

Table S1 The significant differential expression genes

Gene	logFC	AveExpr	t	P.Value	adj.P.Val	B
HPGDS	2.677748	4.790856	5.625018	0.000035	0.004643	2.490636
MFAP5	2.381196	5.924773	5.369976	0.000059	0.005897	2.007313
LYRM5	2.032682	7.376966	6.204112	0.000012	0.002505	3.553675
COX20	2.008416	7.668762	4.340517	0.000486	0.018609	-0.021266
HLA-DRA	1.928792	5.836570	4.198595	0.000655	0.022184	-0.308097
ATP5E	1.884188	5.551442	5.106076	0.000100	0.007774	1.498242
PARP2	1.857827	6.365432	4.582424	0.000293	0.014042	0.464633
GOT2	1.843811	9.245905	5.788030	0.000026	0.003786	2.794823
MYL4	1.816222	8.501809	3.798694	0.001530	0.037480	-1.120119
COQ3	1.737727	5.149012	5.900341	0.000021	0.003413	3.002178
SGK1	1.714934	6.405154	4.403032	0.000426	0.017372	0.104703
C14orf142	1.707482	6.211874	6.058280	0.000015	0.002864	3.290637
MRPL46	1.680416	5.961148	8.650439	0.000000	0.000307	7.480638
MRPS28	1.668528	6.551246	5.632393	0.000035	0.004623	2.504478
RPL10	1.661995	7.597394	4.600818	0.000282	0.013740	0.501394
FLRT3	1.647101	4.294763	5.474873	0.000048	0.005373	2.207168
ATP5G1	1.644052	7.776777	5.974674	0.000018	0.003078	3.138400
SMC2	1.643545	6.399002	6.275809	0.000010	0.002361	3.681818
NDUFB9	1.631251	8.837357	5.522096	0.000043	0.005022	2.296657
LMOD3	1.622092	7.847239	4.688019	0.000235	0.012310	0.675264
C1QTNF9	1.612154	3.843738	6.004018	0.000017	0.002983	3.191950
HLA-DQA1	1.601884	4.176391	4.335769	0.000490	0.018754	-0.030844
QRSL1	1.581726	5.828834	3.670424	0.002011	0.044189	-1.380753
PSMD14	1.578550	8.011629	4.039756	0.000917	0.026845	-0.630195
UQCRB	1.569417	6.917859	5.564665	0.000040	0.004864	2.377065
RTN4IP1	1.549045	4.734914	7.573948	0.000001	0.000620	5.864782
SLC5A1	1.492188	6.217799	5.078849	0.000105	0.007986	1.445233
NIF3L1	1.460346	5.911282	5.122789	0.000096	0.007601	1.530737
PROM1	1.444982	4.255511	4.091811	0.000821	0.025308	-0.524538
MUT	1.436042	6.550659	5.443516	0.000051	0.005416	2.147578
ACADSB	1.409625	5.273498	4.606795	0.000278	0.013723	0.513332
MAD2L1	1.408358	4.024802	3.682564	0.001960	0.043498	-1.356101
PTGDS	1.399239	5.742146	5.132445	0.000095	0.007521	1.549496
ATP5H	1.381133	5.268352	6.616070	0.000005	0.001814	4.279219
HLTF	1.371173	5.490217	4.075996	0.000849	0.025720	-0.556629
ARPC1A	1.370311	7.100535	3.867968	0.001320	0.034217	-0.979284
ATP5F1	1.363373	5.758161	4.287974	0.000542	0.020022	-0.127330
OMD	1.360539	4.375347	3.818890	0.001466	0.036456	-1.079061
TYRP1	1.358361	3.952591	4.774826	0.000196	0.011082	0.847652
RFC3	1.357257	4.905158	4.854078	0.000167	0.010321	1.004384
CUEDC2	1.355341	5.854903	4.074809	0.000851	0.025740	-0.559038
FASTKD5	1.346145	5.876644	6.585279	0.000006	0.001878	4.225894
CD74	1.342100	5.455293	3.591714	0.002378	0.047930	-1.540476
IFI44	1.328048	4.520152	9.900808	0.000000	0.000116	9.152546

FAM192A	1.318999	5.693580	7.114072	0.000002	0.001014	5.121274
BEX1	1.318991	7.000179	4.759394	0.000203	0.011232	0.817059
FAM180A	1.311112	3.606755	4.102351	0.000803	0.024971	-0.503154
COPS4	1.308775	6.373837	4.094837	0.000816	0.025226	-0.518398
MTHFS	1.306153	5.384898	3.988986	0.001021	0.028885	-0.733314
NDUFAF1	1.305672	6.500856	7.246738	0.000002	0.000872	5.339107
CHCHD6	1.304917	4.761364	5.018779	0.000119	0.008406	1.327972
FH	1.298388	7.289064	5.290869	0.000069	0.006464	1.855637
MRPL1	1.297937	7.008995	4.061362	0.000876	0.026258	-0.586331
CENPJ	1.297818	4.481759	4.039776	0.000917	0.026845	-0.630155
NTN4	1.297215	7.396090	4.983293	0.000128	0.008813	1.258507
FARS2	1.295123	4.116582	5.353868	0.000061	0.005994	1.976495
SDHD	1.288941	6.354213	6.033886	0.000016	0.002920	3.246327
NDUFB6	1.287864	8.222016	5.801221	0.000025	0.003786	2.819272
BVES	1.280762	10.496081	5.027764	0.000117	0.008328	1.345538
TAS2R13	1.276624	4.799077	3.847460	0.001379	0.035232	-1.020978
NNT	1.274922	6.862033	4.499545	0.000348	0.015698	0.298651
LACTB2	1.259370	5.851759	6.346356	0.000009	0.002311	3.807140
UNC119B	1.256489	5.307499	3.712692	0.001838	0.042183	-1.294904
LLPH	1.234317	5.456785	3.829323	0.001434	0.036021	-1.057852
AIMP2	1.233825	7.828371	4.368132	0.000458	0.018033	0.034409
SPHAR	1.231217	4.411457	4.033028	0.000930	0.027095	-0.643856
UQCR10	1.229302	7.121525	6.018955	0.000017	0.002974	3.219161
MAOB	1.215981	5.622331	4.475775	0.000366	0.015969	0.250947
DNAJC19	1.210162	8.044666	5.178453	0.000086	0.007145	1.638724
LYVE1	1.204873	4.951860	4.322293	0.000505	0.019252	-0.058036
P2RY14	1.195675	4.311251	6.309477	0.000010	0.002311	3.741722
TMEM186	1.195656	6.612269	8.620675	0.000000	0.000307	7.438234
PMPCB	1.189303	8.430798	4.889259	0.000155	0.009916	1.073753
LRRC39	1.188873	8.707418	3.909062	0.001210	0.032026	-0.895742
SMIM7	1.188710	6.422835	3.946347	0.001118	0.030665	-0.819957
NDUFA9	1.186410	8.689365	7.217690	0.000002	0.000892	5.291644
ZFP3	1.185603	5.361865	8.335814	0.000000	0.000329	7.025984
MYL9	1.184998	9.115691	4.748799	0.000207	0.011283	0.796042
ATP5L	1.175904	10.634881	12.583832	0.000000	0.000014	12.106851
DBT	1.174618	5.806823	3.835779	0.001414	0.035666	-1.044727
NIPSNAP3A	1.169286	6.138197	3.659285	0.002059	0.044760	-1.403370
ATP1A3	1.168058	5.346147	3.706723	0.001861	0.042348	-1.307030
CAT	1.164290	8.224103	3.650965	0.002096	0.044898	-1.420260
MPC1	1.160930	8.245135	6.711351	0.000005	0.001585	4.443305
ARHGEF6	1.158282	5.931511	4.155470	0.000717	0.023224	-0.395452
RRP15	1.147646	7.210649	4.284572	0.000546	0.020068	-0.134203
TMEM126A	1.144666	7.034920	4.094322	0.000817	0.025226	-0.519442
RGS2	1.142820	5.516135	4.588613	0.000289	0.013900	0.477004
FAM129A	1.125040	7.718750	6.346401	0.000009	0.002311	3.807218
CASP5	1.120229	4.108845	3.837359	0.001409	0.035614	-1.041515

ASB14	1.117238	6.099152	3.650360	0.002099	0.044898	-1.421489
LSM5	1.115078	4.674041	5.103493	0.000100	0.007774	1.493218
GTF2B	1.108377	7.511791	5.052095	0.000111	0.008167	1.393059
CPEB4	1.106012	6.530838	5.049224	0.000112	0.008167	1.387456
COQ7	1.096378	4.668385	9.151877	0.000000	0.000231	8.176392
CFAP20	1.093035	5.565304	4.142951	0.000737	0.023575	-0.420826
NUBP1	1.090778	6.608977	5.323816	0.000064	0.006218	1.918907
LANCL2	1.090640	4.307002	10.052309	0.000000	0.000116	9.341245
PFDN4	1.087275	6.105001	5.297536	0.000068	0.006412	1.868450
PCCB	1.083386	5.518053	5.156636	0.000090	0.007341	1.596445
IFT27	1.081913	5.181431	6.426610	0.000008	0.002157	3.948777
TIMMDC1	1.079452	6.827907	6.576555	0.000006	0.001878	4.210758
C17orf75	1.077686	6.117862	6.139728	0.000013	0.002646	3.437941
MFS1	1.076358	6.385398	5.384242	0.000057	0.005833	2.034578
PIGU	1.074895	4.969703	6.716024	0.000004	0.001585	4.451316
TIMM23	1.063063	9.232238	5.811074	0.000025	0.003786	2.837518
PFDN1	1.062750	5.678623	4.783352	0.000193	0.011006	0.864543
SRSF3	1.061241	9.169040	3.599723	0.002338	0.047446	-1.524234
ACADM	1.058305	9.138126	4.219671	0.000626	0.021527	-0.265434
EDNRA	1.056848	7.262013	4.468592	0.000371	0.016130	0.236523
PSMB6	1.052868	5.442067	3.722710	0.001799	0.041510	-1.274549
NES	1.051917	5.236303	5.003393	0.000123	0.008568	1.297871
ZHX3	1.050184	4.206847	4.459059	0.000379	0.016304	0.217374
TMEM19	1.049890	4.775593	6.801485	0.000004	0.001565	4.597229
SGO1	1.047756	4.693202	3.585097	0.002412	0.048387	-1.553892
POLR2G	1.046961	7.705439	4.238403	0.000602	0.021099	-0.227535
IFI44L	1.038791	4.006170	5.791099	0.000026	0.003786	2.800513
COQ2	1.037328	5.322312	4.524791	0.000330	0.015210	0.349269
MRPS10	1.036631	7.553938	8.001568	0.000000	0.000469	6.527200
GYG1	1.036417	6.333750	3.655423	0.002076	0.044837	-1.411211
FOPNL	1.034908	6.842132	4.478105	0.000364	0.015931	0.255625
MEGF8	1.031130	5.213975	6.484062	0.000007	0.002038	4.049567
EMG1	1.026890	6.642860	4.479393	0.000363	0.015928	0.258210
ARL2BP	1.024403	6.970180	6.410633	0.000008	0.002187	3.920659
PDHB	1.023892	8.935983	4.990941	0.000126	0.008721	1.273491
DARS2	1.019921	5.109127	8.433600	0.000000	0.000324	7.168817
TRMT61B	1.014585	4.866729	4.871323	0.000161	0.010177	1.038403
SAMM50	1.012643	7.210393	4.753174	0.000205	0.011238	0.804722
SLC46A3	1.010986	4.558174	6.968905	0.000003	0.001246	4.879792
RBX1	1.009276	7.595503	4.417500	0.000413	0.017006	0.133819
EMC4	1.008972	7.783375	4.492826	0.000353	0.015763	0.285172
UQCRQ	1.008747	11.591109	4.406417	0.000423	0.017301	0.111516
NSDHL	1.006678	6.296395	4.235350	0.000606	0.021099	-0.233712
NDUFA8	1.002359	9.848424	8.238617	0.000000	0.000360	6.882633
PRH2	1.001248	3.345871	5.968920	0.000018	0.003082	3.127885
KAT6A	-1.002650	6.848948	-4.351532	0.000474	0.018421	0.000946

AHNAK2	-1.009540	3.816516	-3.633960	0.002174	0.045478	-1.454776
PPME1	-1.011376	6.520190	-6.278926	0.000010	0.002361	3.687370
SPTA1	-1.013347	3.753013	-5.270091	0.000072	0.006587	1.815664
NUMA1	-1.019859	4.615112	-4.280307	0.000551	0.020164	-0.142820
DIAPH1	-1.032252	5.564931	-4.122883	0.000769	0.024297	-0.461512
ENO1	-1.034426	8.847521	-5.046255	0.000113	0.008167	1.381659
IL1R1	-1.036762	6.045140	-3.705819	0.001865	0.042348	-1.308865
SLC2A1	-1.040442	5.487909	-4.057613	0.000883	0.026287	-0.593941
NT5C3A	-1.045280	4.860184	-4.913587	0.000148	0.009609	1.121644
AKAP12	-1.059526	5.620019	-4.748238	0.000207	0.011283	0.794928
STBD1	-1.066850	7.268392	-4.901799	0.000151	0.009700	1.098446
HIST1H2BD	-1.075932	5.959913	-4.022117	0.000952	0.027546	-0.666014
PLIN2	-1.077456	6.812955	-4.116174	0.000780	0.024433	-0.475117
HMBOX1	-1.080320	6.963896	-5.891611	0.000021	0.003413	2.986127
BTG1	-1.082195	7.643113	-5.578947	0.000039	0.004864	2.403987
TYW1B	-1.097239	3.895973	-4.735022	0.000213	0.011418	0.768697
WBP2	-1.103188	6.751452	-4.659528	0.000249	0.012766	0.618532
UGCG	-1.113906	5.077239	-4.515213	0.000337	0.015333	0.330071
DDX23	-1.121272	5.967838	-5.392283	0.000056	0.005833	2.049935
PPP1R3C	-1.123835	9.828219	-3.668501	0.002019	0.044205	-1.384658
EPB41L4A-AS1	-1.132376	5.712858	-5.375597	0.000058	0.005897	2.018059
SAT1	-1.147531	9.058448	-5.144621	0.000092	0.007397	1.573137
CLCNKB	-1.149298	4.880053	-4.671674	0.000243	0.012559	0.642725
BACE2	-1.176687	6.791200	-4.743611	0.000209	0.011286	0.785747
ABCA1	-1.189308	5.038776	-3.845100	0.001386	0.035287	-1.025776
GPR137B	-1.200804	5.540862	-6.387108	0.000008	0.002249	3.879184
CCNL1	-1.220895	7.625062	-4.792340	0.000189	0.010943	0.882343
TAGLN2	-1.228433	9.052772	-6.326164	0.000009	0.002311	3.771347
PAXBP1	-1.268549	7.092126	-4.380014	0.000447	0.017869	0.058350
VCAN	-1.269555	7.525454	-3.747032	0.001708	0.039968	-1.225127
CGNL1	-1.273384	7.954047	-3.581480	0.002431	0.048484	-1.561226
GPATCH11	-1.274960	9.554469	-7.660088	0.000001	0.000613	6.000443
RPGR	-1.293404	6.367467	-4.012378	0.000971	0.027983	-0.685795
NPPB	-1.298719	11.256204	-3.698891	0.001893	0.042482	-1.322940
VSTM1	-1.299946	5.816953	-7.473880	0.000001	0.000665	5.705763
COL6A3	-1.328048	6.037887	-5.445584	0.000050	0.005416	2.151513
CLEC2B	-1.332576	5.025030	-4.164383	0.000704	0.022960	-0.377390
BNIP3L	-1.346933	8.492434	-8.693490	0.000000	0.000307	7.541749
IFITM2	-1.365325	5.464238	-4.941223	0.000139	0.009252	1.175970
LNX2	-1.370027	6.898098	-7.375426	0.000001	0.000736	5.547812
PRELID2	-1.384414	4.894400	-5.811176	0.000025	0.003786	2.837707
IFRD1	-1.398911	6.545795	-5.622524	0.000036	0.004643	2.485953
HIST1H2BF	-1.405254	9.217689	-7.645900	0.000001	0.000613	5.978175
PLOD2	-1.407978	7.712116	-8.956030	0.000000	0.000266	7.908796
P4HA1	-1.412545	6.799461	-5.433920	0.000052	0.005475	2.129317
IGF2BP2	-1.420079	7.051902	-7.153070	0.000002	0.000972	5.185590

C1R	-1.432827	5.689642	-4.930634	0.000143	0.009384	1.155164
PYGL	-1.449884	6.023807	-4.130489	0.000756	0.024040	-0.446089
RRAD	-1.452749	4.987175	-4.442436	0.000392	0.016701	0.183969
HIST1H1E	-1.456627	5.810317	-3.653644	0.002084	0.044837	-1.414823
TFPI	-1.535236	6.760053	-5.551710	0.000041	0.004864	2.352621
YBX3	-1.537650	10.752721	-6.434799	0.000008	0.002157	3.963174
AHSP	-1.565406	3.954086	-3.771062	0.001623	0.038794	-1.176288
SLC5A3	-1.576468	6.754824	-4.233214	0.000609	0.021153	-0.238032
GYPA	-1.643763	4.062691	-4.980822	0.000129	0.008813	1.253664
OSMR	-1.649112	6.861196	-4.053805	0.000890	0.026455	-0.601671
ERO1A	-1.688878	7.269990	-4.653925	0.000252	0.012840	0.607366
SCD	-1.696483	6.200301	-3.773143	0.001616	0.038794	-1.172058
VEGFA	-1.715984	7.794676	-5.187226	0.000085	0.007087	1.655708
EFEMP1	-1.732916	5.390458	-5.155804	0.000090	0.007341	1.594831
CLIC1	-1.766934	7.893369	-6.314478	0.000009	0.002311	3.750605
ARRDC3	-1.842902	7.749936	-5.192140	0.000084	0.007051	1.665217
TMEM2	-1.846420	7.014950	-6.766475	0.000004	0.001585	4.537592
BHLHE40	-2.019127	7.004505	-6.437435	0.000007	0.002157	3.967806
COL11A1	-2.127842	5.300933	-3.828137	0.001437	0.036060	-1.060262
HSD17B7P2	-2.202311	4.603942	-3.967655	0.001068	0.029790	-0.776656
PII5	-2.202862	4.610903	-5.089283	0.000103	0.007887	1.465559
SLC2A3	-2.220953	8.186182	-5.217994	0.000080	0.006857	1.715201
ADAMTS9	-2.243452	6.545846	-3.629854	0.002193	0.045659	-1.463108
HBB	-2.277376	9.869763	-5.751512	0.000028	0.004008	2.727009
NAMPT	-2.352978	10.026246	-5.907698	0.000020	0.003401	3.015697
GYPB	-2.454293	4.283995	-4.963494	0.000133	0.009011	1.219688
IL1RL1	-2.487512	5.586999	-4.179642	0.000682	0.022628	-0.346478
PLA2G2A	-3.915489	7.761885	-5.071264	0.000107	0.008040	1.430449