTY_ACID_BETAOXIDATION	0.004762	0.03263
MITOCHONDRIAPATHWAY	0.002747	0.033595
HIVNEFPATHWAY	0	0.034247
BRCA_PROGNOSIS_NEG	0	0.034497
WANG_MLL_CBP_VS_GMP_DN	0	0.035148
CPR_LOW_LIVER_DN	0.004739	0.035456
GREENBAUM_E2A_UP	0.00277	0.03737
FSH_OVARY_MCV152_UP	0	0.038959
UVC_HIGH_ALL_DN	0	0.039542
BYSTROM_IL5_DN	0	0.041405
BRCA1KO_MEF_DN	0	0.041777
PENG_GLUCOSE_DN	0	0.04187
CROMER_HYPOPHARYNGEAL_MET_VS_NON_UP	0	0.041927
TARTE_PLASMA_BLASTIC	0	0.044115
IDX_TSA_DN_CLUSTER4	0.009434	0.044443
ST_DICTYOSTELIUM_DISCOIDEUM_CAMP_CHEMOTAXIS_PATHWAY	0	0.044462
HSA04210_APOPTOSIS	0	0.044575
HSA00903_LIMONENE_AND_PINENE_DEGRADATION	0.01	0.044768
CPR_NULL_LIVER_UP	0	0.044907
JECHLINGER_EMT_DN	0.005195	0.045905
4NQO_UNIQUE_FIBRO_UP	0.004494	0.046245
CHANG_SERUM_RESPONSE_DN	0	0.046303
CHEMICALPATHWAY	0.009569	0.046345
BRCA1_OVEREXP_UP	0	0.046461
ET743_SARCOMA_72HRS_DN	0	0.046558
ST_ERK1_ERK2_MAPK_PATHWAY	0.005155	0.046579
PRMT5_KD_UP	0	0.046806
RADIATION_SENSITIVITY	0.009615	0.047231
P53_SIGNALING	0	0.051465
ZHAN_MULTIPLE_MYELOMA_VS_NORMAL_DN	0.005195	0.052949
NTHIPATHWAY	0.014493	0.053078
CHESLER_BRAIN_HIGHEST_VARIANCE_GENES	0.002688	0.053177
EMT_DN	0	0.053428
GUO_HEX_UP	0	0.05376
JISON_SICKLECELL_DIFF	0	0.053899
PARK_RARALPHA_UP	0	0.054178
CHEN_HOXA5_TARGETS_UP	0	0.054351
RCC_NL_UP	0	0.054489
P53PATHWAY	0.007126	0.054518
MMS_HUMAN_LYMPH_LOW_4HRS_DN	0.014599	0.05469
HCC_SURVIVAL_GOOD_VS_POOR_DN	0	0.054761
KLEIN_PEL_DN	0.005333	0.054767
APPEL_IMATINIB_UP	0	0.054951
FRASOR_ER_DN	0	0.054955
BADPATHWAY	0.005181	0.055138
PARK_MSCS_BOTH	0.002591	0.055318
TAKEDA_NUP8_HOXA9_3D_DN	0.007299	0.055362
MRNA_PROCESSING	0.002571	0.056716

FLECHNER_KIDNEY_TRANSPLANT_REJECTION_DN	0	0.05713
HSA00252_ALANINE_AND_ASPARTATE_METABOLISM	0.004938	0.057218
GSK3PATHWAY	0.005291	0.057496
IDX_TSA_DN_CLUSTER5	0	0.057537
ST_B_CELL_ANTIGEN_RECEPTOR	0	0.057643
DIAB_NEPH_DN	0	0.057695
PENG_RAPAMYCIN_DN	0	0.058109
LI_FETAL_VS_WT_KIDNEY_UP	0	0.058203
GENOTOXINS_ALL_24HRS_REG	0.014563	0.058217
ROME_INSULIN_2F_UP	0	0.059151
HSA00020_CITRATE_CYCLE	0.012376	0.059516
CANCER_UNDIFFERENTIATED_META_UP	0	0.059534
SHEPARD_BMYB_MORPHOLINO_UP	0	0.05975
SCHUMACHER_MYC_UP	0.008287	0.059922
PENG_GLUTAMINE_DN	0	0.060066
WALKER_MM_SNP_DIFF	0.012136	0.060303
HSC_STHSC_FETAL	0.010025	0.060489
HSA04115_P53_SIGNALING_PATHWAY	0.00271	0.060935
ADDYA_K562_HEMIN_TREATMENT	0.00277	0.06098
CITRATE_CYCLE_TCA_CYCLE	0.019512	0.061643
ADIP_VS_PREADIP_UP	0.005464	0.062243
CK1PATHWAY	0.021583	0.062383
FLECHNER_KIDNEY_TRANSPLANT_WELL_PBL_DN	0.002387	0.063134
FALT_BCLL_IG_MUTATED_VS_WT_DN	0.002494	0.063361
UVC_TTD_8HR_DN	0	0.063575
KNUDSEN_PMNS_UP	0.002801	0.063936
NICK_RHAPC_UP	0.014706	0.064222
H2O2_CSBRESCUED_UP	0.002882	0.064894
HSA05220_CHRONIC_MYELOID_LEUKEMIA	0	0.066329
PITX2PATHWAY	0.027714	0.06709
FATTY_ACID_METABOLISM	0.008242	0.068208
UVB_NHEK3_C1	0.005587	0.068368
HSA05213_ENDOMETRIAL_CANCER	0.011268	0.068384
LEE_TCELLS1_UP	0.003597	0.068911
AMINOACYL_TRNA_BIOSYNTHESIS	0.016393	0.069122
SERUM_FIBROBLAST_CORE_DN	0	0.069273
HSC_STHSC_SHARED	0.018824	0.069425
HSA00512_O_GLYCAN_BIOSYNTHESIS	0.02551	0.069875
H2O2_CSBDIFF_C1	0.011338	0.070505
SANA_TNFA_ENDOTHELIAL_UP	0	0.07101
AGED_MOUSE_RETINA_ANY_UP	0.0175	0.072117
FALT_BCLL_DN	0.005102	0.072648
IGF1MTORPATHWAY	0.016509	0.075168
LU_IL4BCELL	0.002762	0.075316
MMS_MOUSE_LYMPH_HIGH_24HRS_UP	0.023018	0.075487
HUMAN_CD34_ENRICHED_TRANSCRIPTION_FACTORS	0	0.075766
YAGI_AML_PROG_FAB	0	0.076018
VHL_NORMAL_UP	0	0.076375
HCMVPATHWAY	0.023364	0.077437
LI_FETAL_VS_WT_KIDNEY_DN	0	0.077655
HOFMANN_MANTEL_LYMPHOMA_VS_LYMPH_NODES_UP	0.002571	0.077656

LEE_TCELLS10_UP	0	0.080475
UVB_NHEK2_DN	0.006024	0.081097
LEE_TCELLS8_UP	0.003333	0.08314
CAMPTOTHECIN_PROBCELL_UP	0.025189	0.085047
MTORPATHWAY	0.017115	0.085338
LE_MYELIN_UP	0.00303	0.085572
AGUIRRE_PANCREAS_CHR12	0.023018	0.085633
AGUIRRE_PANCREAS_CHR1	0.012346	0.087233
ADIPOGENESIS_HMSC_CLASS3_UP	0.005556	0.087541
NOUZOVA_CPG_H4_UP	0.003155	0.087547
GOLDRATH_HP	0	0.087666
HSA00563_GLYCOSYLPHOSPHATIDYLINOSITOL_ANCHOR_BIOSYNTHESIS	0.009926	0.087768
APOPTOSIS_GENMAPP	0.010638	0.091895
VIPPATHWAY	0.034211	0.094099
HSA05212_PANCREATIC_CANCER	0.006757	0.094119
SMITH_HTERT_UP	0.003322	0.095149
HSA00624_1_AND_2_METHYLNAPHTHALENE_DEGRADATION	0.026247	0.09579
UVB_NHEK3_ALL	0	0.096181
RIBAVIRIN_RSV_DN	0.012953	0.096502
AGEING_BRAIN_UP	0	0.096734
BASSO_GERMINAL_CENTER_CD40_UP	0.003021	0.096891
CHOLESTEROL_BIOSYNTHESIS	0.023981	0.096975
IGLESIAS_E2FMINUS_UP	0	0.097337
AGED_MOUSE_HIPPOCAMPUS_ANY_UP	0.021053	0.097701
DAVIES_MGUS_MM	0.033175	0.09808
UVC_HIGH_D5_DN	0.028497	0.098594
DEATHPATHWAY	0.022167	0.099116
SMITH_HTERT_DN	0.008746	0.099243
ZHAN_MMPC_LATEVS	0.013158	0.099729
HSA04120_UBIQUITIN_MEDIATED_PROTEOLYSIS	0.017722	0.100339
CANCERDRUGS_PROBCELL_UP	0.031746	0.100861
CELL_CYCLE_KEGG	0.017094	0.104589
HSA04110_CELL_CYCLE	0.003012	0.106579
HADDAD_HPCLYMPHO_ENRICHED	0	0.106682
KREBS_TCA_CYCLE	0.026525	0.106728
GLUTAMATE_METABOLISM	0.036082	0.107106
HSA01510_NEURODEGENERATIVE_DISEASES	0.019231	0.107107
H2O2_CSBDIFF_C2	0.028205	0.107281
UEDA_MOUSE_LIVER	0	0.107386
HSA00650_BUTANOATE_METABOLISM	0.010753	0.107388
CIS_XPC_DN	0	0.107404
VERHAAK_AML_NPM1_MUT_VS_WT_UP	0.003367	0.107551
TAKEDA_NUP8_HOXA9_8D_DN	0.003571	0.107619
HSA05215_PROSTATE_CANCER	0.009434	0.107825
HSA05214_GLIOMA	0.008264	0.111909
HADDAD_HSC_CD10_UP	0	0.112272
ALCALAY_AML_NPMC_DN	0.003584	0.113865
HDACI_COLON_BUT_DN	0	0.114456
TRNA_SYNTHETASES	0.042929	0.115652
UV-4NQO_FIBRO_UP	0.03038	0.115984
ADIP_DIFF_CLUSTER5	0.035897	0.117738

METHOTREXATE_PROBCELL_UP	0.03163	0.120228
YAGI_AML_PROGNOSIS	0.033679	0.121745
IFNA_HCMV_6HRS_UP	0.026178	0.121799
BRENTANI_IMMUNE_FUNCTION	0.026087	0.121961
HSA00760_NICOTINATE_AND_NICOTINAMIDE_METABOLISM	0.033654	0.122213
SANSOM_APC_LOSS5_UP	0.017647	0.122982
CANTHARIDIN_DN	0.005141	0.123333
HSA05221_ACUTE_MYELOID_LEUKEMIA	0.029412	0.123347
BAF57_BT549_DN	0	0.126414
HSA04130_SNARE_INTERACTIONS_IN_VESICULAR_TRANSPORT	0.029126	0.127121
HSA04640_HEMATOPOIETIC_CELL_LINEAGE	0.025714	0.12759
ROSS_CBF_MYH	0.01084	0.12918
BLEO_HUMAN_LYMPH_HIGH_24HRS_UP	0	0.129427
LEE_DENA_UP	0.013774	0.129593
GALE_FLT3ANDAPL_UP	0.031088	0.132082
CHIARETTI_T_ALL_DIFF	0	0.132116
HDACI_COLON_BUT48HRS_DN	0.0033	0.133136
CIRCADIAN_EXERCISE	0.025063	0.133216
HSA04664_FC_EPSILON_RI_SIGNALING_PATHWAY	0.014793	0.133519
HDACI_COLON_BUT16HRS_DN	0.005917	0.133778
SERUM_FIBROBLAST_CELLCYCLE	0.009554	0.134152
CELL_CYCLE	0.02454	0.13439
UVB_NHEK3_C5	0.029851	0.134479
HSA00562_INOSITOL_PHOSPHATE_METABOLISM	0.023747	0.134842
BRG1_ALAB_DN	0.023196	0.134906
ST_PHOSPHOINOSITIDE_3_KINASE_PATHWAY	0.026455	0.13514
MRNA_PROCESSING_REACTOME	0.00627	0.135253
HEARTFAILURE_ATRIA_DN	0.02349	0.135255
IL7PATHWAY	0.043379	0.135398
SRC_ONCOGENIC_SIGNATURE	0.027322	0.135986
UEDA_MOUSE_SCN	0.009202	0.136264
HDACI_COLON_BUT24HRS_DN	0.012384	0.136377
HESS_HOXAANMEIS1_UP	0.018018	0.136759
FERRANDO_MLL_T_ALL_DN	0.020772	0.136879
BASSO_REGULATORY_HUBS	0.007326	0.136945
ALANINE_AND_ASPARTATE_METABOLISM	0.045822	0.137189
AGED_RHESUS_DN	0.006173	0.138163
PENG_GLYTAMINE_UP	0	0.138256
RUTELLA_HEPATGFSNDCS_UP	0.006873	0.138504
HESS_HOXAANMEIS1_DN	0.0125	0.139203
CROONQUIST_IL6_STARVE_UP	0.044156	0.141315
STRESS_ARSENIC_SPECIFIC_UP	0.007273	0.142629
PEART_HISTONE_DN	0.011662	0.143136
CHIARETTI_T_ALL	0.008	0.144875
LIAN_MYELOID_DIFF_TF	0.046997	0.147265
ZHAN_MM_CD138_MF_VS_REST	0.048128	0.147752
NELSON_ANDROGEN_UP	0.042169	0.148871
BRCA2_BRCA1_DN	0.044737	0.150049
EGF_HDMEC_UP	0.032345	0.153218
GH_GHRHR_KO_24HRS_DN	0	0.154258
HSA04650_NATURAL_KILLER_CELL_MEDIATED_CYTOTOXICITY	0.011765	0.154337

STRESS_GENOTOXIC_SPECIFIC_DN	0.040431	0.157483
BREASTCA_TWO_CLASSES	0.02349	0.159485
CTNNB1_ONCOGENIC_SIGNATURE	0.022472	0.159868
VERNELL_PRB_CLSTR1	0.034121	0.164311
AGED_MOUSE_HYPOTH_UP	0.04	0.164858
WIELAND_HEPATITIS_B_INDUCED	0.024922	0.164884
ROSS_MLL_FUSION	0.035714	0.167923
HSA05211_RENAL_CELL_CARCINOMA	0.021084	0.16942
HEMATOPOESIS_RELATED_TRANSCRIPTION_FACTORS	0.023324	0.17003
TPA_SENS_LATE_DN	0.016807	0.170659
BYSTRYKH_HSC_CIS_GLOCUS	0.007168	0.171265
MOREAUX_TACI_HI_IN_PPC_UP	0.034853	0.171388
UVB_NHEK3_C0	0.022222	0.177839
NGUYEN_KERATO_DN	0.021672	0.179131
BYSTRYKH_HSC_BRAIN_CIS_GLOCUS	0.025	0.179234
FLOTHO_CASP8AP2_MRD_DIFF	0.033951	0.179803
PASSERINI_APOPTOSIS	0.049724	0.180836
HOFFMANN_BIVSBII_IMVM	0.022013	0.1809
APOPTOSIS	0.032738	0.181063
AGEING_KIDNEY_DN	0.028213	0.183656
HDACI_COLON_SUL_DN	0.003759	0.187167
LEE_CIP_UP	0.048913	0.191036
FETAL_LIVER_ENRICHED_TRANSCRIPTION_FACTORS	0.023324	0.191343
TAKEDA_NUP8_HOXA9_10D_DN	0.011799	0.191757
LINDSTEDT_DEND_8H_VS_48H_UP	0.047059	0.194032
HDACI_COLON_SUL48HRS_UP	0.036036	0.195578
ALZHEIMERS_INCIPIENT_DN	0.013333	0.196193
AGEING_KIDNEY_SPECIFIC_DN	0.041009	0.196505
ICHIBA_GVHD	0.014563	0.200199
HOHENKIRK_MONOCYTE_DEND_DN	0.028754	0.200981
HOFFMANN_BIVSBII_BI_TABLE2	0	0.201136
LH_GRANULOSA_UP	0.038123	0.201409
HYPOXIA_NORMAL_UP	0.014599	0.202289
FSH_GRANULOSA_UP	0.042373	0.202452
HOFFMANN_BIVSBII_LGBII	0.016502	0.20396
CMV_HCMV_TIMECOURSE_ALL_UP	0.011976	0.203993
FERNANDEZ_MYC_TARGETS	0.026217	0.204937
TAKEDA_NUP8_HOXA9_16D_DN	0.020979	0.20768
HSC_EARLYPROGENITORS_ADULT	0	0.215215
HSA04620_TOLL_LIKE_RECEPTOR_SIGNALING_PATHWAY	0.047022	0.217573
CMV_24HRS_UP	0.049231	0.21942
IDX_TSA_UP_CLUSTER5	0.044872	0.220865
KRETZSCHMAR_IL6_DIFF	0.022801	0.226705
HYPOXIA_RCC_UP	0.044444	0.227625
IDX_TSA_UP_CLUSTER6	0.037037	0.229323
ALCALAY_AML_NPMC_UP	0.047458	0.23114
BRCA1_OVEREXP_DN	0.041812	0.239017
HDACI_COLON_SUL_UP	0.04902	0.241163
HSC_EARLYPROGENITORS_FETAL	0.00565	0.241421
HSC_EARLYPROGENITORS_SHARED	0.016043	0.242149

Experiment 1

<u>Gene Set</u>	<u>p-value</u>	<u>FDR</u>
GOLDRATH_CELLCYCLE	0	0.004462
STEMCELL_COMMON_UP	0	0.104286
HSA00624_1_AND_2_METHYLNAPHTHALENE_DEGRADATION	0	0.109147
HSA00563_GLYCOSYLPHOSPHATIDYLINOSITOL_ANCHOR_BIOSYNTHESIS	0	0.132197
HSA00632_BENZOATE_DEGRADATION_VIA_COA_LIGATION	0	0.148205
PENG_RAPAMYCIN_DN	0	0.153769
LE_MYELIN_UP	0	0.1549
BRCA_PROGNOSIS_NEG	0	0.157778
MOREAUX_TACI_HI_IN_PPC_UP	0	0.158326
CELL_CYCLE_KEGG	0	0.160331
WANG_MLL_CBP_VS_GMP_DN	0.002597	0.160735
UVC_TTD-XPCS_COMMON_DN	0	0.161868
CELL_CYCLE	0	0.162724
YU_CMYC_UP	0	0.164306
KREBS_TCA_CYCLE	0	0.166722
CANCER_UNDIFFERENTIATED_META_UP	0.002874	0.167192
CHOLESTEROL_BIOSYNTHESIS	0.010025	0.171841
WNTPATHWAY	0.004938	0.172716
SERUM_FIBROBLAST_CELLCYCLE	0	0.173505
CERAMIDEPATHWAY	0.007576	0.175074
GREENBAUM_E2A_UP	0.00545	0.175203
CITRATE_CYCLE_TCA_CYCLE	0.011737	0.176029
MOREAUX_TACI_HI_VS_LOW_DN	0	0.183938
HSA03050_PROTEASOME	0.013986	0.189776
GOLDRATH_CYTOLYTIC	0.002494	0.191318
FLECHNER_KIDNEY_TRANSPLANT_REJECTION_PBL_UP	0.00551	0.193149
BREAST_DUCTAL_CARCINOMA_GENES	0.017241	0.194818
HSA00903_LIMONENE_AND_PINENE_DEGRADATION	0.00978	0.194992
ROTH_HTERT_DIFF	0.018277	0.19564
ADIP_VS_PREADIP_UP	0.015228	0.196429
UVB_SCC_UP	0.005618	0.196595
ADIP_DIFF_CLUSTER4	0.012315	0.196838
HSA00020_CITRATE_CYCLE	0.024096	0.198962
UVB_NHEK3_C1	0.002793	0.199318
GENOTOXINS_ALL_4HRS_REG	0.019774	0.199545
CROONQUIST_IL6_STARVE_UP	0.01269	0.199577
PENG_LEUCINE_DN	0	0.199674
FALT_BCCL_IG_MUTATED_VS_WT_DN	0.005222	0.200563
HSA00970_AMINOACYL_TRNA_BIOSYNTHESIS	0.002469	0.200783
ESR_FIBROBLAST_DN	0.0175	0.20209
LI_FETAL_VS_WT_KIDNEY_DN	0	0.2038
G1_TO_S_CELL_CYCLE_REACTOME	0.002817	0.204606
ERM_KO_TESTES_DN	0.012755	0.205221
AMINOACYL_TRNA_BIOSYNTHESIS	0.014815	0.205276
FLECHNER_KIDNEY_TRANSPLANT_WELL_UP	0	0.20582
UVC_HIGH_D3_DN	0.011594	0.205994
PROTEASOME	0.0199	0.207017
ZHAN_MMPC_PC	0.0199	0.207796

HSA00650_BUTANOATE_METABOLISM	0.005141	0.208177
NICK_RHAPC_UP	0.023866	0.208613
VIPPATHWAY	0.012346	0.209303
HSA04110_CELL_CYCLE	0	0.209445
HSA00100_BIOSYNTHESIS_OF_STEROIDS	0.021687	0.209828
DNA_REPLICATION_REACTOME	0.002725	0.21018
SANA_IFNG_ENDOTHELIAL_UP	0.002703	0.210289
SIG_BCR_SIGNALING_PATHWAY	0	0.210458
LEE_TCELLS8_UP	0	0.210468
MMS_HUMAN_LYMPH_LOW_4HRS_DN	0.019048	0.210616
YU_CMYC_DN	0.005764	0.211616
LINDSTEDT_DEND_8H_VS_48H_DN	0	0.211946
BRENTANI_DNA_METHYLATION_AND_MODIFICATION	0.017812	0.212533
DOX_RESIST_GASTRIC_DN	0.033735	0.213254
LINDSTEDT_DEND_DN	0.013966	0.213501
AGUIRRE_PANCREAS_CHR1	0.024876	0.21493
MANALO_HYPOXIA_DN	0.008982	0.216811
LEE_TCELLS10_UP	0.003546	0.223663
CMV_HCMV_TIMECOURSE_18HRS_UP	0.009317	0.223924
FLOTHO_CASP8AP2_MRD_DIFF	0.008403	0.224453
HSC_STHSC_ADULT	0.027919	0.226237
IFNA_HCMV_6HRS_UP	0.014749	0.235057
VERNELL_PRB_CLSTR1	0.019126	0.246323
GALE_FLT3ANDAPL_UP	0.028497	0.24699
LEE_TCELLS1_UP	0.0033	0.247035
HDACI_COLON_SUL30MIN_DN	0.023981	0.247665
UV-4NQO_FIBRO_UP	0.032258	0.249644
CITED1_KO_HET_DN	0.022005	0.249921

Experiment 2

<u>Gene Set</u>	<u>p-value</u>	<u>FDR</u>
MOOTHA_VOXPPOS	0	6.59E-04
ELECTRON_TRANSPORT_CHAIN	0	9.89E-04
HSA00190_OXIDATIVE_PHOSPHORYLATION	0	0.001978
CMV_HCMV_TIMECOURSE_18HRS_UP	0	0.002645
ZHAN_MULTIPLE_MYELOMA_VS_NORMAL_DN	0	0.002696
FLECHNER_KIDNEY_TRANSPLANT_WELL_UP	0	0.002865
ROSS_CBF_MYH	0	0.002895
UVC_TTD-XPCS_COMMON_DN	0	0.00302
ZHAN_MMPC_PC	0	0.003061
UVB_NHEK1_C6	0	0.003126
OXIDATIVE_PHOSPHORYLATION	0	0.003126
CISPLATIN_PROBCELL_UP	0	0.003401
UVB_NHEK1_DN	0	0.003524
UVC_TTD_4HR_DN	0	0.003552
DOX_RESIST_GASTRIC_DN	0	0.003828
CMV_HCMV_TIMECOURSE_16HRS_UP	0	0.004633
UVC_TTD_ALL_DN	0	0.005194
DAVIES_MGUS_MM	0	0.005277
UVC_XPCS_ALL_DN	0	0.005621

UVC_XPCS_4HR_DN	0	0.005815
TAKEDA_NUP8_HOXA9_3D_DN	0	0.007521
ADDYA_K562_HEMIN_TREATMENT	0	0.007531
4NQO_UNIQUE_FIBRO_UP	0	0.007784
HOGERKORP_ANTI_CD44_UP	0.002257	0.010422
UVB_NHEK1_C1	0	0.010545
BYSTROM_IL5_DN	0	0.011542
GSK3PATHWAY	0.00237	0.012568
UVB_SCC_DN	0	0.012622
HSC_MATURE_SHARED	0	0.012891
IGLESIAS_E2FMINUS_UP	0	0.013016
LAL_KO_3MO_UP	0	0.013053
TAVOR_CEBP_UP	0	0.013292
UVC_HIGH_D6_DN	0	0.01337
UVC_XPCS_8HR_DN	0	0.013611
EGF_HDMEC_UP	0	0.01623
HSC_MATURE_ADULT	0	0.017293
BLEO_HUMAN_LYMPH_HIGH_24HRS_UP	0	0.017492
PAR1PATHWAY	0.002315	0.017931
APPEL_IMATINIB_UP	0.009132	0.020307
SIG_BCR_SIGNALING_PATHWAY	0	0.021221
GUO_HEX_UP	0	0.024324
HSA04662_B_CELL_RECEPTOR_SIGNALING_PATHWAY	0	0.026232
CANCERDRUGS_PROBCELL_UP	0	0.027111
KNUDSEN_PMNS_UP	0	0.027464
PARK_RARALPHA_UP	0.002336	0.028013
CHEN_HOXA5_TARGETS_UP	0	0.028313
BADPATHWAY	0	0.028361
PPARAPATHWAY	0	0.028481
ET743_RESIST_DN	0.004494	0.028786
IL7PATHWAY	0.002257	0.029149
HSA00512_O_GLYCAN_BIOSYNTHESIS	0.002342	0.029461
FSH_OVARY_MCV152_UP	0.00237	0.029656
VERHAAK_AML_NPM1_MUT_VS_WT_UP	0	0.029698
DIAB_NEPH_DN	0	0.030661
IDX_TSA_DN_CLUSTER2	0	0.030902
REOVIRUS_HEK293_UP	0	0.031125
MRNA_PROCESSING_REACTOME	0	0.031163
CPR_LOW_LIVER_DN	0.002237	0.034307
ET743_SARCOMA_48HRS_DN	0	0.034591
UEDA_MOUSE_LIVER	0	0.035932
HSA05213_ENDOMETRIAL_CANCER	0	0.035968
LAL_KO_6MO_UP	0.0025	0.03643
HSA04210_APOPTOSIS	0	0.036538
BASSO_GERMINAL_CENTER_CD40_UP	0	0.036953
UVB_NHEK2_UP	0	0.038306
JECHLINGER_EMT_DN	0.004728	0.040885
UVB_SCC_UP	0	0.042936
SPPAPATHWAY	0.004484	0.043119
EMT_DN	0.004878	0.043142
METHOTREXATE_PROBCELL_UP	0.004494	0.043272

MTORPATHWAY	0.002188	0.043386
BRCA1_SW480_UP	0.002304	0.04387
TNFALPHA_4HRS_UP	0	0.044159
CHANG_SERUM_RESPONSE_DN	0	0.045199
HDACI_COLON_BUT24HRS_DN	0	0.048671
LI_FETAL_VS_WT_KIDNEY_UP	0	0.048813
AGED_MOUSE_RETINA_ANY_UP	0.013216	0.049317
CHEMICALPATHWAY	0.004831	0.049359
HSC_MATURE_FETAL	0	0.049442
VHL_NORMAL_UP	0	0.049535
CHIARETTI_T_ALL	0	0.050025
CAMPTOTHECIN_PROBCELL_UP	0.015419	0.050606
ET743_SARCOMA_72HRS_UP	0	0.050676
ADIP_DIFF_CLUSTER5	0.002299	0.050759
AGED_MOUSE_HIPPOCAMPUS_MULTI_UP	0.009195	0.051151
BRCA2_BRCA1_DN	0	0.051261
BRCA1KO_MEF_DN	0	0.051297
MRNA_PROCESSING	0.002358	0.051458
ST_INTERLEUKIN_4_PATHWAY	0.008811	0.052007
AGED_MOUSE_HYPOTH_UP	0.005	0.05226
H2O2_CSBRESCUED_UP	0	0.052819
AGED_MOUSE_HIPPOCAMPUS_ANY_UP	0.009434	0.056358
ET743_SARCOMA_24HRS_DN	0	0.056424
SERUM_FIBROBLAST_CORE_DN	0	0.056996
HSA05215_PROSTATE_CANCER	0.002494	0.057314
CHIARETTI_T_ALL_DIFF	0	0.057463
HSA03010_RIBOSOME	0.005305	0.057704
TAKEDA_NUP8_HOXA9_8D_DN	0	0.057834
FETAL_LIVER_ENRICHED_TRANSCRIPTION_FACTORS	0	0.057887
NEMETH_TNF_UP	0	0.057896
HSA05214_GLIOMA	0.002475	0.058086
BRG1_ALAB_DN	0.007194	0.058177
FLECHNER_KIDNEY_TRANSPLANT_REJECTION_DN	0	0.058405
ZHAN_MMPC_LATEVS	0.004831	0.058869
IRITANI_ADPROX_DN	0.004808	0.059448
TCELL_ANERGIC_UP	0.002488	0.059753
TNFALPHA_ALL_UP	0	0.059979
SIG_PIP3_SIGNALING_IN_B_LYMPHOCYTES	0.007194	0.062012
GREENBAUM_E2A_UP	0.011574	0.066502
UVC_HIGH_D3_DN	0.009456	0.068106
UBIQUINONE_BIOSYNTHESIS	0.010823	0.068673
KLEIN_PEL_DN	0.002433	0.070341
HOGERKORP_CD44_UP	0.02	0.070526
ST_B_CELL_ANTIGEN_RECEPTOR	0.004706	0.071547
P53PATHWAY	0.022222	0.071608
PENG_Glutamine_DN	0	0.072536
HSC_LATEPROGENITORS_SHARED	0	0.072656
ET743_SARCOMA_DN	0	0.073454
HSA04640_HEMATOPOIETIC_CELL_LINEAGE	0.002618	0.073473
HDACI_COLON_CLUSTER6	0	0.073671
PITX2PATHWAY	0.013129	0.073753

HSA01510_NEURODEGENERATIVE_DISEASES	0.007059	0.073783
GAMMA-UV_FIBRO_UP	0	0.074311
MYOD_NIH3T3_DN	0.002347	0.074553
TRANSLATION_FACTORS	0	0.074667
HCC_SURVIVAL_GOOD_VS_POOR_DN	0	0.078256
STEMCELL_COMMON_UP	0	0.078565
PENG_GLUKOSE_DN	0	0.078787
SA_PTEN_PATHWAY	0.029885	0.078966
FSH_OVARY_MCV152_DN	0.009592	0.079017
BRCA1_OVEREXP_UP	0	0.079045
HUMAN_CD34_ENRICHED_TRANSCRIPTION_FACTORS	0	0.079152
HSC_LATEPROGENITORS_ADULT	0	0.079309
KIM_TH_CELLS_DN	0.014925	0.079438
PTENPATHWAY	0.021505	0.079475
HSA00760_NICOTINATE_AND_NICOTINAMIDE_METABOLISM	0.025862	0.079914
LINDSTEDT_DEND_DN	0.009434	0.079972
LEE_DENA_UP	0.011655	0.080075
WELCH_GATA1	0.029613	0.081613
MITOCHONDRIAL_FATTY_ACID_BETAOXIDATION	0.021645	0.081637
HSC_LATEPROGENITORS_FETAL	0	0.081927
ST_P38_MAPK_PATHWAY	0.009547	0.081984
JISON_SICKLECELL_DIFF	0	0.082102
RIBAVIRIN_RSV_DN	0.009501	0.082145
HSA05220_CHRONIC_MYELOID_LEUKEMIA	0	0.082368
UVC_HIGH_ALL_DN	0	0.082401
TAKEDA_NUP8_HOXA9_16D_DN	0	0.08266
CMV_HCMV_TIMECOURSE_ALL_UP	0	0.082711
UVC_TTD_8HR_DN	0	0.083492
RCC_NL_UP	0	0.08597
YAGI_AML_PROG_FAB	0	0.08646
IGF1MTORPATHWAY	0.017978	0.086608
BYSTROM_IL5_UP	0.009412	0.08823
HSA04670_LEUKOCYTE_TRANSENDOTHELIAL_MIGRATION	0.005115	0.088937
YU_CMYC_DN	0.009709	0.089024
KANNAN_P53_UP	0.006772	0.089119
AGEING_BRAIN_UP	0	0.089316
HEMATOPOESIS_RELATED_TRANSCRIPTION_FACTORS	0	0.089734
CROMER_HYPOPHARYNGEAL_MET_VS_NON_UP	0.005051	0.089774
ET743_SARCOMA_72HRS_DN	0	0.090142
SCHURINGA_STAT5A_UP	0.033708	0.090563
LIAN_MYELOID_DIFF_RECEPTORS	0.004673	0.090931
ADIP_HUMAN_UP	0.014151	0.092269
IDX_TSA_DN_CLUSTER4	0.027335	0.095299
PRMT5_KD_UP	0.002747	0.095397
H2O2_CSBRESCUED_C1_UP	0.022556	0.097066
HADDAD_HPCLYMPHO_ENRICHED	0	0.098018
GCRPATHWAY	0.025463	0.100363
KENNY_WNT_DN	0.009412	0.100783
FERRANDO_MLL_T_ALL_DN	0.015424	0.100995
HSA05221_ACUTE_MYELOID_LEUKEMIA	0.007481	0.101142
ZHAN_MM_CD138_MF_VS_REST	0.011338	0.101183

FLECHNER_KIDNEY_TRANSPLANT_REJECTION_PBL_UP	0.00716	0.101457
WELCSH_BRCA_UP	0.014286	0.101851
UVB_NHEK3_C2	0.013921	0.102185
LINDSTEDT_DEND_8H_VS_48H_DN	0.012107	0.10298
TNFA_NFKB_DEP_UP	0.03386	0.103225
AGUIRRE_PANCREAS_CHR12	0.012315	0.103322
HSA05211_RENAL_CELL_CARCINOMA	0.004938	0.10349
HDACI_COLON_BUT_DN	0	0.103707
AGED_RHESUS_DN	0.002667	0.104366
CHREBPPATHWAY	0.033482	0.10514
ALZHEIMERS_INCIPIENT_UP	0	0.107168
ALCALAY_AML_NPMC_DN	0.00271	0.107191
HSA04664_FC_EPSILON_RI_SIGNALING_PATHWAY	0.017115	0.107241
HSA04120_UBIQUITIN_MEDIATED_PROTEOLYSIS	0.028369	0.108609
CELL_PROLIFERATION	0	0.108837
HIVNEFPATHWAY	0.016393	0.109086
CARIES_PULP_UP	0	0.109152
RARRXRPATHWAY	0.029613	0.109309
UVB_NHEK2_DN	0.004938	0.10949
GOLDRATH_HP	0	0.109569
VANASSE_BCL2_TARGETS	0.005208	0.109659
APOPTOSIS_KEGG	0.009456	0.109683
NFKBPATHWAY	0.041667	0.110225
ST_DICTYOSTELIUM_DISCOIDEUM_CAMP_CHEMOTAXIS_PATHWAY	0.033784	0.110229
HIPPOCAMPUS_DEVELOPMENT_NEONATAL	0.026201	0.110384
CPR_NULL_LIVER_UP	0.028037	0.110387
SHEPARD_CELL_PROLIFERATION	0	0.111479
IDX_TSA_DN_CLUSTER5	0.0199	0.111949
STRESS_ARSENIC_SPECIFIC_UP	0.005263	0.115032
CMV_8HRS_DN	0.02451	0.115152
AGED_MOUSE_CORTEX_DN	0.021277	0.1154
MITOCHONDRIAPATHWAY	0.03304	0.115686
WALKER_MM_SNP_DIFF	0.022573	0.115976
HSA04612_ANTIGEN_PROCESSING_AND_PRESENTATION	0.028571	0.116235
HADDAD_HSC_CD10_UP	0	0.119246
RUTELLA_HEPATGFSNDCS_UP	0.005362	0.12212
BRACX_UP	0.030369	0.122697
FALT_BCLL_IG_MUTATED_VS_WT_DN	0.016746	0.125872
ROSS_FAB_M7	0.01292	0.128582
NOS1PATHWAY	0.036036	0.129882
SHEPARD_BMYB_MORPHOLINO_UP	0.005479	0.133235
ST_PHOSPHOINOSITIDE_3_KINASE_PATHWAY	0.035794	0.133244
FATTY_ACID_METABOLISM	0.012225	0.133347
NI2_MOUSE_UP	0.02439	0.133434
CHESLER_BRAIN_HIGHEST_VARIANCE_GENES	0.031963	0.133754
ADIPOGENESIS_HMSC_CLASS3_UP	0.022059	0.134252
TAKEDA_NUP8_HOXA9_10D_DN	0.007444	0.13641
HSA05110_CHOLERA_INFECTION	0.032258	0.137075
JISON_SICKLE_CELL	0.037221	0.137338
TARTE_PLASMA_BLASTIC	0	0.139041
ROME_INSULIN_2F_UP	0.002817	0.13928

RADIATION_SENSITIVITY	0.040512	0.140217
UVC_HIGH_D9_DN	0.045249	0.141962
FATTY_ACID_DEGRADATION	0.038278	0.143049
BREASTCA_TWO_CLASSES	0.002597	0.143391
LEE_MYC_E2F1_DN	0.027708	0.145447
BRCA_PROGNOSIS_NEG	0.015789	0.145997
KNUDSEN_PMNS_DN	0	0.146171
HDACI_COLON_BUT16HRS_DN	0.013263	0.146543
ALCALAY_AML_NPMC_UP	0.007653	0.14679
FLECHNER_KIDNEY_TRANSPLANT_WELL_PBL_UP	0.002558	0.149866
IDX_TSA_DN_CLUSTER3	0.012107	0.150472
ADIP_DIFF_CLUSTER1	0.041463	0.152031
HSA05120_EPITHELIAL_CELL_SIGNALING_IN_HELICOBACTER_PYLORI_IN	0.015982	0.152096
GLUTAMATE_METABOLISM	0.048055	0.152817
MOREAUX_TACI_HI_VS_LOW_DN	0.002924	0.152821
IRITANI_ADPROX_VASC	0.011396	0.153105
UVC_HIGH_D2_DN	0.031532	0.15323
DEATHPATHWAY	0.046512	0.153525
PARK_MSCS_LIN2	0.03632	0.153784
CIS_XPC_DN	0.005917	0.153826
AGEING_KIDNEY_UP	0	0.154118
NGUYEN KERATO_DN	0.019277	0.154268
HSA04650_NATURAL_KILLER_CELL_MEDIATED_CYTOTOXICITY	0.007895	0.154389
ZHAN_MM_CD138_LB_VS_REST	0.04814	0.154666
MRNA_SPLICING	0.032483	0.154759
UEDA_MOUSE_SCN	0.028497	0.155327
HOHENKIRK_MONOCYTE_DEND_DN	0.00838	0.157715
UV-CMV_UNIQUE_HCMV_6HRS_DN	0.025707	0.159342
BASSO_REGULATORY_HUBS	0.010959	0.159804
HSA04115_P53_SIGNALING_PATHWAY	0.034063	0.160129
HPV31_UP	0.025761	0.160199
LIAN_MYELOID_DIFF_TF	0.044346	0.160375
UVB_NHEK1_UP	0.007732	0.160828
GH_AUTOCRINE_UP	0.005556	0.160842
FERNANDEZ_MYC_TARGETS	0.010076	0.164639
ZHAN_MULTIPLE_MYELOMA_VS_NORMAL_UP	0.032099	0.165412
LIAN_MYELOID_DIFF_GRANULE	0.046771	0.167368
AGED_MOUSE_NEOCORTEX_UP	0.038071	0.168319
SANA_TNFA_ENDOTHELIAL_UP	0.026316	0.170334
LEE_CIP_UP	0.041262	0.170761
EMT_UP	0.034063	0.17081
YU_CMYC_UP	0.047859	0.171336
PENG_LEUCINE_UP	0.015228	0.171888
UVC_HIGH_D5_DN	0.043796	0.172527
MMS_MOUSE_LYMPH_HIGH_24HRS_UP	0.047733	0.173025
CARIES_PULP_HIGH_UP	0.022556	0.174459
GERY_CEBP_TARGETS	0.011396	0.175499
HOHENKIRK_MONOCYTE_DEND_UP	0.00978	0.175627
HDACI_COLON_BUT48HRS_DN	0.013514	0.175847
ET743_SARCOMA_UP	0.033097	0.176347
BROCKE_IL6	0.01084	0.178308

GOLDRATH_CELLCYCLE	0.035047	0.179657
LEI_MYB_REGULATED_GENES	0.00639	0.185362
SCHUMACHER_MYC_UP	0.039535	0.185555
AGEING_BRAIN_DN	0.015789	0.185865
FRASOR_ER_DN	0.035635	0.187226
KRETZSCHMAR_IL6_DIFF	0.01087	0.187797
TGFBETA_EARLY_UP	0.045024	0.187851
BRCA1_OVEREXP_PROSTATE_UP	0.005848	0.188262
ASTON_DEPRESSION_DN	0.020958	0.188442
UVB_NHEK3_ALL	0	0.191848
IRITANI_ADPROX_LYMPH	0.026895	0.195347
AGEING_KIDNEY_SPECIFIC_DN	0.022785	0.19537
KANG_TERT_UP	0.039164	0.196245
MANALO_HYPOXIA_UP	0.027027	0.19645
RIBOSOMAL_PROTEINS	0.035806	0.196571
HSA04630_JAK_STAT_SIGNALING_PATHWAY	0.036458	0.196584
APOPTOSIS	0.036364	0.196624
CHESLER_HIGHEST_FOLD_RANGE_GENES	0.042453	0.196738
HSA05218_MELANOMA	0.037879	0.196759
UVB_NHEK3_C0	0.029024	0.198288
NADLER_OBESITY_UP	0.043678	0.201085
HADDAD_HSC_CD7_DN	0.046341	0.20115
CMV_HCMV_TIMECOURSE_48HRS_UP	0.031785	0.204007
HSA05210_COLORECTAL_CANCER	0.035545	0.204524
UVB_NHEK3_C1	0.038369	0.204993
P53_SIGNALING	0.044665	0.206417
HSA05222_SMALL_CELL_LUNG_CANCER	0.038462	0.206959
IDX_TSA_UP_CLUSTER6	0.017192	0.207139
PENG_LEUCINE_DN	0.016807	0.207153
ICHIBA_GVHD	0.009434	0.207288
CIS_XPC_UP	0.024213	0.207322
NING_COPD_DN	0.032432	0.20861
TPA_SENS_EARLY_DN	0.003195	0.208968
BAF57_BT549_UP	0.009202	0.213634
BAF57_BT549_DN	0.012422	0.216771
OKUMURA_MC_LPS	0.018127	0.220614
BRENTANI_DEATH	0.04703	0.226819
BYSTRYKH_HSC_BRAIN_TRANS_GLOCUS	0.034682	0.233787
HYPOXIA_NORMAL_UP	0.0271	0.239849
HUMAN_MITODB_6_2002	0.007067	0.245815