

**Table S2** Details of 368 DEGs

No.	Name	P value	adjP value	logFC
1	DLX1	6.90E-15	2.37E-10	3.437009
2	HOXC6	4.21E-14	7.22E-10	2.842739
3	HPN	2.33E-12	2.28E-08	2.406573
4	OR51E2	2.65E-12	2.28E-08	2.625014
5	AMACR	3.41E-12	2.34E-08	2.873593
6	THBS4	8.94E-12	5.12E-08	2.082085
7	GCNT1	2.27E-11	1.11E-07	1.914317
8	ZIC2	1.57E-10	5.63E-07	1.841547
9	TRPM4	1.65E-10	5.63E-07	1.971991
10	COL2A1	1.80E-10	5.63E-07	1.753409
11	HIST3H2A	3.36E-10	9.58E-07	1.823013
12	MYO6	3.63E-10	9.58E-07	1.516276
13	SIM2	3.91E-10	9.59E-07	1.957962
14	LOC145837	5.57E-10	1.28E-06	2.025608
15	STX19	8.46E-10	1.82E-06	1.643999
16	ALDH3B2	1.53E-09	3.10E-06	1.6945
17	PPM1E	4.78E-09	8.68E-06	1.249583
18	GDF15	4.80E-09	8.68E-06	1.979391
19	CTHRC1	5.69E-09	9.78E-06	1.229521
20	INSM1	7.23E-09	1.15E-05	1.470637
21	GPR160	7.36E-09	1.15E-05	1.316816
22	F5	8.66E-09	1.29E-05	1.964166
23	RAB17	1.03E-08	1.48E-05	1.554856
24	GOLM1	1.29E-08	1.78E-05	1.500443
25	APOF	1.44E-08	1.90E-05	1.361387
26	TMEM45B	1.67E-08	2.12E-05	1.880124
27	TMTC4	1.74E-08	2.12E-05	1.318096
28	COL9A2	1.79E-08	2.12E-05	1.588447
29	CLDN8	2.18E-08	2.49E-05	1.460409
30	MYRIP	2.55E-08	2.83E-05	1.401131
31	GLYATL1	2.79E-08	3.00E-05	1.828796
32	GJB1	2.90E-08	3.02E-05	1.460915
33	SLC27A2	3.05E-08	3.07E-05	1.147382
34	TFF3	3.13E-08	3.07E-05	1.125942
35	TRIM36	3.66E-08	3.49E-05	1.301607
36	HOXC4	4.09E-08	3.80E-05	1.786922
37	EFCAB4A	4.82E-08	4.36E-05	1.214692
38	RAP1GAP	5.80E-08	5.11E-05	1.304857
39	FBP1	7.21E-08	6.04E-05	1.282919
40	MARCKSL1	7.58E-08	6.20E-05	1.280753

41	MMP26	1.02E-07	8.14E-05	1.540632
42	RGS17	1.07E-07	8.33E-05	1.234994
43	FABP5	1.23E-07	9.40E-05	1.160717
44	NEK5	1.35E-07	0.000101	1.616526
45	ENTPD5	1.56E-07	0.000114	1.250312
46	ICA1	1.87E-07	0.000134	1.129941
47	TLCD1	1.94E-07	0.000136	1.067143
48	CRISP3	2.17E-07	0.000146	2.033806
49	FOXD1	2.28E-07	0.000148	1.388128
50	B3GAT1	2.37E-07	0.00015	1.662979
51	ELL3	2.42E-07	0.00015	1.28884
52	STEAP4	2.44E-07	0.00015	1.058638
53	LUZP2	2.97E-07	0.000178	1.951178
54	TMC5	3.01E-07	0.000178	1.436149
55	ABCC4	3.07E-07	0.000179	1.375828
56	AGR2	3.25E-07	0.000183	1.492173
57	TDRD1	3.48E-07	0.000189	1.324401
58	VSTM2L	3.59E-07	0.00019	1.356933
59	TGM3	3.80E-07	0.000198	1.440593
60	PKIB	3.98E-07	0.000204	1.150837
61	PLA1A	4.38E-07	0.000217	1.284859
62	DLX2	4.43E-07	0.000217	1.876746
63	APOC1	4.55E-07	0.00022	1.41738
64	C9ORF152	4.61E-07	0.00022	1.108798
65	NETO2	5.53E-07	0.000257	1.239573
66	TRPM8	5.83E-07	0.000261	1.140471
67	PTP4A3	5.83E-07	0.000261	1.135035
68	SLC45A2	6.32E-07	0.000273	1.547865
69	TRIB3	6.36E-07	0.000273	1.133933
70	PPP1R14B	7.59E-07	0.000318	1.137487
71	DNAH5	7.87E-07	0.000326	1.483703
72	SLC7A11	8.06E-07	0.00033	1.30144
73	PLA2G7	8.52E-07	0.000338	1.29236
74	TSPAN1	8.52E-07	0.000338	1.215571
75	GMDS	9.94E-07	0.000388	1.165535
76	COMP	1.03E-06	0.000395	1.299146
77	HLA-DMB	1.16E-06	0.000437	1.000868
78	CLDN7	1.35E-06	0.0005	1.218368
79	PYCR1	1.41E-06	0.000509	1.224055
80	SFRP4	1.47E-06	0.000526	1.570301
81	SLC43A1	1.51E-06	0.000528	1.255327
82	C5ORF30	1.62E-06	0.000552	1.151601
83	CLDN3	1.70E-06	0.000568	1.353273

84	MB	1.72E-06	0.000569	1.110358
85	PRR16	1.91E-06	0.000619	1.005389
86	STIL	2.11E-06	0.00067	1.034969
87	SLC38A11	2.13E-06	0.000671	1.087028
88	PDLIM5	2.25E-06	0.000694	1.72916
89	AGR3	2.29E-06	0.000696	1.203082
90	ACSM1	2.31E-06	0.000696	1.796128
91	KLK12	2.49E-06	0.000731	1.401633
92	ATP8A2	3.29E-06	0.000862	1.307702
93	SPDEF	3.80E-06	0.000966	1.055843
94	REPS2	4.01E-06	0.000999	1.129937
95	TTL12	4.17E-06	0.001024	1.004688
96	BICD1	6.90E-06	0.001529	1.217624
97	RPL22L1	6.99E-06	0.001539	1.148017
98	CHDH	8.10E-06	0.00175	1.02579
99	SAMD5	8.52E-06	0.001788	1.04179
100	CXCL14	9.57E-06	0.001968	1.47533
101	AGMAT	9.68E-06	0.00198	1.007971
102	KCNH8	9.96E-06	0.001991	1.304509
103	ERG	1.05E-05	0.002051	1.502241
104	ZNF765	1.08E-05	0.002096	1.182044
105	TWIST1	1.11E-05	0.002123	1.195681
106	C15ORF48	1.16E-05	0.002171	1.380466
107	ZNF577	2.00E-05	0.00327	1.117725
108	SDK1	2.52E-05	0.003957	1.006739
109	BIRC5	3.11E-05	0.004548	1.043603
110	PPP1R9A	3.20E-05	0.0046	1.023227
111	FMO5	3.35E-05	0.004688	1.008134
112	NAALADL2	3.42E-05	0.004722	1.033309
113	FOLH1	4.06E-05	0.005317	1.065414
114	PTK6	5.42E-05	0.006566	1.038572
115	TOP2A	7.11E-05	0.008055	1.091803
116	RRM2	7.60E-05	0.008421	1.292348
117	GJB2	0.000151	0.013481	1.006852
118	CACNA1D	0.000172	0.014513	1.281125
119	WT1	0.000196	0.015892	1.025795
120	ASPN	0.000301	0.021742	1.246453
121	DPT	6.79E-10	8.29E-06	-1.99967
122	PENK	7.24E-10	8.29E-06	-2.16305
123	COL4A6	7.24E-10	8.29E-06	-2.0232
124	NELL2	4.07E-09	2.64E-05	-2.06095
125	KRT14	4.24E-09	2.64E-05	-1.80411
126	ANGPT1	4.88E-09	2.64E-05	-1.68961

127	SLC14A1	5.80E-09	2.64E-05	-2.60903
128	SCGB1A1	6.14E-09	2.64E-05	-1.9305
129	EFEMP1	1.05E-08	4.01E-05	-1.53302
130	CYP3A5	1.29E-08	4.44E-05	-2.40863
131	NEFH	1.55E-08	4.53E-05	-2.35908
132	SMOC1	1.67E-08	4.53E-05	-1.77013
133	FAM107A	1.72E-08	4.53E-05	-1.69787
134	PTGDS	2.90E-08	7.12E-05	-1.62834
135	SNAI2	3.17E-08	7.25E-05	-1.62788
136	CAV1	7.06E-08	0.000148	-1.48179
137	KIAA1210	7.69E-08	0.000148	-1.73102
138	RND3	8.94E-08	0.000148	-1.31786
139	AOX1	8.95E-08	0.000148	-1.82193
140	CFD	9.02E-08	0.000148	-1.85508
141	SRD5A2	9.37E-08	0.000148	-1.33103
142	CAV2	9.46E-08	0.000148	-1.45815
143	KRT5	1.29E-07	0.000191	-2.25485
144	LSAMP	1.33E-07	0.000191	-1.92002
145	GPM6B	1.56E-07	0.000215	-1.29967
146	HSPB6	1.75E-07	0.000232	-1.46748
147	CCND2	2.08E-07	0.000256	-1.28509
148	FRMD6	2.20E-07	0.00026	-1.32862
149	LEPREL1	2.42E-07	0.00027	-1.35043
150	SPON1	2.44E-07	0.00027	-1.55285
151	PTGS1	2.52E-07	0.00027	-2.09292
152	CRYAB	2.71E-07	0.000282	-1.58327
153	TGFB3	2.97E-07	0.0003	-1.46351
154	PGM5	3.23E-07	0.00031	-1.6023
155	SLC2A5	3.25E-07	0.00031	-2.01756
156	TMLHE	3.48E-07	0.000323	-1.37871
157	CXCL12	3.75E-07	0.000332	-1.2666
158	FXVD6	3.77E-07	0.000332	-1.46009
159	CCK	3.94E-07	0.000338	-1.54641
160	LPIN1	4.82E-07	0.000404	-1.12762
161	KRT15	5.08E-07	0.000407	-2.25739
162	MME	5.10E-07	0.000407	-1.89018
163	TCEAL2	5.22E-07	0.000408	-1.66457
164	TSPAN18	5.52E-07	0.000421	-1.27814
165	PPAP2B	5.93E-07	0.000443	-1.30801
166	DUOX1	6.80E-07	0.000497	-1.58512
167	COL13A1	7.30E-07	0.000513	-1.2242
168	KCNJ3	7.32E-07	0.000513	-2.02915
169	KCNJ8	7.68E-07	0.000518	-1.25888

170	GAS1	7.69E-07	0.000518	-1.37672
171	FEZ1	8.75E-07	0.000578	-1.18302
172	CLIC6	8.99E-07	0.000583	-1.21006
173	GPX3	9.26E-07	0.000589	-1.42827
174	EDNRB	1.06E-06	0.000647	-1.26532
175	NR4A3	1.07E-06	0.000647	-1.23692
176	SERPINF1	1.12E-06	0.000656	-1.17869
177	ANPEP	1.13E-06	0.000656	-1.37325
178	VCL	1.15E-06	0.000659	-1.45553
179	HOXD10	1.21E-06	0.000672	-1.65556
180	GSTM5	1.21E-06	0.000672	-1.22329
181	LARGE	1.27E-06	0.000679	-1.17692
182	ETV5	1.29E-06	0.000679	-1.45776
183	PAGE4	1.30E-06	0.000679	-1.3266
184	PRDM8	1.33E-06	0.000681	-1.62988
185	SCARA3	1.40E-06	0.000705	-1.05139
186	ID4	1.44E-06	0.000715	-1.56909
187	CD177	1.65E-06	0.000789	-1.94843
188	ENAH	1.65E-06	0.000789	-1.22917
189	FERMT2	1.89E-06	0.000891	-1.21095
190	KRT23	1.97E-06	0.000906	-1.97056
191	EDN3	2.00E-06	0.000906	-1.52283
192	PPARGC1A	2.14E-06	0.000944	-1.38271
193	BCL11A	2.33E-06	0.001013	-1.52932
194	PALLD	2.41E-06	0.001034	-1.37901
195	SERPINB5	2.57E-06	0.00109	-1.46977
196	MSRB3	2.84E-06	0.001179	-1.26683
197	GSTM3	2.85E-06	0.001179	-1.21292
198	SRPX	2.95E-06	0.00119	-1.20429
199	TSHZ3	2.99E-06	0.00119	-1.18728
200	FOXF1	3.01E-06	0.00119	-1.05844
201	TGFBR3	3.06E-06	0.001195	-1.17149
202	SDPR	3.27E-06	0.001248	-1.00564
203	PTGS2	3.38E-06	0.001278	-1.16326
204	ANXA2	3.59E-06	0.001339	-1.20241
205	SPRED1	3.84E-06	0.001417	-1.01888
206	ATP1A2	4.01E-06	0.001451	-1.24883
207	NPR2	4.13E-06	0.001478	-1.02832
208	SCD5	4.30E-06	0.001522	-1.01664
209	TRPC1	4.46E-06	0.001562	-1.19329
210	RGN	4.82E-06	0.001668	-1.07039
211	MEIS2	4.89E-06	0.001668	-1.32024
212	EFHD1	5.29E-06	0.001699	-1.34294

213	EFS	5.63E-06	0.001737	-1.41477
214	GCNT2	5.63E-06	0.001737	-1.34171
215	LRCH2	5.64E-06	0.001737	-1.06369
216	PPP1R3C	5.70E-06	0.001737	-1.18663
217	LDB3	5.76E-06	0.001737	-1.28794
218	MPZL2	5.77E-06	0.001737	-1.07461
219	ASPA	5.78E-06	0.001737	-1.7935
220	WFDC1	5.92E-06	0.001737	-1.21011
221	MAP1B	5.92E-06	0.001737	-1.26722
222	ANKRD35	6.45E-06	0.001861	-1.17376
223	CX3CL1	6.88E-06	0.001927	-1.03578
224	RBP1	6.90E-06	0.001927	-1.37488
225	LPAR1	6.97E-06	0.00193	-1.13857
226	CLIP4	7.03E-06	0.001933	-1.03338
227	PROM1	7.22E-06	0.001959	-1.46662
228	SLC18A2	7.34E-06	0.001959	-1.65195
229	NBL1	7.47E-06	0.001963	-1.21499
230	GBP1	7.52E-06	0.001963	-1.0082
231	GPR161	7.54E-06	0.001963	-1.11756
232	BEX1	7.66E-06	0.001979	-1.63624
233	SPOCK3	7.72E-06	0.00198	-1.4994
234	JAZF1	7.86E-06	0.001996	-1.11986
235	S100A6	7.98E-06	0.001996	-1.03013
236	GSTM1	8.08E-06	0.001996	-1.46369
237	ACOX2	8.59E-06	0.002098	-1.15024
238	C2ORF40	8.80E-06	0.002098	-1.41471
239	SLITRK6	8.80E-06	0.002098	-1.28394
240	SYNGR1	9.12E-06	0.002151	-1.12251
241	ROR2	9.15E-06	0.002151	-1.2716
242	PDGFC	9.21E-06	0.002151	-1.04136
243	FHL1	9.27E-06	0.002152	-1.09831
244	BST2	9.77E-06	0.002207	-1.19837
245	DKK3	9.94E-06	0.002207	-1.1888
246	INMT	1.01E-05	0.002207	-1.02448
247	GSTP1	1.01E-05	0.002207	-1.30079
248	FOXQ1	1.01E-05	0.002207	-1.35533
249	PDPN	1.11E-05	0.002359	-1.31746
250	ALOX15B	1.15E-05	0.002414	-1.15618
251	LGR6	1.17E-05	0.00246	-1.60381
252	GSTM4	1.26E-05	0.002614	-1.02425
253	GLDN	1.27E-05	0.002635	-1.10953
254	TRIM29	1.30E-05	0.002666	-1.66257
255	ACTC1	1.32E-05	0.002688	-1.25446

256	PTRF	1.32E-05	0.002688	-1.16854
257	CALD1	1.38E-05	0.002746	-1.13781
258	KCNAB1	1.42E-05	0.002778	-1.15785
259	RPRM	1.62E-05	0.003083	-1.01814
260	S100A4	1.68E-05	0.00316	-1.32554
261	PLCL1	1.68E-05	0.00316	-1.15437
262	GSTM2	1.75E-05	0.00323	-1.48371
263	TMEM100	1.76E-05	0.00323	-1.04276
264	TACC1	1.79E-05	0.003279	-1.01892
265	GJA1	1.84E-05	0.003327	-1.02888
266	RBMS1	1.84E-05	0.003327	-1.01309
267	MYL9	1.85E-05	0.003327	-1.16562
268	FHOD3	2.03E-05	0.003562	-1.09735
269	WIF1	2.08E-05	0.003627	-1.96924
270	ATP8B4	2.11E-05	0.003657	-1.15134
271	CALM1	2.22E-05	0.003791	-1.23237
272	PPP1R14A	2.27E-05	0.003853	-1.1516
273	FGFR2	2.32E-05	0.003871	-1.58866
274	HSD11B1	2.46E-05	0.004065	-1.02013
275	EPHB1	2.52E-05	0.004127	-1.21506
276	TMEM35	2.62E-05	0.004222	-1.19476
277	TMEM158	2.68E-05	0.004276	-1.15779
278	TIMP3	2.72E-05	0.004319	-1.05878
279	FLNC	2.98E-05	0.004624	-1.13916
280	DEFB1	3.04E-05	0.004689	-1.21241
281	NRK	3.09E-05	0.004716	-1.45428
282	SV2B	3.09E-05	0.004716	-1.50064
283	CPLX3	3.26E-05	0.004906	-1.35178
284	RAB9B	3.35E-05	0.004964	-1.05218
285	PPP1R1A	3.54E-05	0.005127	-1.01958
286	AFAP1L2	3.70E-05	0.005269	-1.0279
287	SCUBE2	3.78E-05	0.005319	-1.34677
288	NDRG2	3.83E-05	0.005349	-1.20006
289	PTGER2	3.89E-05	0.005417	-1.07612
290	OLFML1	4.09E-05	0.005591	-1.02692
291	LAMB3	4.37E-05	0.005853	-1.83798
292	LGALS3BP	4.46E-05	0.005914	-1.03875
293	STAC	4.54E-05	0.005931	-1.3183
294	RBPM2	4.59E-05	0.005955	-1.06224
295	UPK1A	4.85E-05	0.006241	-1.15801
296	EHD2	4.93E-05	0.006256	-1.04506
297	SMTN	4.97E-05	0.006259	-1.03168
298	FLRT3	5.03E-05	0.006279	-1.383

299	S100A16	5.06E-05	0.006294	-1.07949
300	RARRES2	5.36E-05	0.006524	-1.06702
301	FOXF2	5.61E-05	0.006761	-1.31271
302	MYLK	5.70E-05	0.00678	-1.05802
303	CHGB	5.95E-05	0.007021	-1.07218
304	LMOD1	6.18E-05	0.007216	-1.20985
305	RASL12	6.96E-05	0.007939	-1.08109
306	FHL2	7.73E-05	0.008543	-1.23072
307	ADD3	7.86E-05	0.008596	-1.08835
308	RHOJ	7.88E-05	0.008599	-1.11581
309	CSRP2	8.49E-05	0.009009	-1.09052
310	CHD9	8.61E-05	0.009074	-1.01985
311	NELL1	8.97E-05	0.009337	-1.05371
312	SLC16A5	9.05E-05	0.009355	-1.17149
313	HSPB1	9.06E-05	0.009355	-1.04626
314	SEMA6D	9.23E-05	0.009441	-1.30103
315	PTGIS	9.54E-05	0.009644	-1.00257
316	ENPP2	9.98E-05	0.009939	-1.08393
317	SERPINB11	0.000102	0.010004	-1.24475
318	CTSB	0.000102	0.010058	-1.00916
319	PLAC9	0.000105	0.01015	-1.24906
320	KIF1A	0.000105	0.01015	-1.08647
321	ANTXR2	0.000107	0.01027	-1.14668
322	CLU	0.000107	0.0103	-1.05254
323	ARMCX1	0.000117	0.010879	-1.06264
324	CPA6	0.000136	0.012163	-1.13947
325	ZBTB20	0.00014	0.012428	-1.62814
326	ARHGAP23	0.000153	0.012983	-1.13867
327	DPYSL3	0.000154	0.012983	-1.09384
328	PI15	0.000164	0.013578	-1.11184
329	PTN	0.000166	0.013642	-1.01278
330	NTNG2	0.000174	0.01387	-1.57753
331	SEMA3E	0.000179	0.014129	-1.07072
332	ATF3	0.000181	0.014197	-1.16815
333	DSC3	0.000187	0.014383	-1.45086
334	KCNMB1	0.000211	0.015705	-1.08722
335	CLIP3	0.000211	0.015718	-1.07321
336	TPM2	0.000214	0.015819	-1.14378
337	CCL2	0.000214	0.015819	-1.10997
338	PEBP4	0.000219	0.015994	-1.06739
339	ST8SIA1	0.000223	0.016196	-1.02967
340	TF	0.000224	0.016198	-1.07531
341	HSPB8	0.000241	0.016912	-1.00953



342	STOX2	0.000241	0.016912	-1.00156
343	MSMB	0.000259	0.017553	-1.08283
344	PCDH10	0.000275	0.018377	-1.08003
345	WFDC2	0.000291	0.018989	-1.35767
346	ID1	0.000293	0.018989	-1.07215
347	ADAMTS5	0.000319	0.020037	-1.19766
348	RLN1	0.000337	0.020694	-1.25954
349	PDK4	0.000358	0.021344	-1.41417
350	AVPI1	0.00038	0.022258	-1.08191
351	ITGB4	0.000408	0.023156	-1.21046
352	TMEM37	0.00041	0.023177	-1.22674
353	CHRD1	0.000428	0.023774	-1.04605
354	MEG3	0.000461	0.0249	-1.19196
355	RECQL4	0.000462	0.024902	-1.08944
356	OLFM4	0.000466	0.024974	-1.14253
357	BMP5	0.000466	0.024974	-1.96824
358	CSTA	0.000552	0.027581	-1.58095
359	CHN1	0.000596	0.028714	-1.04787
360	MCC	0.000641	0.030016	-1.09534
361	ETS2	0.000647	0.030244	-1.2114
362	ZNF655	0.000714	0.032324	-1.19572
363	VEGFA	0.000752	0.033219	-1.03928
364	TRAF3IP2	0.000904	0.0378	-1.01914
365	KRT13	0.000931	0.038458	-1.04605
366	LMO3	0.000981	0.039591	-1.16439
367	HMGCLL1	0.000985	0.039627	-1.00165
368	AFF3	0.001349	0.048058	-1.09016