

Supplementary Table SI. List of dataset information

items	GSE156063	GSE163151	GSE2411	GS17355
platform	GPL24676	GPL24034	GPL339	GPL4865
sequencing type	Expression profiling by high throughput sequencing	Expression profiling by high throughput sequencing	Expression profiling by array	Expression profiling by array
species	Homo sapiens	Homo sapiens	Mus musculus	Mus musculus
disease	COVID-19	COVID-19	ALI	ALI
tissue	upper airway cell	NP swap	whole mouse lung homogenate	mouse lung
samples in disease group	93	145	6	9
samples in control group	100	31	6	3
reference				

Supplementary Table SII. List of gene symbol of Co-DEGs

Symbol				
ABCB1	ARG2	ASB1	C2orf68	CAPRIN1
CDKN1A	CEL	CLPTM1	DDX24	DLG1
ELK4	GOSR2	IER5	LONP1	MAP3K7CL
MFSD9	MICAL1	PAGE1	POGK	PSD
PSMD13	RNF19B	RNF43	RPP30	SH2B2
SIM2	SLFN12	STAG2	TOR1A	TUBD1
UBE2D4	UPB1	VEZF1	ZBTB17	

Supplementary Table SIII. GO and KEGG enrichment analysis results

ONTOLOGY	ID	Description	GeneRatio	BgRatio	pvalue	qvalue
BP	GO:0051222	positive regulation of protein transport	2/14	293/18800	0.01946776 6	0.03771326 6
BP	GO:0060081	membrane hyperpolarization	1/14	11/18800	0.00816322	0.02542810 5
BP	GO:2001225	regulation of chloride transport	1/14	11/18800	0.00816322	0.02542810 5
CC	GO:0000502	proteasome complex	4/15	59/19594	9.87E-08	2.81E-06
CC	GO:0005838	proteasome regulatory particle	2/15	19/19594	9.28E-05	0.00048840 4
CC	GO:0031901	early endosome membrane	2/15	172/19594	0.00746229 2	0.02651077 4
MF	GO:0019869	chloride channel inhibitor activity	1/15	10/18410	0.00811991 5	0.03641893 3
MF	GO:0017081	chloride channel regulator activity	1/15	17/18410	0.01376719 4	0.04322644 3
MF	GO:0016887	ATP hydrolysis activity	2/15	325/18410	0.02803386	0.04834845 4
KEGG	hsa05171	Coronavirus disease - COVID-19	3/10	232/8164	0.00234456 6	0.00709539 6

Supplementary Table SIV. GSEA analysis of COVID-19-dataset (COVID-19/Control)

ID	setSize	enrichmentScore	NES	pvalue	qvalue
WP_MAPK_SIGNALING_PATHWAY	221	-0.337486617	-1.619489658	4.52E-05	0.00298461
KEGG_MAPK_SIGNALING_PATHWAY	234	-0.3243401	-1.566296878	0.000141143	0.00661695
REACTOME_PRE_NOTCH_PROCESSING_IN_GOLGI	18	-0.676375227	-1.966079541	0.00087906	0.02039703
REACTOME_SIGNALING_BY_HIPPO	20	0.672237312	1.87035365	0.00151912	0.029250073
PID_PI3KCI_PATHWAY	48	-0.475805368	-1.768290299	0.001762091	0.031863369
BIOCARTA_MAPK_PATHWAY	79	-0.401145314	-1.647751364	0.002349997	0.037653182
REACTOME_ACTIVATED_TAK1_MEDIATES_P38_MAPK_ACTIVATION	23	-0.585130485	-1.820874513	0.002627933	0.040565968
WP_PI3KAKTMTOR_SIGNALING_PATHWAY_AND_THERAPEUTIC OPPORTUNITIES	30	-0.540556932	-1.801287792	0.003282521	0.048882118
REACTOME_G_BETA_GAMMA_SIGNALING_THROUGH_PI3K_GAMMA	20	-0.590308423	-1.768181394	0.005967425	0.069617545
REACTOME_MAP2K_AND_MAPK_ACTIVATION	37	-0.479985417	-1.682501213	0.006518336	0.074331902
REACTOME_PRE_NOTCH_EXPRESSION_AND_PROCESSING	49	-0.436035335	-1.627582382	0.006788626	0.074398016
WP_MAPK_CASCADE	32	-0.499396807	-1.690628121	0.00748518	0.078402949
REACTOME_HEDGEHOG_ON_STATE	81	0.425012585	1.566993145	0.007624642	0.078491954
REACTOME_ERYTHROPOIETIN_ACTIVATES_PHOSPHOINOSITIDE_3_KINASE_PI3K	11	-0.684345109	-1.723565059	0.008907325	0.085368765

WP_PI3KAKT_SIGNALING_PATHWAY	277	-0.266084802	-1.310770016	0.009381841	0.088293201
REACTOME_WNT5A_DEPENDENT_INTERNALIZATION_OF_FZD4	15	-0.622294991	-1.716593649	0.009659334	0.089242621
REACTOME_SIGNALING_BY_HEDGEHOG	139	0.369272291	1.471930807	0.009569641	0.089242621
PID_IL2_STAT5_PATHWAY	27	-0.520373618	-1.686467207	0.009884962	0.090635219
REACTOME_FCERI_MEDIATED_MAPK_ACTIVATION	31	-0.493998125	-1.659260404	0.010241551	0.091615881
REACTOME_HEDGEHOG_OFF_STATE	106	0.386960253	1.48682975	0.012772653	0.10615447
PID_MAPK_TRK_PATHWAY	33	-0.469937717	-1.603461812	0.015003278	0.11981698
REACTOME_HEDGEHOG_LIGAND_BIOGENESIS	59	0.441774414	1.542003822	0.015653519	0.121509969
REACTOME_DECTIN_1_MEDIATED_NONCANONICAL_NF_KB_SIGNALING	59	0.438340128	1.530016522	0.017385924	0.130604866
REACTOME_CONSTITUTIVE_SIGNALING_BY_AKT1_E17K_IN_CANCER	26	-0.50017708	-1.607428782	0.019045768	0.138154343
REACTOME_NEGATIVE_REGULATION_OF_NOTCH4_SIGNALING	53	0.443898548	1.520271505	0.020936674	0.145364031
WP_MAPK_AND_NFKB_SIGNALING_PATHWAYS_INHIBITED_BY_YERSINIA_YOPJ	12	-0.622135932	-1.608655384	0.024829654	0.160762738
REACTOME_STAT5_ACTIVATION	7	-0.720207434	-1.575744549	0.026158836	0.164325458
PID_NFKAPPAB_CANONICAL_PATHWAY	22	-0.51367204	-1.578675563	0.027022535	0.167260831

Supplementary Table SV. GSVA analysis of dataset ALI-dataset (ALI /Control)

ID	setSize	enrichmentScore	NES	pvalue	qvalue
KEGG_JAK_STAT_SIGNALING_PATHWAY	78	0.691619562	2.276031601	1.35E-05	0.000528426
WP_PHOTODYNAMIC_THERAPYINDUCED_NFKB_SURVIVAL_SIGNALING	28	0.803064896	2.2053867	1.59E-05	0.000528426
REACTOME_TNFR2_NON_CANONICAL_NF_KB_PATHWAY	67	0.685618444	2.204702245	1.39E-05	0.000528426
REACTOME_DECTIN_1_MEDIATED_NONCANONICAL_NF_KB_SIGNALING	51	0.69192884	2.127717436	1.45E-05	0.000528426
REACTOME_FCERI_MEDIATED_NF_KB_ACTIVATION	59	0.637508463	2.008878062	1.42E-05	0.000528426
BIOCARTA_NFKB_PATHWAY	18	0.823905298	2.05849826	3.40E-05	0.000811221
WP_APOPTOSISRELATED_NETWORK_DUE_TO_ALTERED_NOTCH3_IN_OVARIAN_CANCER	36	0.67113185	1.936347444	0.000337072	0.004881423
REACTOME_RIP_MEDIATED_NFKB_ACTIVATION_VIA_ZBP1	15	0.799976101	1.920051598	0.000470588	0.006351746
PID_NFKAPPAB_CANONICAL_PATHWAY	17	0.77116672	1.903144816	0.000633518	0.007874881
KEGG_MAPK_SIGNALING_PATHWAY	158	0.456877044	1.64254647	0.000793813	0.0094137
WP_REGULATORY_CIRCUITS_OF_THE_STAT3_SIGNALING_PATHWAY	50	0.594426663	1.822144995	0.001120619	0.012427239
REACTOME_NEGATIVE_REGULATION_OF_NOTCH4_SIGNALING	44	0.6032296	1.80760091	0.001378064	0.014351301
REACTOME_TAK1_DEPENDENT_IKK_AND_NF_KAPPA_B_ACTIVATION	22	0.708296801	1.850353742	0.001582513	0.015720575
WP_MAPK_SIGNALING_PATHWAY	147	0.450658351	1.606656703	0.001655468	0.016160239

REACTOME_HEDGEHOG_LIGAND_BIOGENESIS	46	0.589169246	1.78040187	0.001854 659	0.017697583
KEGG_HEDGEHOG_SIGNALING_PATHWAY	25	-0.598621392	-1.82927469 1	0.002093 748	0.019091059
BIOCARTA_EPONFKB_PATHWAY	7	0.877050107	1.758660587	0.002243 063	0.020095287
REACTOME_P75NTR_SIGNALS_VIA_NF_KB	10	0.816454372	1.783335242	0.003043 045	0.02497219
WP_CANONICAL_AND_NONCANONICAL_NOTCH_SIGNALING	17	-0.637184701	-1.75774929 2	0.005481 033	0.038509491
REACTOME_MAPK6_MAPK4_SIGNALING	60	0.521714253	1.648649589	0.006429 914	0.042829468
REACTOME_RAF_INDEPENDENT_MAPK1_3_ACTIVATION	18	0.698068561	1.744099622	0.006546 06	0.043321806
REACTOME_TRAF6_MEDIATED_NF_KB_ACTIVATION	17	0.703336183	1.735747376	0.007208 41	0.046505104
BIOCARTA_MAPK_PATHWAY	66	0.50237087	1.612239053	0.008324 285	0.05097889
PID_WNT_CANONICAL_PATHWAY	12	-0.681626079	-1.70286048 5	0.008817 112	0.052891819
REACTOME_FCERI_MEDIATED_MAPK_ACTIVATION	22	0.643381962	1.680770293	0.011671 035	0.063542078
PID_WNT_SIGNALING_PATHWAY	18	-0.598664102	-1.67738817 4	0.011896 669	0.06422883
WP_WNT_SIGNALING_IN_KIDNEY_DISEASE	20	-0.570236967	-1.64509470 6	0.015315 494	0.076505212
WP_CANONICAL_NFKB_PATHWAY	7	0.817688756	1.639629224	0.015198 685	0.076505212
REACTOME_REGULATION_OF_NF_KAPPA_B_SIGNALING	10	0.755895302	1.651059481	0.015879 163	0.077936262
PID_NFKAPPAB_ATYPICAL_PATHWAY	11	0.740552883	1.652759027	0.016226 367	0.079261126
REACTOME_TNFR1_INDUCED_NFKAPPAB_SIGNALING_PATHWAY	15	0.691439492	1.659548953	0.016366 013	0.079724042

REACTOME_NF_KB_IS_ACTIVATED_AND_SIGNA LS_SURVIVAL	8	0.788456338	1.630584928	0.017975 258	0.085747787
REACTOME_NOTCH4_INTRACELLULAR_DOMAIN REGULATES_TRANSCRIPTION	10	-0.682721071	-1.61350681 6	0.018741 809	0.087546393
REACTOME_TNF_RECEPTOR_SUPERFAMILY_TNF SF_MEMBERS_MEDIATING_NON_CANONICAL_NF KB_PATHWAY	12	0.721342442	1.642679408	0.019048 305	0.088414256
REACTOME_NF_KB_ACTIVATION_THROUGH_FA DD_RIP_1_PATHWAY_MEDIATED_BY_CASPASE_8 AND_10	8	0.764760041	1.581579266	0.030727 588	0.123607986
REACTOME_GENE_AND_PROTEIN_EXPRESSION_ BY_JAK_STAT_SIGNALING_AFTER_INTERLEUKIN 12_STIMULATION	23	0.588187541	1.550411163	0.034437 52	0.13483071
REACTOME_MAPK_FAMILY_SIGNALING_CASCA DES	175	0.373865753	1.35824421	0.034387 408	0.13483071
WP_WNT_SIGNALING	64	-0.369327458	-1.40120768 1	0.034759 076	0.135030653
REACTOME_MAPK1_ERK2_ACTIVATION	9	0.737510696	1.570165725	0.035190 451	0.1354109
WP_NCRNAS_INVOLVED_IN_STAT3_SIGNALING_ IN_HEPATOCELLULAR_CARCINOMA	11	0.701751635	1.566162764	0.036427 282	0.137377657
WP_4249_HEDGEHOG_SIGNALING_PATHWAY	20	-0.530333287	-1.52997531 5	0.036811 796	0.13831924
WP_HOSTPATHOGEN_INTERACTION_OF_HUMAN CORONAVIRUSES_MAPK_SIGNALING	29	0.543008299	1.50217932	0.043999 81	0.156717161
PID_IL2_STAT5_PATHWAY	20	0.596294386	1.52547066	0.044242 749	0.157037184

Supplementary Table SVI. GSVA analysis of COVID-19-dataset (COVID-19/Control)

ontology	logFC	AveExpr	t	P.Value	adj.P.Val	B
HALLMARK_INTERFERON_ALPHA_RESPONSE	0.4799370 98	-0.023096 289	11.562631 02	8.05E-27	4.02E-25	50.03115948
HALLMARK_HEME_METABOLISM	-0.213136 721	-0.031675 682	-8.398485 98	8.29E-16	2.07E-14	24.96654322
HALLMARK_INTERFERON_GAMMA_RESPONSE	0.3061908 37	-0.011056 113	8.1504562 3	4.88E-15	8.14E-14	23.22094498
HALLMARK_MYC_TARGETS_V2	0.1140986 77	-0.002842 741	3.8935579 06	0.000116 019	0.001450 241	-0.005213499
HALLMARK_MTORC1_SIGNALING	0.0710529 8	-0.001049 913	2.9105504 1	0.003812 962	0.028514 631	-3.248886992
HALLMARK_HYPOXIA	-0.072148 342	-0.002310 483	-2.904882 51	0.003881 192	0.028514 631	-3.265005734
HALLMARK_MITOTIC_SPINDLE	-0.064554 427	-0.009638 139	-2.895864 496	0.003992 048	0.028514 631	-3.290589709
HALLMARK_TGF_BETA_SIGNALING	-0.069445 506	-0.001331 115	-2.545689 683	0.011286 661	0.060561 236	-4.224799318
HALLMARK_ESTROGEN_RESPONSE_LATE	0.0629999 34	0.0274638 29	2.5246972 44	0.011971 951	0.060561 236	-4.277115278
HALLMARK_PI3K_AKT_MTOR_SIGNALING	-0.073292 282	-0.017088 137	-2.512582 609	0.012384 063	0.060561 236	-4.307115733
HALLMARK_DNA_REPAIR	0.0620624 53	0.0021017 42	2.4743262 61	0.013769 474	0.060561 236	-4.400935335
HALLMARK_UNFOLDED_PROTEIN_RESPONSE	0.0647286 46	0.0063445 77	2.4546373 17	0.014534 697	0.060561 236	-4.448676561
HALLMARK_MYC_TARGETS_V1	0.0829742 8	0.0184558 77	2.3908654 87	0.017277 821	0.066453 159	-4.600767979

Supplementary Table SVII. GSVA analysis of dataset ALI-dataset (ALI /Control)

ontology	logFC	AveExpr	t	P.Value	adj.P.Val	B
HALLMARK_INTERFERON_GAMMA_RESPONSE	-0.758682054	-0.003043709	-6.230957375	4.48E-08	1.95E-06	8.277262069
HALLMARK_IL6_JAK_STAT3_SIGNALING	-0.752141565	-0.022953324	-6.089266083	7.81E-08	1.95E-06	7.737133062
HALLMARK_INTERFERON_ALPHA_RESPONSE	-0.825726258	-0.033817488	-5.873056669	1.81E-07	3.02E-06	6.918816269
HALLMARK_INFLAMMATORY_RESPONSE	-0.644469025	-0.001020089	-5.57933818	5.62E-07	7.02E-06	5.820505396
HALLMARK_ALLOGRAFT_REJECTION	-0.600816578	0.003178445	-5.297777918	1.64E-06	1.64E-05	4.784896534
HALLMARK_MYC_TARGETS_V2	-0.620539705	0.011006462	-5.046807665	4.18E-06	3.29E-05	3.878585751
HALLMARK_COMPLEMENT	-0.508763043	-0.00635667	-5.006260056	4.86E-06	3.29E-05	3.733808865
HALLMARK_TNFA_SIGNALING_VIA_NFKB	-0.710154634	-0.037771331	-4.98499534	5.26E-06	3.29E-05	3.658076153
HALLMARK_MTORC1_SIGNALING	-0.432761584	0.009801314	-4.176777051	9.39E-05	0.000521844	0.894069083
HALLMARK_IL2_STAT5_SIGNALING	-0.430768665	0.003056135	-4.130339712	0.000110087	0.000550436	0.742996591
HALLMARK_HYPOXIA	-0.37118692	-0.01940906	-3.80227268	0.000329414	0.001497335	-0.296115972
HALLMARK_EPITHELIAL_MESENCHYMAL_TRANSITION	-0.370214963	0.023595886	-3.6634713	0.000516411	0.002151713	-0.719887853
HALLMARK_COAGULATION	-0.34718597	-0.002493441	-3.633148314	0.000569032	0.002188583	-0.811132885
HALLMARK_UV_RESPONSE_UP	-0.342264067	-0.014777537	-3.570335697	0.000694746	0.002481237	-0.998579505

HALLMARK_APOPTOSIS	-0.337263486	-0.009010422	-3.44968315	0.001013929	0.003379763	-1.352571735
HALLMARK_P53_PATHWAY	-0.330409627	-0.001037359	-3.336900441	0.001434212	0.004314862	-1.676021685
HALLMARK_PI3K_AKT_MTOR_SIGNALING	-0.342630918	-0.000795698	-3.329462557	0.001467053	0.004314862	-1.697092984
HALLMARK_KRAS_SIGNALING_UP	-0.312638077	-0.011321552	-3.255993898	0.001831854	0.005088483	-1.903464157
HALLMARK_REACTIVE_OXYGEN_SPECIES_PATHWAY	-0.313281701	0.018729454	-2.895362386	0.005220615	0.01373846	-2.867865397
HALLMARK_ESTROGEN_RESPONSE_LATE	-0.257981365	0.003909052	-2.709495711	0.008697527	0.021743816	-3.331414967
HALLMARK_MYC_TARGETS_V1	-0.322650759	-0.028863665	-2.616493154	0.011140071	0.026523978	-3.554298481
HALLMARK_PANCREAS_BETA_CELLS	0.307505435	0.010133847	2.498771618	0.015120768	0.034365383	-3.827453954
HALLMARK_WNT_BETA_CATENIN_SIGNALING	0.254716655	-0.016577014	2.392473343	0.019772937	0.042984645	-4.065269435
HALLMARK_UNFOLDED_PROTEIN_RESPONSE	-0.274690874	-0.032055266	-2.311623766	0.024128509	0.050267728	-4.240401046
HALLMARK_HEDGEHOG_SIGNALING	0.261691009	0.0045379	2.244916094	0.028343121	0.056686241	-4.381087116
HALLMARK_BILE_ACID_METABOLISM	0.231880873	0.016178743	2.210556131	0.030757768	0.059149554	-4.452189106
HALLMARK_G2M_CHECKPOINT	-0.231946525	-0.009385916	-2.118555127	0.038134277	0.069561202	-4.637943414
HALLMARK_ANGIOGENESIS	-0.229270737	0.029943292	-2.109313333	0.038954273	0.069561202	-4.656227192

Supplementary Table SVIII. GSEA analysis of COVID-19-dataset (High/Low)

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REACTOME_G_BETA_GAMMA_SIGNALING_THROUGH_PI3KGAMMA	20	-0.590308423	-1.768181394	0.005967425	0.069617545
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REACTOME_ERYTHROPOIETIN_ACTIVATES_PHOSPHOINOSITIDE_3_KINASE_PI3K	11	-0.684345109	-1.723565059	0.008907325	0.085368765

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REACTOME_HEDGEHOG_LIGAND_BIOGENESIS	59	0.441774414	1.542003822	0.015653519	0.121509969
REACTOME_DECTIN_1_MEDIATED_NONCANONICAL_NF_KB_SIGNALING	59	0.438340128	1.530016522	0.017385924	0.130604866
REACTOME_CONSTITUTIVE_SIGNALING_BY_AKT1_E17K_IN_CANCER	26	-0.50017708	-1.607428782	0.019045768	0.138154343
REACTOME_NEGATIVE_REGULATION_OF_NOTCH4_SIGNALING	53	0.443898548	1.520271505	0.020936674	0.145364031
WP_MAPK_AND_NFKB_SIGNALING_PATHWAYS_INHIBITED_BY_YERSINIA_YOPJ	12	-0.622135932	-1.608655384	0.024829654	0.160762738
REACTOME_STAT5_ACTIVATION	7	-0.720207434	-1.575744549	0.026158836	0.164325458
PID_NFKAPPAB_CANONICAL_PATHWAY	22	-0.51367204	-1.578675563	0.027022535	0.167260831

Supplementary Table SIX. GSVA analysis of dataset ALI-dataset (High/Low)

ID	setSize	enrichmentScore	NES	pvalue	qvalue
KEGG_JAK_STAT_SIGNALING_PATHWAY	78	0.691619562	2.276031601	1.35E-05	0.000528426
WP_PHOTODYNAMIC_THERAPYINDUCED_NFKB_SURVIVAL_SIGNALING	28	0.803064896	2.2053867	1.59E-05	0.000528426
REACTOME_TNFR2_NON_CANONICAL_NF_KB_PATHWAY	67	0.685618444	2.204702245	1.39E-05	0.000528426
REACTOME_DECTIN_1_MEDIATED_NONCANONICAL_NF_KB_SIGNALING	51	0.69192884	2.127717436	1.45E-05	0.000528426
REACTOME_FCERI_MEDIATED_NF_KB_ACTIVATION	59	0.637508463	2.008878062	1.42E-05	0.000528426
BIOCARTA_NFKB_PATHWAY	18	0.823905298	2.05849826	3.40E-05	0.000811221
WP_APOPTOSISRELATED_NETWORK_DUE_TO_ALTERED_NOTCH3_IN_OVARIAN_CANCER	36	0.67113185	1.936347444	0.000337072	0.004881423
REACTOME_RIP_MEDIATED_NFKB_ACTIVATION_VIA_ZBP1	15	0.799976101	1.920051598	0.000470588	0.006351746
PID_NFKAPPAB_CANONICAL_PATHWAY	17	0.77116672	1.903144816	0.000633518	0.007874881
KEGG_MAPK_SIGNALING_PATHWAY	158	0.456877044	1.64254647	0.000793813	0.0094137
WP_REGULATORY_CIRCUITS_OF_THE_STAT3_SIGNALING_PATHWAY	50	0.594426663	1.822144995	0.001120619	0.012427239
REACTOME_NEGATIVE_REGULATION_OF_NOTCH4_SIGNALING	44	0.6032296	1.80760091	0.001378064	0.014351301
REACTOME_TAK1_DEPENDENT_IKK_AND_NF_KAPPA_B_ACTIVATION	22	0.708296801	1.850353742	0.001582513	0.015720575
WP_MAPK_SIGNALING_PATHWAY	147	0.450658351	1.606656703	0.001655468	0.016160239

REACTOME_HEDGEHOG_LIGAND_BIOGENESIS	46	0.589169246	1.78040187	0.001854659	0.017697583
KEGG_HEDGEHOG_SIGNALING_PATHWAY	25	-0.598621392	-1.829274691	0.002093748	0.019091059
BIOCARTA_EPONFKB_PATHWAY	7	0.877050107	1.758660587	0.002243063	0.020095287
REACTOME_P75NTR_SIGNALS_VIA_NF_KB	10	0.816454372	1.783335242	0.003043045	0.02497219
WP_CANONICAL_AND_NONCANONICAL_NOTCH_SIGNALING	17	-0.637184701	-1.757749292	0.005481033	0.038509491
REACTOME_MAPK6_MAPK4_SIGNALING	60	0.521714253	1.648649589	0.006429914	0.042829468
REACTOME_RAF_INDEPENDENT_MAPK1_3_ACTIVATION	18	0.698068561	1.744099622	0.00654606	0.043321806
REACTOME_TRAF6_MEDIATED_NF_KB_ACTIVATION	17	0.703336183	1.735747376	0.00720841	0.046505104
BIOCARTA_MAPK_PATHWAY	66	0.50237087	1.612239053	0.008324285	0.05097889
PID_WNT_CANONICAL_PATHWAY	12	-0.681626079	-1.702860485	0.008817112	0.052891819
REACTOME_FCERI_MEDIATED_MAPK_ACTIVATION	22	0.643381962	1.680770293	0.011671035	0.063542078
PID_WNT_SIGNALING_PATHWAY	18	-0.598664102	-1.677388174	0.011896669	0.06422883
WP_WNT_SIGNALING_IN_KIDNEY_DISEASE	20	-0.570236967	-1.645094706	0.015315494	0.076505212
WP_CANONICAL_NFKB_PATHWAY	7	0.817688756	1.639629224	0.015198685	0.076505212
REACTOME_REGULATION_OF_NF_KAPPA_B_SIGNALING	10	0.755895302	1.651059481	0.015879163	0.077936262
PID_NFKAPPAB_ATYPICAL_PATHWAY	11	0.740552883	1.652759027	0.016226367	0.079261126
REACTOME_TNFR1_INDUCED_NFKAPPAB_SIGNALING_PATHWAY	15	0.691439492	1.659548953	0.016366013	0.079724042

REACTOME_NF_KB_IS_ACTIVATED_AND_SIGNALS_SURVIVAL	8	0.788456338	1.630584928	0.017975258	0.085747787
REACTOME_NOTCH4_INTRACELLULAR_DOMAIN_REGULATES_TRANSCRIPTION	10	-0.682721071	-1.613506816	0.018741809	0.087546393
REACTOME_TNF_RECEPTOR_SUPERFAMILY_TNFSF_MEMBERS_MEDIATING_NON_CANONICAL_NF_KB_PATHWAY	12	0.721342442	1.642679408	0.019048305	0.088414256
REACTOME_NF_KB_ACTIVATION_THROUGH_FADD_RIP_1_PATHWAY_MEDIATED_BY_CASPASE_8_AND_10	8	0.764760041	1.581579266	0.030727588	0.123607986
REACTOME_GENE_AND_PROTEIN_EXPRESSION_BY_JAK_STAT_SIGNALING_AFTER_INTERLEUKIN_12_STIMULATION	23	0.588187541	1.550411163	0.03443752	0.13483071
REACTOME_MAPK_FAMILY_SIGNALING_CASCADES	175	0.373865753	1.35824421	0.034387408	0.13483071
WP_WNT_SIGNALING	64	-0.369327458	-1.401207681	0.034759076	0.135030653
REACTOME_MAPK1_ERK2_ACTIVATION	9	0.737510696	1.570165725	0.035190451	0.1354109
WP_NCRNAS_INVOLVED_IN_STAT3_SIGNALING_IN_HEPATOCELLULAR_CARCINOMA	11	0.701751635	1.566162764	0.036427282	0.137377657
WP_4249_HEDGEHOG_SIGNALING_PATHWAY	20	-0.530333287	-1.529975315	0.036811796	0.13831924
WP_HOSTPATHOGEN_INTERACTION_OF_HUMAN_CORONAVIRUSES_MAPK_SIGNALING	29	0.543008299	1.50217932	0.04399981	0.156717161
PID_IL2_STAT5_PATHWAY	20	0.596294386	1.52547066	0.044242749	0.157037184
