

Supplementary table S1 The primer sequences of genes

Gene	Sequence (5'-3')
COMP-F	GTGATGGCGATGGTATAGGG
COMP-R	TCACAAGCATCTCCCACAAA
ITGA11-F	CTGGAATGGAGCTGTGCTAA
ITGA11-R	GGACACGACCGATGTGACTG
COL4A6-F	GATGGCTGTAATGGA ACTCA
COL4A6-R	CTTTGAAACTACCTGGAGCA
RAC2-F	GTGGACAGCAAGCCAGTGAA
RAC2-R	GAGGGAGAAGCAGATGAGGA
CCND2-F	GGAACAGAAGTGCGAAGAAG
CCND2-R	TTGATGGAGTTGTCTGGTGTA
CPT1C-F	GCTGGGCTACTCAACAGACG
CPT1C-R	GCCAAATAGGGAGAATGGAA
ACADL-F	TGTTTCATCAGTAATGGGTCA
ACADL-R	AAAGAATAGTTCTGCGGTAT
GLI2-F	TGCCTCCGAGAAGCAAGAAG
GLI2-R	TCCTGGTGTTCGCATGTCAAT
PTGS2-F	CCCTTGGGTGTCAAAGGTAA
PTGS2-R	AACTGATGCGTGAAGTGCTG
AGTR1-F	ATACCTGGCTATTGTTCCACC
AGTR1-R	TTGGGACTCATAATGGAAAG
MYL2-F	TGATTACGTTTCGGGAAATGC
MYL2-R	TCTCCGTGGGTGATGATGTG
ITGA1-F	CATCAGCCAAGTCAATGTTT
ITGA1-R	TTTCACTCCGAAGTTCTCCC
ERBB2-F	CTGCCTGACCTCAGCGTCTT
ERBB2-R	GGTGGGTGTTATGGTGGATG
RACK1-F	TGGGATTTAGAGGGAAAGAT
RACK1-R	GTGTAGCCAGCAAACAGAGT

Supplementary table S2 The antibodies used in the study

Antibody	Brand	No	Molecular wt(KDa)	Isotype	Dilution rate
RACK1	Cell Signaling Technology	#5432	32	Rabbit IgG	1:500
pErbB2(Tyr1248)	BBI Life Sciences	D155034	138	Rabbit IgG	1:200
CPNE3	Proteintech	11186-1-AP	60	Rabbit IgG	1:200
CPNE3	Santa Cruz	sc-390143	60	mouse IgG	1:250
Integrin a11	abcam	ab198826	133	Rabbit IgG	1:500
PKC	Santa Cruz	sc-17769	80	Rabbit IgG	1:200
PI 3-kinase C2a	Santa Cruz	sc-365290	190	Rabbit IgG	1:200
FAK	Santa Cruz	sc-558	125	Rabbit IgG	1:200
pFAK(Ser722)	Santa Cruz	sc-16662	125	Rabbit IgG	1:200

Supplementary table S3 Relationship between CPNE3 mRNA levels in NSCLC tissue and their clinicopathologic characteristics

Clinicopathologic parameters	Number of cases	CPNE3(mean±SD)	P-value
Age			
≤65	37	0.0056±0.0043	0.40
>65	25	0.0048±0.0025	
Gender			
Male	38	0.0057±0.0039	0.29
Female	24	0.0046±0.0033	
Tumor size(cm)			
≤3	24	0.0041±0.0033	0.048*
>3	38	0.0060±0.0040	
Degree of differentiation			
well and moderate	38	0.0051±0.0032	0.56
poor	24	0.0057±0.0043	
TNM stage			
Stage I + II	50	0.0047±0.0030	0.024*
Stage III + IV	12	0.0074±0.0051	
Metastasis			
No metastasis	43	0.0053±0.0030	0.91
Distant metastasis	19	0.0054±0.0050	

Supplementary table S4 The information of 117 NSCLC patients

geo_accession	Status	Days	expression	Group
GSM333706	0	2932	-1.6484	Low
GSM333690	1	2102	-1.6259	Low
GSM333684	0	3260	-1.6082	Low
GSM333734	0	2528	-1.5564	Low
GSM333692	0	3182	-1.5312	Low
GSM333691	0	3057	-1.458	Low
GSM333688	0	3169	-1.4228	Low
GSM333724	0	2520	-1.4228	Low
GSM333678	1	223	-1.3147	Low
GSM333753	1	186	-1.2863	Low
GSM333770	0	1955	-1.2828	Low
GSM333749	0	1956	-1.255	Low
GSM333686	1	694	-1.2176	Low
GSM333679	0	3245	-1.1877	Low
GSM333741	0	2339	-1.0985	Low
GSM333739	1	1501	-0.9971	Low
GSM333701	0	2701	-0.9914	Low
GSM333733	0	2533	-0.9885	Low
GSM333687	0	3246	-0.9828	Low
GSM333779	0	1823	-0.8997	Low
GSM333720	0	2702	-0.8651	Low
GSM333709	1	361	-0.8443	Low
GSM333745	1	1333	-0.8365	Low
GSM333705	0	2749	-0.8135	Low
GSM333777	1	1618	-0.8059	Low
GSM333712	0	2426	-0.8034	Low
GSM333750	1	749	-0.7884	Low
GSM333774	0	2041	-0.7809	Low
GSM333699	0	2905	-0.7588	Low
GSM333789	1	1222	-0.7418	Low
GSM333676	0	3214	-0.737	Low
GSM333754	0	2342	-0.7322	Low
GSM333768	1	1213	-0.7226	Low
GSM333778	0	1849	-0.7108	Low
GSM333685	1	1855	-0.6873	Low
GSM333776	0	1994	-0.6781	Low
GSM333782	0	1843	-0.6689	Low
GSM333729	1	440	-0.6529	Low
GSM333695	0	2974	-0.6484	Low
GSM333767	0	2019	-0.6484	Low
GSM333780	0	1836	-0.6394	Low
GSM333766	1	1920	-0.6326	Low

GSM333740	0	2260	-0.6148	Low
GSM333751	0	2335	-0.5995	Low
GSM333717	0	2702	-0.5951	Low
GSM333746	0	2348	-0.5886	Low
GSM333694	0	3170	-0.5778	Low
GSM333716	0	2729	-0.5628	Low
GSM333674	0	3275	-0.5543	Low
GSM333771	0	2067	-0.5543	Low
GSM333773	0	1967	-0.55	Low
GSM333755	1	1074	-0.5374	Low
GSM333680	0	3274	-0.5332	Low
GSM333683	0	3295	-0.527	Low
GSM333786	0	1858	-0.527	Low
GSM333673	1	1326	-0.5187	High
GSM333761	0	2288	-0.5084	High
GSM333775	1	1042	-0.5002	High
GSM333710	1	397	-0.4982	High
GSM333784	0	1907	-0.48	High
GSM333681	1	511	-0.4739	High
GSM333714	0	2797	-0.4719	High
GSM333752	1	860	-0.4719	High
GSM333704	0	2813	-0.4403	High
GSM333730	0	2525	-0.4383	High
GSM333763	0	2101	-0.4093	High
GSM333742	1	1229	-0.3921	High
GSM333693	0	3004	-0.3846	High
GSM333785	1	713	-0.3147	High
GSM333715	0	2355	-0.3058	High
GSM333723	1	596	-0.2987	High
GSM333783	0	1852	-0.2916	High
GSM333697	1	1271	-0.2828	High
GSM333744	1	777	-0.2602	High
GSM333707	1	1389	-0.2567	High
GSM333765	1	2144	-0.2567	High
GSM333781	0	1931	-0.2567	High
GSM333787	0	1696	-0.255	High
GSM333743	0	2341	-0.2498	High
GSM333759	1	477	-0.1993	High
GSM333760	0	2294	-0.1943	High
GSM333713	1	2193	-0.191	High
GSM333731	1	482	-0.191	High
GSM333682	0	3245	-0.1649	High
GSM333758	1	906	-0.1584	High
GSM333725	1	2347	-0.1488	High

GSM333675	1	1687	-0.1094	High
GSM333711	0	2506	-0.1047	High
GSM333735	0	2353	-0.0908	High
GSM333700	1	2885	-0.0877	High
GSM333703	0	2910	-0.0877	High
GSM333726	1	1880	-0.0831	High
GSM333772	0	2009	-0.0786	High
GSM333702	1	896	-0.074	High
GSM333736	0	2507	-0.0514	High
GSM333721	0	2456	-0.041	High
GSM333719	1	828	-0.0247	High
GSM333788	1	1252	0.0086	High
GSM333738	0	2521	0.0314	High
GSM333689	1	1030	0.0704	High
GSM333708	0	2796	0.0718	High
GSM333718	1	636	0.2091	High
GSM333747	1	1008	0.2314	High
GSM333728	0	2072	0.2618	High
GSM333757	1	304	0.294	High
GSM333762	0	2268	0.308	High
GSM333698	0	2979	0.3311	High
GSM333727	1	2050	0.4255	High
GSM333764	0	2189	0.5291	High
GSM333732	1	1164	0.547	High
GSM333722	1	784	0.6627	High
GSM333748	1	1201	0.6862	High
GSM333756	1	867	0.7553	High
GSM333737	0	2519	0.8679	High
GSM333769	1	1044	1.0793	High
GSM333677	1	1200	1.1525	High
GSM333696	0	2879	1.2648	High

Supplementary Table S5 The list of 849 altered genes

Gene ID	H1299 sh-NC	H1299 sh-CPNE3	Fold change
MAPK10	0.10013	0.82917	8.280934785
CREG2	0.13747	1.13834	8.280643049
NOXRED1	0.78885	6.12395	7.763136211
ENKUR	0.26422	1.91445	7.24566649
CALR3	0.67322	4.87791	7.245640355
COL1A2	0.52887	3.83199	7.245618016
OXTR	0.21775	1.5777	7.245464983
SPAG8	0.72219	4.85897	6.728104792
PAK7	0.19941	1.23846	6.210621333
GOLGA8H	0.51759	3.21451	6.210533434
SLC16A4	0.31036	1.92749	6.210497487
MPZ	0.45632	2.83396	6.210466339
FST	0.66211	3.76939	5.692996632
AKR7A3	1.1496	6.54463	5.69296277
RYR1	0.06155	0.31857	5.175792039
DNAH2	0.05704	0.29522	5.175666199
ZNF578	0.13672	0.7076	5.175541252
KLHL32	0.26023	1.34683	5.175537025
GJA1	0.32364	1.675	5.175503646
CAPN14	0.24444	1.2651	5.175503191
SERPINF2	0.41861	2.16651	5.175485535
PALM2	0.30352	1.57086	5.175474433
CFAP58	0.27703	1.43376	5.175468361
JMJD7	0.49868	2.5809	5.175463223
NPPA	0.87759	4.54193	5.175457788
C22orf15	0.47119	2.43862	5.175449394
CT62	0.345	1.78553	5.175449275
COL3A1	0.28841	1.49265	5.175444679
ATP5EP2	2.553	13.21289	5.175436741
IGF2BP2-AS1	0.28782	1.48959	5.175422139
SERPINA5	0.2619	1.35544	5.175410462
TLR3	0.14618	0.75654	5.175400192
NAALAD2	0.1355	0.70126	5.175350554
EPHB3	0.86752	4.26533	4.916693563
ZNF492	0.69463	3.35536	4.83042771
LCA5L	0.33759	1.57248	4.657957878
MFNG	0.64622	3.01004	4.657918356
THEGL	1.09638	5.10682	4.657892337
SOX17	2.51812	11.72912	4.65788763
PRCD	0.37056	1.72602	4.657869171
MITF	0.2722	1.26787	4.657861866
GAP43	1.4129	6.33738	4.485370515

FRMD4B	0.09813	0.40631	4.140527871
DNAH3	0.1314	0.54406	4.140487062
DGKI	0.06322	0.26176	4.140461879
ADGRF3	0.17061	0.7064	4.140437255
TMEM105	0.25934	1.07377	4.140394848
C6orf25	0.33466	1.38562	4.140381282
DCN	0.1216	0.50347	4.140378289
ANKRD2	0.65136	2.69687	4.140367846
LRCH2	0.79862	3.30658	4.140367133
TACR2	0.68471	2.83495	4.140365994
RAB41	2.92531	12.11182	4.140354356
CYGB	0.3333	1.37998	4.140354035
HIGD1B	2.28317	9.45313	4.140353106
SP140	0.50587	2.09448	4.140352264
ENOX1	0.83818	3.47036	4.140351714
CLDN6	1.69564	7.02054	4.140348187
CBY3	1.25211	5.18417	4.140347094
MFSD4	0.35293	1.46125	4.140339444
TEX19	1.0154	4.2041	4.140338783
GIN1	0.7051	2.91935	4.140334704
OGN	0.29597	1.22541	4.140318276
ADRA1D	0.36717	1.5202	4.140316475
DYX1C1	0.33696	1.39512	4.14031339
LRP2BP	0.26706	1.10571	4.140305549
AEBP1	0.19837	0.82131	4.140293391
GRM2	0.13852	0.5735	4.140196362
ZMAT1	0.39253	1.48979	3.795353221
MICU3	0.64019	2.42973	3.795326387
PGBD5	0.777	2.94896	3.795315315
GMPR	3.08259	11.39553	3.696738781
USH1C	0.4695	1.70092	3.622832801
LCN12	0.69734	2.52634	3.622823874
ACRC	1.62867	5.90037	3.622814935
CDKN2A-AS1	3.26546	11.83015	3.622812712
SERPINE3	0.75376	2.73073	3.622810974
PRDM12	1.58789	5.75262	3.622807625
CTAG1B	1.96975	7.13602	3.622804924
RCAN2	0.53044	1.92168	3.62280371
RASGRF1	0.2264	0.82019	3.62274735
CEP295NL	1.78192	6.27109	3.519288184
IKZF2	0.2413	0.83256	3.450310816
C1R	0.62792	2.16651	3.450296216
NCKAP1L	0.46805	1.61491	3.450293772
TMEM253	1.50368	5.18813	3.450288625

GPR87	1.83378	6.32707	3.450288475
ZNF154	0.50648	1.7475	3.450284315
ZNF624	0.57932	1.99881	3.450269281
FAM76B	2.60286	8.75611	3.364034178
FANCM	1.04466	3.48422	3.335266977
HACD4	0.10062	0.31247	3.105446233
ZNF334	0.18594	0.57741	3.105356567
C1orf101	0.2271	0.70522	3.105328049
RAB37	0.19371	0.60153	3.105312064
TUBB7P	0.34415	1.06869	3.10530292
BTBD8	0.50276	1.56122	3.105298751
MACROD2	0.17332	0.53821	3.105296561
PTGER2	0.39745	1.2342	3.105296264
SPIB	0.45919	1.42592	3.105294105
PDX1	0.393	1.22038	3.105292621
CCDC146	0.22053	0.68481	3.105291797
CABP7	0.60319	1.87308	3.105290207
EXTL1	0.21664	0.67273	3.105289882
EBF3	0.42522	1.32043	3.105286675
IQUB	0.16679	0.51793	3.105282091
IFNE	0.66773	2.07349	3.105282075
SLC9B1	0.66033	2.05051	3.105280693
ZNF564	0.27137	0.84268	3.105280613
PCDHB8	0.36256	1.12585	3.105279126
ENTPD2	0.3733	1.1592	3.105277257
TNFSF12	0.31213	0.96925	3.105276648
CARD18	1.04564	3.247	3.105275238
TMEM255A	0.25477	0.79113	3.105271421
C1orf54	2.91015	9.0368	3.105269488
KCNS3	0.94178	2.92448	3.105268746
TNFRSF19	0.19265	0.59823	3.105268622
NAP1L3	1.48981	4.62626	3.105268457
PHOSPHO2	2.66189	8.26588	3.10526731
CDH4	0.2924	0.90798	3.105266758
TAS2R5	0.8547	2.65407	3.105265005
MILR1	2.13675	6.63517	3.105262665
EBLN2	0.58541	1.81785	3.105259562
ZNF208	0.14431	0.44812	3.105259511
PRSS35	0.37688	1.17031	3.105258968
ALPK2	0.10422	0.32363	3.105258108
CIB3	1.38243	4.2928	3.105256686
QRFP	2.3915	7.42622	3.105256115
NAT1	1.23909	3.84769	3.105254663
TRIM74	0.66819	2.0749	3.105254493

CCDC87	1.01157	3.14118	3.105252232
LDB2	0.17596	0.5464	3.105251193
LDLRAD2	0.21891	0.67977	3.105248732
ACTC1	0.21188	0.65794	3.105248254
DCDC2B	0.5259	1.63305	3.105248146
MSLN	0.38395	1.19226	3.105248079
TAS2R14	0.41826	1.2988	3.105245541
TAC1	0.52061	1.61662	3.105241928
COL25A1	0.15897	0.49364	3.105239982
MAGED4	0.20439	0.63468	3.105239982
CTRL	0.36203	1.12419	3.105239897
MYO1D	0.12714	0.3948	3.10523832
DES	0.39891	1.23871	3.10523677
SCNN1B	0.25087	0.77901	3.105233786
AZU1	0.5485	1.70322	3.105232452
STARD6	0.52788	1.63919	3.10523225
AKR1C2	0.32301	1.00302	3.10522894
CXCR6	0.26079	0.80981	3.105218758
FGFR2	0.13031	0.40464	3.105210652
EDNRA	0.23193	0.72019	3.105204156
ST14	0.22596	0.70165	3.10519561
CIITA	0.16333	0.50717	3.10518582
C11orf87	0.16705	0.51872	3.10517809
PLCL1	0.12403	0.38513	3.105135854
PBX1	0.04515	0.14019	3.104983389
LIG4	1.55946	4.61193	2.957389096
ALOXE3	1.56846	4.59991	2.932755697
CCDC15	2.44554	7.17216	2.932751049
TBC1D8B	0.41372	1.17766	2.846514551
MEIS1	0.71915	2.04707	2.846513245
EGR4	1.65472	4.71015	2.846493667
CLHC1	0.89396	2.54464	2.846480827
NEFM	0.89825	2.55685	2.846479265
ANKRD26	2.74321	7.77766	2.835240466
NECAB1	2.30081	6.50953	2.829234052
BCL11A	1.06863	2.94968	2.760244425
CYP39A1	1.03718	2.86287	2.760244123
CEP70	4.00187	11.04611	2.760237089
S1PR4	1.74171	4.80753	2.760235631
ZCCHC12	1.3217	3.6482	2.760233033
TMTC1	0.20147	0.5561	2.760212439
ATP11C	0.3981	1.09884	2.760211002
CELF4	0.45143	1.24604	2.760206455
NDN	7.29622	19.95945	2.735587743

PIK3CA	3.44659	9.40529	2.728868244
MANEA	3.0319	8.238	2.717108084
ZNF678	0.87311	2.37233	2.717103229
RAB11FIP2	3.18659	8.57585	2.691231065
SIX2	2.22881	5.99823	2.691225362
NUDT12	1.59859	4.25489	2.661651831
FPGT	1.57014	4.17916	2.661648006
CRH	12.765	33.69287	2.639472777
CLK4	2.10871	5.52093	2.618155175
SOCS1	21.66402	56.47567	2.606887826
COL4A3	0.21545	0.55754	2.587792991
LRRIQ3	0.22443	0.58077	2.587755648
EMILIN3	0.51786	1.34009	2.587745723
TGM4	0.36116	0.93459	2.587745044
MLC1	0.45748	1.18384	2.587741541
MYRIP	0.66955	1.73262	2.587738033
FAM46C	0.34182	0.88454	2.587736235
LILRB3	0.47993	1.24193	2.587731544
ZNF540	0.45674	1.18192	2.587730437
MAGED4B	0.79091	2.04666	2.58772806
CORT	1.73965	4.50174	2.587727416
DAAM2	0.26497	0.68567	2.587726912
GPBAR1	0.73024	1.88966	2.587724584
CNN1	0.66887	1.73085	2.587722577
BHMG1	0.7151	1.85048	2.587721997
C11orf94	5.3274	13.78581	2.587718212
ERVMER34-1	0.48217	1.24772	2.587718025
NKX2-8	1.55893	4.03407	2.587717216
AMZ1	0.28039	0.72557	2.587717108
MAP9	0.66585	1.72303	2.587714951
P2RX2	0.98735	2.55498	2.58771459
ACSS3	0.32116	0.83107	2.587713289
ZNF441	0.82806	2.14278	2.587711035
DAND5	0.98884	2.55883	2.587708831
STK33	0.77639	2.00907	2.587707209
ADAM21	0.73792	1.90952	2.587705984
WDR17	0.50296	1.30151	2.587700811
LZTS1	0.34452	0.89151	2.587687217
PAX5	0.21243	0.5497	2.58767594
COL4A4	0.19867	0.51409	2.587657925
ITGA1	0.58235	1.47956	2.540671418
TMEM52	9.86604	24.89229	2.523027476
HOOK1	1.72313	4.31036	2.50147116
PRKAA2	1.26189	3.15656	2.501454168

ZBTB8B	0.38293	0.95128	2.484213825
TSNAXIP1	3.82751	9.50834	2.484210361
MYO7B	1.11618	2.77282	2.484205057
RNF43	1.70257	4.20242	2.468280306
CNTN1	1.04955	2.58015	2.458339288
C21orf91	1.73407	4.24254	2.446579435
TMSB15A	20.08856	49.01307	2.439849845
TRIQQ	2.92357	7.11146	2.432457578
SLC4A4	0.35267	0.85178	2.41523237
TNS1	0.18908	0.45667	2.41522107
EPHA4	0.39035	0.94278	2.415217113
LSAMP	0.28443	0.68696	2.415216398
IFI16	0.55699	1.34525	2.415213918
SH2D6	0.76431	1.84597	2.415211105
EXOC3L4	0.84733	2.04648	2.415210131
KIF25	1.05424	2.54621	2.415209061
WNT4	0.65136	1.57317	2.41520818
SERPINF1	3.84322	9.28217	2.41520652
APLF	1.64702	3.97789	2.41520443
CXCL3	1.32885	3.20944	2.415201114
PNMT	2.02383	4.88795	2.415197917
SOWAHA	0.85322	2.06069	2.415191861
COL8A2	0.63142	1.525	2.415191156
PPP4R4	3.95217	9.40894	2.380702247
ARNT2	1.26974	3.02287	2.380699986
PDZD7	2.88441	6.84935	2.374610406
KCNJ8	5.53972	13.10651	2.365915606
MPP7	1.04612	2.47503	2.365914044
GMFB	10.98149	25.92653	2.360930074
OMA1	2.908	6.84099	2.35247249
USP53	0.90477	2.12844	2.352465267
CFAP54	0.30911	0.71991	2.32897674
RBM44	0.64996	1.51373	2.328958705
ZNF254	1.06145	2.47207	2.328955674
MIPOL1	0.43326	1.00904	2.328947976
HOXA6	6.11925	14.25141	2.328947175
PELI1	5.71872	13.31859	2.328945988
KRT86	1.64228	3.82478	2.328945125
CA8	0.67986	1.58335	2.328935369
SHE	0.46578	1.08477	2.328932114
ZNF277	6.12173	14.19382	2.318596214
PRKACB	3.9752	9.14373	2.300193701
TRDMT1	1.86598	4.2492	2.277194825
WAS	2.06406	4.70026	2.277191555

B3GALT1	1.83618	4.18133	2.2771896
DNAJC28	2.60028	5.92133	2.27718938
G2E3	1.96091	4.46536	2.277187632
OTP	1.10439	2.5149	2.27718469
KIAA1755	2.59733	5.88902	2.267336072
ZDHHC21	3.33683	7.55543	2.264253798
GNPDA2	11.27247	25.47039	2.259521649
RBAK	3.10688	7.0165	2.258374961
MTUS1	0.49104	1.10126	2.242709352
IQGAP2	1.49226	3.34669	2.242698993
LRRC37A	0.90646	2.03291	2.242691349
RGCC	5.71456	12.81599	2.242690601
SYCP2L	2.81635	6.31619	2.242686456
SRSF12	1.29671	2.90811	2.242683406
ZNF117	0.64374	1.42785	2.218053873
TRHDE	2.01326	4.46551	2.218049333
KCTD8	2.5445	5.64382	2.218046768
ARL14	10.70036	23.73389	2.218045935
BTBD19	1.95464	4.33548	2.218045267
CCDC149	0.82045	1.80464	2.199573405
ZNF654	1.58341	3.48282	2.199569284
KCNC1	0.79895	1.75733	2.199549409
ZNF782	4.04312	8.8105	2.179133936
SNCG	14.97609	32.63489	2.179132871
LYST	0.95204	2.07462	2.179131129
LZTFL1	5.45982	11.86793	2.173685213
LAMTOR3	13.95511	30.334	2.173684048
UBE2F	7.27898	15.8222	2.173683675
APC	1.65459	3.5884	2.168754797
RNF144B	1.9853	4.29674	2.164277439
OTUD6B	11.12163	24.047	2.162183061
FSD1L	1.19417	2.57516	2.156443387
ZDBF2	2.29427	4.94745	2.15643756
CRYM	3.11868	6.72523	2.156434774
MSMO1	46.90209	100.96531	2.152682535
CD58	7.16644	15.40639	2.149796831
NRIP1	3.34237	7.17556	2.146847895
GPAT3	87.29373	187.16738	2.144110236
C1orf27	3.78677	8.08427	2.1348722
TMEM106B	2.40995	5.13575	2.13106081
SUZ12	10.65927	22.68815	2.128490037
C7orf60	4.5131	9.58877	2.124652678
MBNL2	6.0375	12.70699	2.104677433
LCOR	2.91794	6.13218	2.10154424

RICTOR	3.40934	7.13301	2.09219673
HMCN2	0.07948	0.16455	2.070332159
PKHD1	0.05631	0.11658	2.070324987
USP6	0.08721	0.18055	2.070290104
TSPAN11	0.13818	0.28607	2.070270661
IGFN1	0.08112	0.16794	2.070266272
MARVELD3	0.15248	0.31567	2.07023872
TMC3	0.20274	0.41972	2.070237743
KCNJ5	0.16089	0.33308	2.070234322
CYB5R2	0.11434	0.23671	2.070229141
IRAK3	0.09825	0.2034	2.070229008
BTBD11	0.24808	0.51358	2.070219284
APOBR	0.2592	0.5366	2.070216049
PDE1A	0.15666	0.32432	2.070215754
ZNF98	0.29866	0.61829	2.070213621
LPAR6	0.24014	0.49714	2.070209045
CCDC38	0.18559	0.38421	2.070208524
CYP17A1	0.29028	0.60094	2.070208075
EPB42	0.35267	0.7301	2.070207276
PDK4	0.2175	0.45027	2.070206897
LCNL1	0.24257	0.50217	2.070206538
C16orf96	0.2571	0.53225	2.070206145
IHH	0.48586	1.00583	2.070205409
CAMK2A	0.15982	0.33086	2.070203979
RGAG1	0.17777	0.36802	2.070203071
CHADL	0.37862	0.78382	2.070202314
EFCC1	0.33375	0.69093	2.070202247
KDM4E	0.42022	0.86994	2.070201323
LEPR	0.34316	0.71041	2.07020049
NME8	0.40299	0.83427	2.070200253
PCDH12	0.14416	0.29844	2.070199778
P2RX1	0.24758	0.51254	2.070199531
LMOD1	0.24758	0.51254	2.070199531
FETUB	0.48562	1.00533	2.070198921
EVI2B	0.47437	0.98204	2.070198368
GPR62	0.45087	0.93339	2.070197618
CCDC148	0.51868	1.07377	2.070197424
SLCO4C1	0.36854	0.76295	2.070195908
EFHB	0.70831	1.46634	2.070195253
C1orf127	0.27509	0.56949	2.070195209
TTYH1	0.41713	0.86354	2.070193944
COL4A2	0.24931	0.51612	2.070193735
GRIN2C	0.34391	0.71196	2.070192783
F2RL2	0.28664	0.5934	2.070192576

SLC26A8	0.16284	0.33711	2.070191599
NAALADL1	0.24305	0.50316	2.070191319
NFAM1	0.16897	0.3498	2.070189975
REP15	0.86295	1.78647	2.070189466
OTUD7A	0.59354	1.22874	2.070189035
CDHR2	0.18379	0.38048	2.070188802
CARD6	0.22354	0.46277	2.070188781
PRDM7	0.2395	0.49581	2.070187891
OIT3	0.4156	0.86037	2.07018768
SMOC1	0.22497	0.46573	2.070187136
MSLNL	0.30206	0.62532	2.070184732
PFKFB1	0.9552	1.97744	2.070184255
HOXD4	0.67138	1.38988	2.070183801
PCDHGA7	0.21344	0.44186	2.070183658
FOXH1	1.17807	2.43882	2.070182587
GNRH1	1.6735	3.46445	2.070182253
KRT19	1.26229	2.61317	2.070181971
OLAH	0.41578	0.86074	2.070181346
UPK2	1.7774	3.67954	2.070181163
TRIML2	0.96679	2.00143	2.070180701
CCDC173	0.87916	1.82002	2.070180627
FAM186A	0.23696	0.49055	2.070180621
TUBA3D	1.84525	3.82	2.070180192
CLDN5	0.85993	1.78021	2.070180131
LINC01600	0.40382	0.83598	2.070179783
STAC3	0.46894	0.97079	2.070179554
MMP13	0.69365	1.43598	2.070179485
TEKT4	0.44315	0.9174	2.070179397
HIST2H2BF	0.44657	0.92448	2.070179367
GIP	1.37277	2.84188	2.070179273
TTLL6	0.57852	1.19764	2.070179078
ANP32D	2.48208	5.13835	2.070179043
VASH2	0.28285	0.58555	2.07017854
ISLR	0.73598	1.52361	2.070178537
APOA1	0.69024	1.42892	2.070178489
WNT8B	0.93078	1.92688	2.0701777
GAGE2A	1.86156	3.85376	2.0701777
C14orf178	1.39617	2.89032	2.0701777
RNF219	2.78522	5.7659	2.07017758
C1orf204	0.78601	1.62718	2.070177224
FAT2	0.13523	0.27995	2.070176736
PSORS1C2	0.8547	1.76938	2.07017667
EAF2	3.88719	8.04717	2.070176657
RHD	0.29668	0.61418	2.070176621

LTB	3.20164	6.62796	2.070176535
RPA4	0.63825	1.32129	2.070176263
CEACAM1	0.5338	1.10506	2.070176096
IL1RAPL1	0.26804	0.55489	2.070176093
ACSBG2	0.28457	0.58911	2.070176055
MYL2	2.16499	4.48191	2.070175844
DDR2	0.54962	1.13781	2.070175758
GGNBP1	1.02386	2.11957	2.07017561
RECQL	27.0572	56.01315	2.070175406
TCTE3	7.66896	15.87609	2.070175095
LRRRC40	9.88358	20.46074	2.070174977
TRPM2	3.07845	6.37293	2.070174926
MAOA	5.83257	12.07444	2.070174897
SLPI	1.64917	3.41407	2.070174694
KCTD12	4.41826	9.14657	2.070174684
FABP3	2.87399	5.94966	2.070174218
PDE5A	0.2015	0.41714	2.070173697
GPC5	0.97672	2.02198	2.070173642
ARL6	2.17361	4.49975	2.070173582
RGS4	0.81299	1.68303	2.070173065
CD4	0.21447	0.44399	2.070172985
LY96	3.23857	6.7044	2.070172947
ERICH6	0.47369	0.98062	2.070172476
SLFN11	0.16431	0.34015	2.070172235
C6orf58	0.64242	1.32992	2.070172162
PLD4	1.27045	2.63005	2.070171986
DNAJC12	0.46429	0.96116	2.07017166
ITGAX	1.80543	3.73755	2.070171649
ASTL	0.59426	1.23022	2.070171305
CETP	0.47142	0.97592	2.070170973
RNF151	2.01209	4.16537	2.070170817
SLC37A1	0.72124	1.49309	2.070170817
PTCHD4	0.75944	1.57217	2.070170125
CCDC63	0.45005	0.93168	2.070169981
SPINK2	1.28317	2.65638	2.07016997
SAA2	0.44136	0.91369	2.070169476
IRX4	1.05274	2.17935	2.070169273
KLB	0.16161	0.33456	2.070168925
OR2T8	1.04676	2.16697	2.070168902
DCDC2	0.39348	0.81457	2.070168751
FGFBP1	0.72326	1.49727	2.070168404
VAX2	0.85694	1.77401	2.070168273
LRRRC19	0.5447	1.12762	2.070167064
GNG2	0.30841	0.63846	2.070166337

GPR141	1.2754	2.64029	2.070166222
SLX1A	0.39891	0.82581	2.070166203
NRROS	0.67554	1.39848	2.070166089
UGT3A2	0.36485	0.7553	2.070165822
SPATA32	0.50509	1.04562	2.070165713
WDR63	0.25055	0.51868	2.070165636
TMEM130	0.21079	0.43637	2.070164619
CD160	0.24628	0.50984	2.070164041
ZNF711	0.19483	0.40333	2.070163732
PPP1R32	0.81909	1.69565	2.07016323
PVRIG	0.49542	1.0256	2.07016269
MYL7	0.67415	1.3956	2.070162427
ELAVL3	0.4129	0.85477	2.070162267
SAMD9L	0.27552	0.57037	2.070158246
COL15A1	0.29619	0.61316	2.070157669
CFHR4	0.33754	0.69876	2.070154648
GDF5	0.37147	0.769	2.070153714
BEST2	0.37147	0.769	2.070153714
SGK2	0.28367	0.58724	2.070151937
TMEM92	0.31717	0.65659	2.070151654
PTGER3	0.39786	0.82363	2.070150304
SLC30A10	0.17035	0.35265	2.070149692
RAX	0.26387	0.54625	2.070148179
CABP1	0.33558	0.6947	2.070147208
RSPH6A	0.38591	0.79889	2.070145889
ANKRD55	0.33017	0.6835	2.070145683
PADI3	0.30822	0.63806	2.070144702
SPTSSB	0.26246	0.54333	2.070144022
TIGD4	0.39762	0.82313	2.070142347
C7	0.18819	0.38958	2.070141878
MRPL30	0.33917	0.70213	2.070141817
THY1	0.16595	0.34354	2.070141609
BHLHE22	0.29184	0.60415	2.070141173
IL12B	0.356	0.73697	2.070140449
NIM1K	0.2716	0.56225	2.070139912
ATG9B	0.30697	0.63547	2.070137147
CFAP206	0.27205	0.56318	2.070134167
C5AR1	0.33308	0.68952	2.070133301
ACPP	0.23442	0.48528	2.070130535
SLC15A2	0.15828	0.32766	2.070128886
LTF	0.23144	0.47911	2.070126167
CCBE1	0.14945	0.30938	2.070123787
SLC2A14	0.17631	0.36498	2.070103794
TDRD6	0.10872	0.22506	2.0700883

CA12	0.13441	0.27824	2.070084071
ELN	0.15025	0.31103	2.070083195
NIPBL	5.88378	12.09925	2.056373624
CASC5	7.19199	14.78941	2.056372437
NEK7	7.16795	14.65342	2.044297184
FOXN2	6.45586	13.17914	2.041422831
TRMT11	10.96176	22.31456	2.035673104
BLZF1	7.71915	15.71366	2.035672321
ANKRD1	25.33004	51.40943	2.029583451
ZNF280A	9.6094	19.41951	2.02088684
ZNF33B	3.46442	7.00119	2.020883727
CHML	5.1381	10.34929	2.014225103
LRRC16B	3.68516	1.83094	0.496841385
HCN4	6.52731	3.23741	0.495979201
GAL3ST4	6.65493	3.29447	0.495042021
ISLR2	13.81883	6.81921	0.493472313
DEPTOR	7.87223	3.88022	0.492899725
ODF3B	17.08657	8.4009	0.491666847
SLC45A1	59.55967	29.23947	0.490927334
DENND1C	4.01013	1.96619	0.490305801
ST3GAL1	2.1392	1.04886	0.490304787
TMEM221	7.21164	3.51279	0.487100022
LAMA3	6.03321	2.93435	0.486366296
CILP2	13.97709	6.76706	0.484153712
SLC22A5	10.53002	5.09174	0.48354514
AVPR2	6.6085	3.19218	0.483041537
KIAA1958	7.86683	3.8	0.483040818
GPR88	4.22331	2.04003	0.483040553
DUOX1	1.67846	0.81076	0.483038023
RSPO4	25.02599	12.01349	0.48004055
SERPINB2	38.62944	18.51151	0.479207309
TMEM45B	4.22126	2.01664	0.477734136
TNFRSF13C	13.79888	6.59218	0.477732975
PCDHB3	8.05406	3.84769	0.477732969
RELN	1.01074	0.48286	0.477729189
RIMS4	18.12502	8.59879	0.474415477
FAM57B	4.79466	2.27466	0.474415287
CD70	114.84331	54.45574	0.474174247
ZMYND10	8.09076	3.80666	0.470494737
PI16	9.87393	4.64563	0.470494524
NEK10	1.12742	0.53044	0.470490146
SPTBN4	14.64635	6.8831	0.469953265
GAB3	7.83488	3.66872	0.468254779
RASD2	11.52292	5.36725	0.465789053

MEGF6	16.47716	7.66044	0.464912643
IFIT1	133.75676	62.12076	0.464430807
HUS1	6.82409	3.16641	0.464004724
LYG2	7.33511	3.37444	0.460039454
HS3ST5	2.15549	0.99161	0.460039249
PTGES3L	2.99768	1.37905	0.460039097
ARHGAP25	1.60576	0.73871	0.460037615
KIAA1614	0.86769	0.39917	0.460037571
ABCC3	12.67736	5.82032	0.459111361
MUC1	47.0779	21.61059	0.459038955
PDE2A	5.88484	2.69151	0.457363327
FAM198B	1.99575	0.90378	0.452852311
DEGS2	7.84754	3.55377	0.452851467
QRFR	7.28078	3.29711	0.452851206
GALR2	11.52967	5.22122	0.452850775
PROCA1	9.77002	4.42436	0.452850659
HIST2H2AC	51.73183	23.2813	0.450038207
SMS	1218.14537	545.50364	0.447814894
CFAP74	0.66055	0.29303	0.443615169
AQP1	1.76963	0.78503	0.443612507
TFAP2C	2.2109	0.98078	0.443611199
CARD14	0.8358	0.37077	0.443610912
C19orf45	4.7255	2.09628	0.4436102
CASP16P	2.0071	0.89037	0.443610184
GNAT2	5.13841	2.27945	0.443609988
ZNF20	1.65871	0.73582	0.443609793
NBPF4	2.76875	1.22824	0.443608126
RBP5	5.02581	2.22949	0.443608095
CCND2	3.5707	1.56369	0.437922536
ASB16	8.37452	3.64984	0.43582677
FAM155A	10.73904	4.68036	0.435826666
NEUROG2	8.1658	3.55887	0.435826251
SPRY3	1.30778	0.56403	0.431288137
PLXNB3	1.65472	0.71366	0.431287469
MFAP4	5.48088	2.36383	0.431286582
BMP8A	6.97096	3.00648	0.431286365
ARHGAP9	2.30054	0.99219	0.431285698
ADTRP	2.84213	1.22577	0.431285691
PAPPA	1.01917	0.43955	0.431282318
IGDCC3	3.00961	1.28274	0.426214692
GGT1	3.76847	1.60617	0.42621276
HIST1H3J	39.68974	16.91627	0.426212669
NUPR1	15.23189	6.49202	0.426212374
ABCB1	11.68439	4.94769	0.423444442

TP53I11	3.6146	1.52429	0.421703646
KCNQ2	16.83307	7.07049	0.42003568
PRSS50	12.28631	5.15571	0.419630467
TECTA	0.63858	0.2644	0.414043659
ANKHD1-EIF4EBP3	0.43167	0.17873	0.414043135
CSF1R	0.95409	0.39503	0.414038508
MYCBPAP	1.50868	0.62465	0.414037437
DENND2A	0.95465	0.39526	0.414036558
PTPRN2	1.96345	0.81294	0.414036517
PTGS2	0.93272	0.38618	0.414036367
ARMCX4	2.57748	1.06717	0.41403619
GIPC3	5.66842	2.34693	0.41403601
GRID2IP	1.18881	0.49221	0.414035885
PRKACG	3.12828	1.29522	0.414035828
CCNB3	1.8175	0.75251	0.414035763
RTN4RL2	4.11774	1.70489	0.414035369
KIF1A	9.54508	3.952	0.414035294
RGS11	4.09714	1.69636	0.414035156
SLC22A18AS	5.51574	2.28371	0.414035107
NRG4	0.97685	0.40445	0.414034908
CST6	12.95	5.36175	0.414034749
RUNDC3B	3.13027	1.29604	0.414034572
ZHX1-C8orf76	3.91596	1.62134	0.414033851
FOXP2	0.6228	0.25786	0.414033398
NAPSA	2.74478	1.13643	0.414033183
ARC	1.2314	0.50984	0.414032808
ACRV1	2.22176	0.91988	0.414032119
GRAP2	0.79395	0.32872	0.41403111
ABCC11	0.67824	0.28081	0.414027483
CTAGE5	2.89658	1.16597	0.402533332
OASL	185.97769	74.47523	0.400452495
TNK1	3.3103	1.31787	0.398111954
CD19	4.7133	1.87642	0.398111726
SBK3	22.0005	8.70711	0.395768733
B3GNT3	48.69671	19.01255	0.390427813
SELPLG	2.76582	1.07358	0.38815975
FRRS1	2.02296	0.78523	0.388158935
OVOL3	8.94566	3.47233	0.388158057
LYRM9	1.46157	0.56732	0.38815794
ARMC12	5.5453	2.15245	0.388157539
NUTM2D	1.12573	0.43696	0.388157018
HR	0.89518	0.34747	0.388156572
ZMYND15	2.38932	0.92743	0.388156463
PLEKHG4B	1.28874	0.50023	0.388154321

HLA-DMA	7.36985	2.81048	0.381348331
ABCA10	2.22191	0.84732	0.381347579
CD72	3.20449	1.20616	0.376396868
TTL9	3.8463	1.44773	0.376395497
TNNI3	5.32084	2.00274	0.376395456
MICALCL	3.13572	1.18027	0.376395214
CBFA2T3	1.81044	0.68144	0.376394689
CCL2	43.2236	16.10648	0.372631618
GNG7	3.01703	1.11532	0.369674813
GLI2	1.87449	0.69295	0.369673885
OLFM2	17.69229	6.51131	0.368030933
SULT2B1	12.88713	4.68678	0.363679112
SAMD14	2.80189	1.01507	0.362280461
KCNK15	14.8925	5.39526	0.362280342
PROX1	0.33897	0.11696	0.345045284
NPIP4	0.39804	0.13734	0.345040699
POTEI	0.42004	0.14493	0.345038568
SLCO2B1	0.3144	0.10848	0.345038168
SPOCK1	0.4776	0.16479	0.345037688
GPC4	0.5831	0.20119	0.345035157
EDIL3	1.02778	0.35462	0.34503493
CLDN11	0.48885	0.16867	0.345034264
CPT1C	0.50285	0.1735	0.34503331
IL1B	0.95243	0.32862	0.345033231
SPDYE1	1.11314	0.38407	0.34503297
RGPD8	0.42822	0.14775	0.345032927
CCT6B	0.68037	0.23475	0.34503285
ANKRD53	1.16873	0.40325	0.345032642
RBM14-RBM4	1.14424	0.3948	0.345032511
MOV10L1	0.85818	0.2961	0.345032511
SLC4A9	0.8112	0.27989	0.345032051
TPRG1	1.85551	0.64021	0.345031824
C4orf22	0.65878	0.2273	0.345031725
TLR5	0.634	0.21875	0.345031546
LGR6	1.28681	0.44399	0.345031512
PRAM1	0.78361	0.27037	0.345031329
SPNS3	2.19725	0.75812	0.345031289
NOS2	0.70611	0.24363	0.345031227
ASCL1	1.19285	0.41157	0.345030809
ALS2CR12	1.11906	0.38611	0.345030651
FOXR1	2.38376	0.82247	0.34503054
SLC5A10	0.45709	0.15771	0.345030519
SOX10	0.7948	0.27423	0.345030196
CCDC188	2.06637	0.71296	0.345030174

DFNB59	4.80051	1.65632	0.345030007
FXYD6	0.57424	0.19813	0.345029953
C1orf234	4.8419	1.6706	0.345029844
AQP5	1.5643	0.53973	0.345029726
ASCL5	1.45544	0.50217	0.345029682
HIST3H2BB	6.5237	2.25087	0.345029661
UPB1	1.6709	0.57651	0.345029625
KLHDC1	1.96189	0.67691	0.345029538
RAI2	1.1246	0.38802	0.345029344
HKDC1	2.05342	0.70849	0.345029268
PMCH	3.8495	1.32819	0.345029225
TIMM23B	7.42749	2.5627	0.345029074
SDR42E1	5.6166	1.93789	0.345029021
NCF2	2.01415	0.69494	0.34502892
GRIN3A	0.3631	0.12528	0.345028918
PID1	3.5062	1.20974	0.345028806
ACSL5	3.41444	1.17808	0.34502876
HIST1H1E	7.51265	2.59208	0.345028718
C21orf140	7.80083	2.69151	0.34502867
SPINT1	3.28822	1.13453	0.345028617
DMRTA2	0.91433	0.31547	0.3450286
C17orf49	4.48815	1.54854	0.345028575
ATP1B2	0.9001	0.31056	0.34502833
GPX7	1.74377	0.60165	0.345028301
TVP23A	0.55836	0.19265	0.345028297
ADD3-AS1	1.77313	0.61178	0.345028283
PILRA	4.41645	1.5238	0.345028247
SAPCD1	3.78769	1.30686	0.345028236
ARID3C	2.0898	0.72104	0.345028232
HNRNPCL1	2.66129	0.91822	0.345028163
PRSS22	1.23532	0.42622	0.345028009
KEL	0.75165	0.25934	0.345027606
HTRA3	0.8879	0.30635	0.345027593
POPDC2	1.20602	0.41611	0.345027446
ZKSCAN7	1.45687	0.50266	0.345027353
NOL4	1.5555	0.53669	0.345027322
SLA2	1.06954	0.36902	0.345026834
PDE8B	1.27393	0.43954	0.345026807
DHH	1.5231	0.52551	0.345026591
KLHL31	0.51344	0.17715	0.345025709
C2orf61	0.90092	0.31084	0.345025085
CYP26A1	1.18661	0.40941	0.345024903
ADGRB3	0.4482	0.15464	0.345024543
MMP7	1.26936	0.43796	0.345024264

C11orf16	1.13108	0.39025	0.345024225
PPFIA2	0.71053	0.24515	0.345024137
STK32A	0.7556	0.2607	0.345023822
DCLK1	0.76201	0.26291	0.345021719
KCNH8	0.47316	0.16325	0.345020712
ASXL3	0.23503	0.08109	0.345019785
SVEP1	0.20776	0.07168	0.345013477
S100A16	150.81607	49.6435	0.329165851
MFSD6	6.19307	2.02433	0.326870195
GCNT3	3.43673	1.11166	0.323464456
CLDN23	7.25057	2.3453	0.323464224
SLC2A4	3.15812	1.00583	0.318490114
ZC3H12D	2.47487	0.78822	0.318489456
ZNF813	3.59695	1.13313	0.31502523
UCP3	2.66804	0.8285	0.310527578
FXVD7	5.47579	1.70038	0.310526883
ANKRD7	6.02639	1.87135	0.31052587
RP1	1.38437	0.42988	0.310523921
DHX58	6.13836	1.85317	0.301899856
ROBO2	0.82602	0.24429	0.295743444
C6orf223	1.75653	0.51948	0.295742173
TRPC3	3.15756	0.93382	0.295741015
CCER2	6.5093	1.92506	0.295739941
COMP	2.21946	0.65638	0.295738603
CTNND2	2.00505	0.59297	0.295738261
DDX47	2.73029	0.80745	0.295737815
HLA-DQB1	1.403	0.41492	0.295737705
ABCG1	1.1235	0.33226	0.295736538
TXK	5.0957	1.46514	0.287524776
MATK	8.55113	2.45866	0.287524573
CCDC30	0.79858	0.22544	0.282301084
ST8SIA4	1.38721	0.39161	0.282300445
C3	1.29827	0.3665	0.282298751
PCDH10	1.2647	0.35702	0.282296197
CCDC62	2.41392	0.68144	0.282296016
KCNN3	0.79775	0.2252	0.282293952
ZNF132	4.33125	1.19553	0.276024242
TMEFF1	5.48088	1.51285	0.276023193
SALL4	3.63053	1.00211	0.27602306
COL4A6	0.79091	0.20467	0.258777863
LINGO1	0.80204	0.20755	0.258777617
ATP2B2	0.38678	0.10009	0.2587776
ARHGEF33	0.71614	0.18532	0.258776217
B3GAT1	0.34412	0.08905	0.258776008

DNAH11	0.24585	0.06362	0.258775676
MSS51	1.62396	0.42024	0.258774847
TUBA8	1.07982	0.27943	0.258774611
LGALS4	1.48643	0.38465	0.258774379
GATA5	1.51507	0.39206	0.258773522
DCST1	3.69397	0.9559	0.258773082
NKAIN1	5.26497	1.36243	0.258772605
PRSS21	5.94499	1.5384	0.258772513
MSH4	1.2038	0.31151	0.258772221
HIST1H1A	5.03408	1.30268	0.258772209
KRT81	4.07633	1.05484	0.258771984
SSUH2	0.62615	0.16203	0.25877186
GNG13	7.9911	2.06787	0.258771633
ADAMTS10	2.05521	0.53183	0.25877161
PITX3	5.65294	1.46282	0.258771542
DDT	2.24279	0.58037	0.258771441
ERICH2	6.5418	1.69283	0.258771286
TCTEX1D4	3.108	0.80426	0.258770914
HOXD12	2.14491	0.55504	0.258770764
GVQW1	4.28982	1.11008	0.258770764
APCDD1L	0.99737	0.25809	0.258770567
ELF3	0.54674	0.14148	0.258770165
STX16-NPEPL1	1.01882	0.26364	0.25876995
ITGA1	0.69158	0.17896	0.258769774
PRDX2	1.8598	0.48126	0.25876976
NOXO1	1.82104	0.47123	0.258769714
TRPV1	0.78711	0.20368	0.258769422
DIO2	0.52422	0.13565	0.258765404
THSD7A	0.35994	0.09314	0.25876535
KIAA0825	0.37768	0.09773	0.258764033
NEBL	0.2866	0.07416	0.258757851
SH2D7	4.43518	1.05942	0.238867419
VWCE	1.81683	0.41791	0.230021521
FBXO24	2.63828	0.60686	0.230021074
PCDHGB1	1.92726	0.44331	0.230020859
BTG4	4.91179	1.12981	0.230020013
TMEM144	1.48877	0.33022	0.221807264
ZCCHC18	5.51704	1.20224	0.217913954
SULF1	0.5226	0.10819	0.207022579
DNAAF1	0.8275	0.17131	0.207021148
MYOM3	1.04888	0.21714	0.207020822
PNLDC1	2.2451	0.46478	0.207019732
MAP10	0.90175	0.18668	0.207019684
TTC6	0.58381	0.12086	0.207019407

POU4F2	1.56314	0.3236	0.207019205
METTL7B	6.52659	1.35112	0.207017754
UPK1A	3.72031	0.77017	0.207017695
GALR1	3.76592	0.77961	0.207017143
CXCL17	4.13333	0.85567	0.207017102
IGFALS	2.07978	0.43055	0.207017088
FOXS1	7.45755	1.54384	0.20701705
RAB17	1.0275	0.21271	0.207017032
CCDC3	1.33511	0.27639	0.20701665
FGF18	4.94917	1.02456	0.20701653
ESPN	1.19604	0.2476	0.207016488
PCDHB7	1.32289	0.27386	0.207016456
SLC39A5	1.69291	0.35046	0.207016321
AGTR1	1.41303	0.29252	0.207016128
PRR35	2.21775	0.45911	0.20701612
RAC2	1.94097	0.40181	0.207015049
SH3RF3	1.69437	0.35076	0.207014997
MSC-AS1	0.78207	0.1619	0.207014717
CPAMD8	0.48186	0.09975	0.207010335
CACNA1H	1.27439	0.23984	0.188199845
CHRM4	7.36509	1.38609	0.188197293
C10orf25	3.51265	0.66107	0.188196945
ENPP4	2.32465	0.43749	0.188196073
SLC52A1	1.49909	0.25862	0.172517994
42439	1.19866	0.20679	0.172517645
CDC20B	1.30416	0.22499	0.172517176
ARMCX2	1.6432	0.28348	0.17251704
TUSC1	2.39635	0.41341	0.172516536
PHLDA3	2.90657	0.50143	0.172516058
DIRAS3	2.98907	0.51566	0.172515197
TLDC2	2.31	0.39851	0.172515152
FAM71F2	2.27876	0.39312	0.172514877
SGCG	6.53817	1.12793	0.172514633
FBP2	4.5191	0.77961	0.172514439
YY2	4.30312	0.74235	0.172514362
CYP3A5	0.87616	0.15115	0.172514153
XCL1	4.31414	0.74425	0.172514105
DTX1	1.3443	0.23191	0.172513576
OCIAD2	2.37512	0.40974	0.172513389
ATCAY	2.18302	0.3766	0.172513307
ABHD14A-ACY1	2.72524	0.47014	0.172513247
PRKG2	1.57223	0.27123	0.172512927
TLE4	0.73033	0.12599	0.172511057
SYT7	3.13711	0.51271	0.163433861

FAM159B	9.47905	1.50948	0.159243806
EPHA1	1.45369	0.21496	0.147871967
ACSM4	2.77769	0.41074	0.147871073
HHIPL2	2.0932	0.30952	0.147869291
EFCAB10	2.66886	0.39464	0.147868378
LCP1	1.31908	0.19505	0.147868211
PCDHGA1	1.47869	0.21865	0.147867369
AURKC	5.08107	0.58437	0.11500924
PCDHB10	6.30452	0.6215	0.098580066
PCDHGB2	2.3494	0.22108	0.094100621
MUC3A	1.95408	0.18388	0.094100549
UNC5B	1.58046	0.14872	0.094099186
OVCH1-AS1	5.87287	0.55263	0.094098797
LINC01551	4.15844	0.3913	0.094097787
CPNE3	130.24356	5.54233	0.042553582

Supplementary table S6 The top ten KEGG pathways

Term	Count	%	PValue	Genes
hsa04742:Taste transduction	7	0.831354	0.005901	PRKACG, TAS2R14, TAS2R5, PDE1A, GNG13, PRKACB, SCNN1B
hsa04974:Protein digestion and absorption	10	1.187648	0.005063	COL4A4, COL4A3, COL4A2, ATP1B2, COL3A1, ELN, COL1A2, COL15A1, COL4A6, CTRL
hsa04512:ECM-receptor interaction	11	1.306413	0.001323	COL4A4, COL4A3, COL4A2, LAMA3, COMP, COL3A1, COL1A2, ITGA11, ITGA1, RELN, COL4A6
hsa04713:Circadian entrainment	11	1.306413	0.002579	PRKACG, KCNJ5, GRIN2C, GNG13, RYR1, CACNA1H, GNG2, PRKG2, PRKACB, CAMK2A, GNG7
hsa04310:Wnt signaling pathway	13	1.543943	0.004974	MMP7, MAPK10, DAAM2, GPC4, PRKACG, WNT4, RAC2, CCND2, SOX17, PRKACB, CAMK2A, WNT8B, APC
hsa05146:Amoebiasis	14	1.662708	1.34E-04	COL4A4, PRKACG, COL4A3, COL4A2, LAMA3, COL3A1, COL1A2, SERPINB2, PIK3CA, IL1B, IL12B, PRKACB, NOS2, COL4A6
hsa04020:Calcium signaling pathway	17	2.019002	9.31E-04	PTGER3, TACR2, OXTR, EDNRA, PRKACG, AGTR1, ATP2B2, P2RX1, GRIN2C, PDE1A, P2RX2, RYR1, CACNA1H, NOS2, PRKACB, CAMK2A, ADRA1D
hsa04510:Focal adhesion	18	2.137767	0.00159	COL4A4, COL4A3, MYL7, COL4A2, MYL2, COL3A1, ITGA1, ITGA11, MAPK10, COL4A6, LAMA3, RAC2, RASGRF1, CCND2, COMP, COL1A2, PIK3CA, RELN
hsa04080:Neuroactive ligand-receptor interaction	22	2.612827	0.001364	F2RL2, AVPR2, PTGER2, C5AR1, PTGER3, TRPV1, TACR2, LEPR, OXTR, GRIN3A, EDNRA, AGTR1, GRM2, CHRM4, GALR1, P2RX1, GRIN2C, LPAR6, S1PR4, P2RX2, GALR2, ADRA1D
hsa05200:Pathways	29	3.444181	5.94E-04	FGFR2, FGF18, PTGS2, MITF,

in cancer

ARNT2, GNG13, GLI2, PRKACG,
EDNRA, AGTR1, WNT4, RAC2,
PIK3CA, GNG2, PRKACB, NOS2,
APC, CSF1R, GNG7, WNT8B,
COL4A4, COL4A3, PTGER2,
COL4A2, PTGER3, MAPK10,
COL4A6, LAMA3, LPAR6
