

Bioinformatics Approach to Identify the Influences of COVID-19 on Ischemic Stroke

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7 **Supplementary Information (SI)**

ON TO LO GY	ID	Description	pvalue	geneID
BP	GO:0002377	immunoglobulin production	8.56E-13	IGKV2-29/IGKV2D-30/IGKV3D-11/IGKV1D-8/MZB1/IGLV4-69/IGLV9-49/IGLV1-47/IGLV7-46/IGLV7-43/IGLV1-36/IGLV3-27/IGLV3-25
	GO:0002440	production of molecular mediator of immune response	7.81E-11	IGKV2-29/IGKV2D-30/IGKV3D-11/IGKV1D-8/MZB1/IGLV4-69/IGLV9-49/IGLV1-47/IGLV7-46/IGLV7-43/IGLV1-36/IGLV3-27/IGLV3-25
	GO:0006958	complement activation, classical pathway	1.23E-07	C1QC/IGHA2/IGHG4/IGHV3-20/IGLC2/IGLC3/IGLC7
	GO:0006959	humoral immune response	1.97E-07	C1QC/PF4V1/PF4/PPBP/IGHA2/IGHG4/IGHV3-20/IGLC2/IGLC3/IGLC7
	GO:0002455	humoral immune response mediated by circulating immunoglobulin	2.69E-07	C1QC/IGHA2/IGHG4/IGHV3-20/IGLC2/IGLC3/IGLC7
	GO:0006956	complement activation	4.62E-07	C1QC/IGHA2/IGHG4/IGHV3-20/IGLC2/IGLC3/IGLC7
	GO:0007596	blood coagulation	1.30E-06	PROS1/PF4V1/PF4/MMRN1/TREML1/HBB/ITGB3/CYP4F2
	GO:0050817	coagulation	1.53E-06	PROS1/PF4V1/PF4/MMRN1/TREML1/HBB/ITGB3/CYP4F2
	GO:0007599	hemostasis	1.58E-06	PROS1/PF4V1/PF4/MMRN1/TREML1/HBB/ITGB3/CYP4F2
	GO:0008037	cell recognition	1.64E-06	ADAM32/CNTNAP3/IGHA2/IGHG4/IGHV3-20/IGLC2/IGLC3/IGLC7
CC	GO:0019814	immunoglobulin complex	3.49E-22	IGKV2-29/IGKV2D-30/IGKV3D-11/IGKV1D-8/IGHA2/IGHG4/IGHV3-20/IGLV4-69/IGLV9-49/IGLV1-47/IGLV7-46/IGLV7-43/IGLV1-36/IGLV3-27/IGLV3-25/IGLC2/IGLC3/IGLC7
	GO:0072562	blood microparticle	1.48E-13	C1QC/IGKV3D-11/PROS1/HBB/HBD/IGHA2/IGHG4/ITGA2B/IGLV1-47/IGLV3-25/IGLC2/IGLC3
	GO:0031091	platelet alpha granule	3.46E-11	PROS1/PF4/PPBP/MMRN1/VEGFC/TREML1/IGF1/ITGA2B/ITGB3
	GO:0031093	platelet alpha granule lumen	1.40E-07	PROS1/PF4/PPBP/MMRN1/VEGFC/IGF1
	GO:0042571	immunoglobulin complex, circulating	3.24E-07	IGHA2/IGHG4/IGHV3-20/IGLC2/IGLC3/IGLC7

	GO:0031838	haptoglobin-hemoglobin complex	7.06E-06	HBB/HBD/HBQ1
	GO:0005833	hemoglobin complex	9.39E-06	HBB/HBD/HBQ1
	GO:0009897	external side of plasma membrane	0.000213	SDC1/IGHA2/IGHG4/IGHV3-20/ITGA2B/IGLC2/IGLC3/IGLC7
	GO:0098636	protein complex involved in cell adhesion	0.000486	MMRN1/ITGA2B/ITGB3
	GO:0034774	secretory granule lumen	0.001019	PROS1/PF4/PPBP/MMRN1/VEGFC/IGF1
MF	GO:0003823	antigen binding	7.39E-12	IGKV3D-11/IGHA2/IGHG4/IGHV3-20/IGLV1-47/IGLV7-43/IGLV3-27/IGLV3-25/IGLC2/IGLC3/IGLC7
	GO:0034987	immunoglobulin receptor binding	2.09E-07	IGHA2/IGHG4/IGHV3-20/IGLC2/IGLC3/IGLC7
	GO:0031720	haptoglobin binding	3.69E-06	HBB/HBD/HBQ1
	GO:0005344	oxygen carrier activity	1.11E-05	HBB/HBD/HBQ1
	GO:0045236	CXCR chemokine receptor binding	2.47E-05	PF4V1/PF4/PPBP
	GO:0019825	oxygen binding	0.000263	HBB/HBD/HBQ1
	GO:0008009	chemokine activity	0.000519	PF4V1/PF4/PPBP
	GO:0004601	peroxidase activity	0.000618	HBB/HBD/HBQ1
	GO:0016684	oxidoreductase activity, acting on peroxide as acceptor	0.000768	HBB/HBD/HBQ1
	GO:0005172	vascular endothelial growth factor receptor binding	0.000896	VEGFC/ITGB3

8 **Table S1** Ontological analysis of common DEGs among SARS-CoV-2 and IS
9 Note: Top 10 terms of each category are listed

10 **Table S2** Pathway enrichment analysis of common DEGs among SARS-CoV-2 and IS

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ID	Description	p-value	geneID
hsa04512	ECM-receptor interaction	0.000321	SDC1/HMMR/ITGA2B/ITGB3
hsa05410	Hypertrophic cardiomyopathy	0.000349	TNNT2/IGF1/ITGA2B/ITGB3
hsa05414	Dilated cardiomyopathy	0.000447	TNNT2/IGF1/ITGA2B/ITGB3
hsa04015	Rap1 signaling pathway	0.001069	VEGFC/LPAR4/IGF1/ITGA2B/ITGB3
hsa04115	p53 signaling pathway	0.002594	CCNB1/CDK1/IGF1
hsa04061	Viral protein interaction with cytokine and cytokine receptor	0.006293	PF4V1/PF4/PPBP
hsa04914	Progesterone-mediated oocyte maturation	0.006648	CCNB1/CDK1/IGF1
hsa04510	Focal adhesion	0.006723	VEGFC/IGF1/ITGA2B/ITGB3
hsa04151	PI3K-Akt signaling pathway	0.010086	VEGFC/LPAR4/IGF1/ITGA2B/ITGB3
hsa04110	Cell cycle	0.011852	CCNB1/TTK/CDK1

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13 **Table S3** the fold change of common DEGs in COVID-19 and IS, respectively

Gene symbol	COVID-19	IS
ADAM32	2.25519	2.644808
ADORA1	-2.48698	2.981777
ALAS2	6.285087	2.198292
ASPM	2.89359	2.478286

BHLHA15	3.508463	3.059393
C1QC	3.480919	2.411934
CCDC3	2.003099	3.915235
CCNB1	2.212427	2.06743
CDK1	2.652926	2.470697
CMTM5	2.751215	2.797343
CNN1	2.833126	2.719503
CNTNAP3	2.163199	-3.35391
CNTNAP3B	2.732845	-3.06962
CYP4F2	3.042319	-4.27293
DAAM2	2.498734	-4.98126
EGFL7	2.413626	2.408942
FLG-AS1	2.068455	3.549604
GLIS1	2.16379	-2.37103
GRB14	2.774111	2.121552
HBB	4.838255	2.022102
HBD	6.3858	3.125742
HBQ1	2.811	2.352905
HMMR	2.853816	2.557774
IFI27	8.638309	3.227019
IGF1	4.068936	2.293879

IGHA2	3.335309	2.18739
IGHG4	2.570169	2.978381
IGHV3-20	4.761924	2.39249
IGHV3-52	3.659518	2.784599
IGKV1D-8	2.356377	2.83024
IGKV2-29	2.833118	2.196068
IGKV2D-30	3.823649	3.226753
IGKV2D-40	3.189176	3.264525
IGKV3D-11	3.003446	3.356605
IGLC2	3.500068	2.197444
IGLC3	3.552097	2.145453
IGLC7	2.06125	2.989453
IGLV1-36	2.914544	2.496547
IGLV1-47	3.554114	2.053655
IGLV2-28	2.231324	3.883846
IGLV3-25	4.40631	2.714419
IGLV3-27	4.625536	2.713079
IGLV4-69	3.584065	2.636072
IGLV7-43	2.275896	2.483539
IGLV7-46	3.745818	2.71555
IGLV9-49	4.235036	3.622747

ITGA2B	3.041642	2.261747
ITGB3	2.47009	2.555719
KCNT2	2.911728	4.869364
LINC00958	2.17638	-4.88715
LINC01565	2.619874	-2.6372
LOC101928932	4.065671	2.805649
LOC105370027	2.035779	3.509397
LPAR4	2.474683	2.008761
MAGI2-AS3	2.468627	2.392191
MMP1	2.934984	2.353589
MMRN1	2.196398	2.154733
MYBL2	-3.35656	-2.07901
MYL4	3.101892	2.502675
MZB1	3.581419	2.183014
PBK	-3.99206	-2.31159
PF4	2.02631	2.240103
PF4V1	2.893831	3.648445
PPBP	2.221363	3.340847
PROS1	2.179366	2.09888
PTPRN	2.040823	3.150159
PYCR1	3.102169	2.508068

RNU4-38P	2.753866	-2.48801
SDC1	5.054987	3.499158
SMIM5	2.164395	2.398299
TEX15	3.180105	4.852666
TK1	3.130801	2.184802
TNFRSF17	3.310378	2.175281
TNNT1	2.989855	2.708745
TNNT2	2.05359	-4.6063
TREML1	2.884952	2.318918
TRPM6	2.529528	-2.40477
TTK	2.439725	2.944328
VEGFC	2.019395	2.274076
ZFPM2	2.219203	3.246874