

**Table S1. Significantly differential expressed genes between trastuzumab treated versus non-treated single cancer cells.** Genes with adjusted p-value <0.05 and fold-change >1.5 were considered as significantly differential expressed.

GeneID	Estimate	Fold Change	Raw p-value	Bonferroni Adjusted p-value
IL8	-5.2501	-38.0563	3.2383E-16	1.7958E-11
HLA-DRA	-4.8251	-28.3473	3.1197E-17	1.73E-12
CD74	-4.4628	-22.051	2.5143E-21	1.3943E-16
TFF3	-3.3728	-10.3588	1.0686E-08	0.0006
HLA-B	-3.3131	-9.9389	6.8568E-25	3.8024E-20
B2M	-3.1411	-8.8219	2.5767E-20	1.4289E-15
LDHB	-3.1302	-8.7553	1.8061E-26	1.0016E-21
CXCL1	-3.117	-8.676	7.4085E-19	4.1083E-14
IFITM3	-3.0724	-8.412	1.6979E-20	9.4158E-16
RGS1	-2.9804	-7.892	5.7703E-18	3.1999E-13
HLA-A	-2.8803	-7.3629	7.616E-18	4.2234E-13
HSPA1B	-2.8217	-7.0697	3.9498E-10	0.000021903
IFITM1	-2.793	-6.9306	2.932E-17	1.6259E-12
CEACAM6	-2.619	-6.1433	2.1305E-13	1.1814E-08
SPP1	-2.5945	-6.0396	4.2484E-11	2.3559E-06
RGS2	-2.5909	-6.0247	2.9824E-15	1.6538E-10
CIB1	-2.5212	-5.7405	2.381E-10	0.000013204
ANXA1	-2.4904	-5.6195	4.3452E-18	2.4096E-13
NGRN	-2.4845	-5.5965	3.4096E-11	1.8908E-06
CXCL10	-2.4364	-5.4129	1.6102E-12	8.9291E-08
S100A6	-2.3918	-5.2482	6.1933E-14	3.4344E-09
H3F3B	-2.3715	-5.1746	1.5671E-20	8.6902E-16
BC016015	-2.2992	-4.9218	1.5038E-12	8.3393E-08
RPL19	-2.2681	-4.817	2.377E-19	1.3182E-14
HLA-DMA	-2.2392	-4.7213	1.0083E-15	5.5914E-11
S100A10	-2.234	-4.7043	2.8142E-18	1.5606E-13
MT1X	-2.1922	-4.5699	8.117E-14	4.5012E-09
CCL3	-2.1733	-4.5105	4.3039E-08	0.0024
FTL	-2.1564	-4.4579	8.1563E-15	4.523E-10
HLA-DPA1	-2.1044	-4.3002	2.7817E-11	1.5426E-06
HLA-DPB1	-2.1044	-4.3002	1.0535E-10	5.8419E-06
NFKBIA	-2.0961	-4.2754	9.4086E-12	5.2175E-07
CD74	-2.0851	-4.243	9.8685E-16	5.4725E-11
PSMB9	-2.0718	-4.2042	1.8441E-17	1.0226E-12

TMSB4X	-2.0516	-4.1457	1.1844E-15	6.5678E-11
GSTP1	-2.0406	-4.1143	1.2471E-14	6.9159E-10
CXCL17	-1.9921	-3.9781	1.0045E-18	5.5703E-14
IFI27	-1.9406	-3.8385	4.5839E-17	2.542E-12
NGS-17	-1.9253	-3.7981	4.9277E-12	2.7326E-07
HSP90AA1	-1.8706	-3.6568	4.6772E-11	2.5937E-06
UBD	-1.814	-3.5162	4.8378E-16	2.6828E-11
CRIP1	-1.7546	-3.3744	1.3159E-09	0.000072973
PSMB8	-1.7176	-3.2888	2.6609E-12	1.4756E-07
SOX4	-1.6693	-3.1806	1.459E-08	0.0008
CEACAM5	-1.6675	-3.1766	7.4871E-15	4.1519E-10
KLF6	-1.6624	-3.1655	1.2913E-07	0.0072
AK311497	-1.6356	-3.1072	2.0362E-14	1.1292E-09
HLA-E	-1.6223	-3.0786	3.0721E-15	1.7036E-10
HSPA5	-1.6096	-3.0517	1.39E-08	0.0008
IFITM2	-1.5769	-2.9832	1.9852E-08	0.0011
FAM46A	-1.573	-2.9753	2.1391E-14	1.1862E-09
UBB	-1.5723	-2.9738	1.3365E-11	7.4113E-07
DUSP6	-1.565	-2.9588	8.7432E-07	0.0485
EREG	-1.4941	-2.8168	2.024E-18	1.1224E-13
SOD2	-1.4932	-2.8151	1.4964E-08	0.0008
S100P	-1.4869	-2.8028	9.7587E-13	5.4116E-08
CIB1	-1.473	-2.7759	7.4403E-07	0.0413
HLA-DRB1	-1.4665	-2.7635	1.4769E-13	8.1903E-09
HSPA1B	-1.4647	-2.76	1.8393E-10	0.0000102
NCOA7	-1.4539	-2.7395	6.0111E-12	3.3334E-07
CLIC1	-1.4472	-2.7269	5.8757E-09	0.0003
ILF2	-1.4392	-2.7117	1.2392E-07	0.0069
PFN1	-1.4177	-2.6716	1.3047E-07	0.0072
DAPP1	-1.4047	-2.6477	1.6615E-13	9.2138E-09
BCL2A1	-1.392	-2.6244	3.0048E-07	0.0167
HLA-A	-1.3919	-2.6242	6.6815E-16	3.7052E-11
PNRC1	-1.3702	-2.585	5.2982E-11	2.9381E-06
SRGN	-1.3531	-2.5547	6.1567E-09	0.0003
UBC	-1.3525	-2.5535	2.0274E-08	0.0011
HSPA6	-1.3519	-2.5525	8.1562E-08	0.0045
SELK	-1.3422	-2.5353	7.8476E-09	0.0004
HLA-DRB1	-1.3348	-2.5225	1.5011E-16	8.324E-12
S100A4	-1.3281	-2.5108	8.8284E-10	0.000048957
ATF4	-1.3153	-2.4885	8.6281E-07	0.0478
RND3	-1.2957	-2.455	1.013E-15	5.6178E-11
CPE	-1.2913	-2.4475	5.0718E-18	2.8125E-13
PLAUR	-1.2776	-2.4244	8.1009E-08	0.0045

GAPDH	-1.2719	-2.4148	1.3927E-08	0.0008
GBP1	-1.2568	-2.3897	9.0325E-17	5.0089E-12
BPIFB2	-1.2339	-2.352	2.0655E-10	0.000011454
CD69	-1.2336	-2.3515	6.0207E-08	0.0033
PTMA	-1.2078	-2.3099	4.1997E-16	2.3289E-11
KRT81	-1.2026	-2.3015	9.9233E-12	5.5029E-07
LGALS3BP	-1.2024	-2.3013	2.4701E-07	0.0137
MUC19	-1.1901	-2.2817	2.6004E-09	0.0001
PKIB	-1.179	-2.2642	3.791E-10	0.000021022
RPS29	-1.1687	-2.248	9.0385E-13	5.0122E-08
TNFAIP2	-1.1544	-2.2259	4.4794E-08	0.0025
C8orf4	-1.1381	-2.2009	1.7029E-13	9.4433E-09
DDIT3	-1.1312	-2.1904	3.4538E-07	0.0192
TAPBP	-1.1205	-2.1742	7.8408E-08	0.0043
TNFAIP8	-1.1182	-2.1707	1.3223E-07	0.0073
GLRX	-1.1025	-2.1473	8.323E-12	4.6154E-07
ENSG00000210082	-1.1018	-2.1463	5.2537E-07	0.0291
PSME1	-1.0974	-2.1397	8.1745E-07	0.0453
CCDC170	-1.0965	-2.1384	1.0836E-07	0.006
ATP5E	-1.0763	-2.1086	2.4483E-15	1.3577E-10
LCP1	-1.0679	-2.0964	1.2901E-08	0.0007
LGALS3BP	-1.0655	-2.093	2.4265E-08	0.0013
KRT20	-1.0616	-2.0872	2.1261E-11	0.000001179
PPP3CA	-1.0605	-2.0857	4.7482E-08	0.0026
VIM	-1.0131	-2.0183	4.9594E-10	0.000027502
PSMB8	-1.0083	-2.0116	5.824E-09	0.0003
WBP5	-1.0043	-2.006	4.9912E-16	2.7678E-11
IST1	-1.0005	-2.0006	4.5515E-07	0.0252
BRD2	-0.9956	-1.9939	1.1475E-08	0.0006
HLA-DQB1	-0.9632	-1.9497	3.717E-15	2.0612E-10
HSPE1	-0.9483	-1.9296	2.4727E-07	0.0137
IL2RG	-0.9453	-1.9256	5.2284E-08	0.0029
UBE2J1	-0.942	-1.9211	2.8517E-07	0.0158
RPS27	-0.9392	-1.9175	8.9231E-10	0.000049482
AREG	-0.9378	-1.9156	2.7621E-14	1.5317E-09
HLA-DQB1	-0.9277	-1.9022	2.8175E-07	0.0156
WFDC2	-0.9179	-1.8894	5.818E-09	0.0003
BTG2	-0.9111	-1.8805	3.0879E-07	0.0171
SOD2	-0.9104	-1.8796	1.0985E-07	0.0061
MIA3	-0.8747	-1.8337	2.0772E-09	0.0001
KLF5	-0.8675	-1.8245	5.2581E-14	2.9158E-09
WBP5	-0.854	-1.8075	2.1318E-13	1.1822E-08
HLA-DMB	-0.8493	-1.8016	5.7132E-07	0.0317

GMFG	-0.8118	-1.7554	1.3223E-07	0.0073
RDH10	-0.8074	-1.75	8.0087E-07	0.0444
TAP1	-0.8037	-1.7456	5.3608E-16	2.9728E-11
GSTA1	-0.788	-1.7267	1.1203E-12	6.2123E-08
CALML5	-0.7737	-1.7097	6.3428E-17	3.5173E-12
B3GNT7	-0.7724	-1.7081	3.8038E-07	0.0211
ELF1	-0.7696	-1.7048	8.6686E-07	0.0481
PALLD	-0.7687	-1.7038	1.3301E-15	7.3758E-11
SNHG5	-0.7673	-1.702	6.5058E-08	0.0036
BIRC3	-0.7628	-1.6968	3.5607E-10	0.000019745
UBB	-0.741	-1.6713	6.1272E-09	0.0003
E02193	-0.7394	-1.6694	2.3858E-07	0.0132
CDK12	-0.7334	-1.6625	4.868E-10	0.000026995
SCPEP1	-0.7287	-1.6572	3.4836E-07	0.0193
KLF4	-0.7286	-1.657	5.2076E-12	2.8878E-07
DNAJB11	-0.7211	-1.6484	8.7868E-07	0.0487
SH3BGRL2	-0.7191	-1.6462	1.0525E-12	5.8367E-08
CIB1	-0.7148	-1.6413	2.3126E-08	0.0013
CD83	-0.7106	-1.6365	1.151E-11	6.3826E-07
PSMB10	-0.7106	-1.6365	6.0046E-10	0.000033298
LAPTM5	-0.6999	-1.6244	2.8156E-15	1.5613E-10
TDP2	-0.6845	-1.6071	8.1646E-08	0.0045
HLA-DMA	-0.6828	-1.6052	2.6004E-09	0.0001
NEDD9	-0.682	-1.6043	6.3033E-12	3.4955E-07
NDST4	-0.6762	-1.5979	1.7582E-13	9.7501E-09
STRN3	-0.6713	-1.5925	2.3948E-08	0.0013
CCL20	-0.662	-1.5823	1.2901E-08	0.0007
CXCL2	-0.6582	-1.5781	2.3805E-12	1.3201E-07
HLA-B	-0.6562	-1.5759	1.7745E-09	0.000098401
HSD17B11	-0.6395	-1.5577	4.0879E-07	0.0227
F3	-0.6327	-1.5505	2.214E-10	0.000012278
NDST4	-0.6309	-1.5486	3.933E-11	0.000002181
FAT1	-0.6134	-1.5299	1.8891E-09	0.0001
EMP1	-0.6113	-1.5277	4.6911E-14	2.6014E-09
RPS21	-0.6079	-1.524	8.8911E-07	0.0493
CDC42EP3	-0.5942	-1.5096	8.8761E-13	4.9221E-08
IFI16	-0.5905	-1.5057	4.8413E-07	0.0268
HNRNPC	-0.5884	-1.5036	4.3093E-08	0.0024
ARID5B	0.5887	1.5038	3.1122E-07	0.0173
FAM45B_2	0.5889	1.5041	2.309E-07	0.0128
PROM1	0.5894	1.5046	5.7686E-08	0.0032
ALKBH3	0.5913	1.5066	3.3586E-09	0.0002
BZW2	0.592	1.5074	8.0632E-07	0.0447

ARHGEF10	0.5933	1.5087	3.8597E-07	0.0214
VAMP8	0.5937	1.5092	2.2658E-09	0.0001
LIMA1	0.5947	1.5102	6.502E-11	3.6056E-06
SLC30A8	0.595	1.5105	5.4343E-09	0.0003
IARS2	0.5953	1.5108	6.7908E-10	0.000037658
TBC1D3	0.5966	1.5122	6.2428E-17	3.4619E-12
ACAT1	0.5971	1.5127	1.4127E-07	0.0078
ARID2	0.5986	1.5142	2.8246E-08	0.0016
CTSH	0.6002	1.516	1.9195E-10	0.000010644
DPCD	0.6002	1.516	2.7563E-07	0.0153
TRPA1	0.6015	1.5173	4.4047E-09	0.0002
NOP10	0.6027	1.5185	3.9332E-09	0.0002
C11orf1	0.6084	1.5246	2.0207E-09	0.0001
CAMK2D	0.6105	1.5268	2.8359E-07	0.0157
ALG14	0.6107	1.527	8.7318E-08	0.0048
CALR	0.6139	1.5304	5.5316E-12	3.0675E-07
PSMA1	0.619	1.5358	1.2739E-07	0.0071
RPA2	0.6202	1.5371	2.9081E-08	0.0016
NDUFB6	0.6205	1.5374	1.1402E-08	0.0006
ELF5	0.6208	1.5377	6.3635E-08	0.0035
REEP5	0.6242	1.5414	2.1317E-07	0.0118
LIMCH1	0.6257	1.5429	4.7798E-15	2.6506E-10
RPS11	0.6263	1.5436	5.5308E-08	0.0031
MRPL20	0.6299	1.5475	8.6827E-08	0.0048
C21orf59	0.6309	1.5486	2.3696E-10	0.00001314
SEP15	0.6311	1.5487	1.9304E-07	0.0107
MDM2	0.6339	1.5517	6.1483E-10	0.000034095
RAB6A	0.6348	1.5527	1.8625E-07	0.0103
WWP1	0.638	1.5562	4.5316E-10	0.00002513
RNF135	0.6405	1.5589	6.4473E-12	3.5753E-07
TAT	0.6407	1.5591	1.2737E-09	0.00007063
ANKRD30A	0.6416	1.5601	4.6774E-24	2.5938E-19
TIMM10	0.6442	1.5629	8.9623E-07	0.0497
CHMP5	0.6447	1.5634	5.7642E-07	0.032
PNMT	0.6449	1.5637	5.7229E-14	3.1736E-09
TWF1	0.6526	1.572	1.4001E-08	0.0008
TMEM159	0.6541	1.5737	9.4138E-08	0.0052
AK097794	0.6552	1.5748	7.5035E-18	4.161E-13
PPP6R3	0.6563	1.576	3.9161E-08	0.0022
PLK2	0.6563	1.5761	1.657E-07	0.0092
MPHOSPH6	0.6585	1.5785	6.9462E-07	0.0385
TMEM14A	0.6622	1.5824	2.3701E-08	0.0013
TIMM8B	0.663	1.5833	2.4421E-13	1.3543E-08

MDM4	0.6629	1.5833	2.0633E-09	0.0001
GSDMB	0.6634	1.5838	4.0697E-12	2.2568E-07
USMG5	0.6649	1.5855	1.2062E-08	0.0007
NDUFB3	0.6664	1.5871	2.983E-07	0.0165
TOB1	0.6672	1.588	1.6477E-07	0.0091
NHSL1	0.6675	1.5883	4.1481E-12	2.3003E-07
UBE2V2	0.6691	1.5901	2.5395E-07	0.0141
ADIRF	0.6713	1.5925	2.0468E-08	0.0011
BRD3	0.6725	1.5938	1.6488E-12	9.1433E-08
DCD	0.6787	1.6007	3.0543E-07	0.0169
NDUFAB1	0.6796	1.6017	1.9362E-08	0.0011
COX8A	0.6807	1.6029	3.5807E-10	0.000019857
RPL41	0.6815	1.6038	1.1938E-11	6.6201E-07
EIF5A	0.6839	1.6064	2.4418E-15	1.3541E-10
MRPL50	0.6842	1.6068	1.8666E-07	0.0104
PNKD	0.6856	1.6084	4.3363E-09	0.0002
NDUFA4	0.686	1.6089	5.5272E-08	0.0031
LETM1	0.6894	1.6126	4.8703E-17	2.7008E-12
NFIA	0.691	1.6144	6.6148E-12	3.6682E-07
CAPZB	0.6928	1.6164	9.7202E-09	0.0005
APLP2	0.6933	1.617	4.1752E-09	0.0002
TLK1	0.6943	1.6182	1.7011E-07	0.0094
PNMT	0.6946	1.6184	1.6988E-14	9.4205E-10
SLC50A1	0.6976	1.6218	5.8483E-08	0.0032
LOC440434	0.6983	1.6226	7.3031E-13	4.0498E-08
PPCS	0.7025	1.6273	1.085E-08	0.0006
CASP6	0.7031	1.628	1.7026E-10	9.4415E-06
PAR6B	0.7062	1.6315	1.216E-07	0.0067
BSG	0.7069	1.6323	1.3175E-09	0.00007306
ZAK	0.7077	1.6332	9.8081E-13	5.439E-08
TOMM5	0.7083	1.6338	8.4114E-08	0.0047
RPL8	0.7084	1.634	2.8377E-11	1.5736E-06
TM2D3	0.7096	1.6354	6.1329E-07	0.034
LRRC16A	0.7117	1.6377	4.2773E-11	2.3719E-06
GATA3	0.7151	1.6416	1.1073E-10	6.1406E-06
RPS25	0.716	1.6427	6.1328E-13	3.4009E-08
ATP5J	0.721	1.6483	6.9482E-10	0.00003853
PSMB7	0.7244	1.6522	3.5449E-07	0.0197
MLLT3	0.7302	1.6589	7.7223E-14	4.2823E-09
CDC123	0.7335	1.6626	5.3003E-08	0.0029
PALMD	0.7347	1.6641	1.546E-16	8.573E-12
GSDMB	0.7358	1.6654	5.8086E-11	3.2211E-06
TSTA3	0.7371	1.6668	7.0102E-11	3.8874E-06

VPS28	0.7374	1.6672	7.5694E-08	0.0042
SLC5A8	0.7395	1.6695	6.4888E-15	3.5983E-10
HERC2P7	0.7468	1.6781	3.3951E-09	0.0002
VTA1	0.7505	1.6824	6.0679E-07	0.0336
TRIM5	0.7537	1.6861	9.228E-10	0.000051173
PON3	0.7569	1.6898	5.6881E-09	0.0003
PPP1CB	0.758	1.6911	9.6364E-10	0.000053438
CO9	0.7583	1.6914	1.3337E-09	0.000073959
CWC25	0.7584	1.6916	3.3656E-21	1.8664E-16
EAF1	0.7704	1.7058	5.4903E-10	0.000030446
RPL23	0.7713	1.7068	1.0877E-22	6.032E-18
SLC39A4	0.7728	1.7086	4.1845E-14	2.3205E-09
MSL1	0.7777	1.7143	3.243E-07	0.018
SRSF11	0.7795	1.7165	4.6072E-11	2.5549E-06
TMEM209	0.7797	1.7168	5.1062E-08	0.0028
GPX4	0.7808	1.7181	1.6148E-10	8.9547E-06
SNRPD2	0.7858	1.724	9.3912E-10	0.000052078
RTN3	0.788	1.7266	1.6154E-08	0.0009
ATP5F1	0.7908	1.73	2.3363E-07	0.013
RPL7A	0.7924	1.7319	2.5556E-10	0.000014172
ATPIF1	0.7981	1.7388	5.827E-11	3.2313E-06
ECHS1	0.8011	1.7425	4.6782E-09	0.0003
EIF1AD	0.8035	1.7453	7.8088E-08	0.0043
MSL1	0.8041	1.746	3.288E-16	1.8233E-11
UBE4A	0.8062	1.7487	1.1642E-08	0.0006
TMEM87A	0.807	1.7495	3.0158E-12	1.6724E-07
KMO	0.807	1.7496	1.348E-08	0.0007
UBA6	0.8095	1.7527	1.7837E-14	9.8912E-10
UCP2	0.8131	1.757	8.9696E-14	4.974E-09
PADI2	0.8145	1.7587	1.1797E-11	6.5418E-07
SMIM7	0.815	1.7593	3.4134E-12	1.8929E-07
CA12	0.8195	1.7647	5.1187E-20	2.8385E-15
TMEM141	0.82	1.7654	8.4495E-16	4.6856E-11
COX6A1	0.8209	1.7665	2.6177E-11	1.4516E-06
FRMD8	0.828	1.7752	4.29E-19	2.379E-14
PRDX3	0.8288	1.7762	5.0809E-09	0.0003
NFIB	0.8289	1.7763	2.1704E-10	0.000012035
BLOC1S3	0.8293	1.7769	1.6314E-07	0.009
SLC48A1	0.8358	1.7849	5.944E-09	0.0003
MRPS9	0.8359	1.7849	8.8095E-08	0.0049
ZBTB44	0.8426	1.7932	1.3471E-16	7.4701E-12
PIGR	0.8472	1.799	1.215E-07	0.0067
TMEM41B	0.8478	1.7997	1.3422E-09	0.00007443

NEAT1	0.8527	1.8059	1.3852E-10	7.6815E-06
HENMT1	0.8532	1.8065	3.19E-13	1.769E-08
PAFAH1B3	0.8583	1.8129	3.709E-11	2.0568E-06
H3F3A	0.8602	1.8153	3.4867E-12	1.9335E-07
FAM171B	0.8627	1.8184	6.4674E-10	0.000035864
TRMT112	0.8627	1.8184	1.4002E-09	0.000077645
RASSF3	0.8703	1.8281	3.2939E-18	1.8266E-13
ZAK	0.8723	1.8306	1.4105E-19	7.8216E-15
ETF A	0.8738	1.8325	1.1507E-09	0.00006381
NDUFC2	0.8777	1.8375	1.2376E-10	6.8628E-06
ANKRD10	0.8789	1.8389	3.2816E-08	0.0018
UQCRH	0.8818	1.8427	5.3562E-11	2.9703E-06
WDR83OS	0.8922	1.856	1.8249E-09	0.0001
MINOS1	0.8935	1.8577	5.099E-13	2.8276E-08
RPL9_3	0.8947	1.8593	4.2103E-10	0.000023348
NUP43	0.9011	1.8675	4.3088E-13	2.3894E-08
GLTP	0.9032	1.8702	7.4952E-10	0.000041564
IBA57	0.9036	1.8707	4.6677E-20	2.5884E-15
TRA2A	0.908	1.8765	4.5365E-14	2.5157E-09
ARGLU1	0.916	1.8869	5.36E-11	2.9723E-06
TFAP2C	0.9229	1.8959	8.4797E-11	4.7024E-06
MRPL14	0.9254	1.8993	9.1951E-12	5.099E-07
SRP9	0.9279	1.9025	7.7565E-10	0.000043013
RPL12	0.9284	1.9031	4.5498E-11	0.000002523
ITGB6	0.9302	1.9056	8.0514E-18	4.4648E-13
SMIM14	0.9335	1.9099	7.5469E-12	4.1851E-07
ARHGAP1	0.9359	1.9131	2.7138E-14	1.5049E-09
DYNLL1	0.9366	1.914	2.7598E-10	0.000015304
STC1	0.9375	1.9152	7.437E-18	4.1241E-13
CD46	0.9399	1.9184	1.5192E-07	0.0084
TSC22D1	0.941	1.9199	1.4942E-10	8.2857E-06
PEBP1	0.9425	1.9219	2.3835E-14	1.3217E-09
ANKRD10	0.9439	1.9237	2.8615E-10	0.000015868
RQCD1	0.9449	1.9251	1.101E-08	0.0006
TOMM7	0.9485	1.9299	1.9218E-10	0.000010657
CAP1	0.9488	1.9302	2.1565E-07	0.012
TFAP2B	0.9513	1.9337	1.0504E-26	5.8251E-22
DKFZp586B1922	0.956	1.94	4.4714E-11	2.4796E-06
SAR1A	0.9603	1.9457	7.3536E-08	0.0041
TC2N	0.9682	1.9564	5.8399E-17	3.2385E-12
SNRPN	0.9697	1.9584	8.8733E-11	4.9206E-06
ATP6V1G1	0.9743	1.9647	1.1113E-12	6.1625E-08
TBC1D24	0.9891	1.9849	9.1436E-16	5.0705E-11



ATP6V0B	0.9891	1.9849	1.833E-10	0.000010165
SDC1	0.9937	1.9913	2.581E-10	0.000014313
AB488780	0.9974	1.9965	5.3878E-10	0.000029877
AIG1	0.9976	1.9967	8.3883E-11	4.6517E-06
ALDOA	0.9997	1.9995	3.7998E-07	0.0211
WSB2	1.014	2.0195	7.0378E-17	3.9027E-12
PCMT1	1.0147	2.0205	1.3215E-11	7.3281E-07
FAM111A	1.0217	2.0304	4.4971E-09	0.0002
FAM3B	1.0283	2.0396	2.139E-17	1.1862E-12
PIP4K2B	1.0345	2.0484	4.6602E-24	2.5843E-19
SFXN1	1.0537	2.0759	7.7464E-16	4.2957E-11
PRDX2	1.054	2.0763	9.2686E-13	5.1398E-08
SLC25A3	1.0551	2.0778	7.3009E-09	0.0004
NRIP3	1.0627	2.0888	9.2359E-19	5.1217E-14
GRB14	1.0663	2.0941	2.2022E-15	1.2212E-10
RAP2C	1.0797	2.1135	9.8994E-09	0.0005
TMEM33	1.0853	2.1219	4.0308E-08	0.0022
B4GALT1	1.0885	2.1265	3.0796E-15	1.7078E-10
RBM4	1.0937	2.1342	1.8779E-11	1.0414E-06
R3HDM2	1.1055	2.1517	1.2791E-18	7.0929E-14
FKBP9	1.1088	2.1566	9.4842E-16	5.2594E-11
SH3BGR1	1.1155	2.1667	3.1088E-08	0.0017
RBM6	1.1323	2.1921	2.2871E-13	1.2683E-08
PCMT1	1.1343	2.1952	2.7501E-11	0.000001525
ORMDL3	1.1352	2.1966	5.8225E-14	3.2288E-09
CASP2	1.1371	2.1993	6.979E-11	3.8701E-06
GTF2A2	1.1383	2.2012	1.999E-11	1.1085E-06
SCOC	1.14	2.2038	3.0883E-07	0.0171
MLLT6	1.1548	2.2265	4.3931E-23	2.4362E-18
LRRC1	1.1589	2.2329	9.6906E-16	5.3738E-11
CRABP2	1.1777	2.2622	2.723E-14	1.51E-09
ERBB2	1.1869	2.2766	1.1967E-14	6.636E-10
CYB5A	1.19	2.2815	3.1841E-11	1.7657E-06
PHACTR2	1.2091	2.3119	1.8106E-17	1.004E-12
THAP5	1.214	2.3198	1.0671E-14	5.9177E-10
ABRA1	1.2165	2.3239	2.978E-16	1.6514E-11
SEC22B	1.2389	2.3602	1.0355E-17	5.7422E-13
REEP3	1.2407	2.3631	1.9744E-16	1.0949E-11
VSIG10	1.2508	2.3797	1.4758E-14	8.1839E-10
SCGB1D2	1.2509	2.3799	6.229E-11	3.4542E-06
AP3S1	1.2565	2.3891	3.9951E-14	2.2155E-09
CASC3	1.2651	2.4034	6.7411E-14	3.7382E-09
ZNF823	1.2701	2.4119	3.8267E-07	0.0212

CDK2AP1	1.2783	2.4255	4.981E-17	2.7622E-12
UOCR11	1.2792	2.427	5.0346E-17	2.7919E-12
PCMTD1	1.2898	2.445	5.8258E-17	3.2306E-12
GGCT	1.2925	2.4495	1.2279E-12	6.8092E-08
SERHL2	1.2935	2.4512	8.392E-11	4.6537E-06
DDAH1	1.2952	2.4541	9.1858E-13	5.0939E-08
PTPLAD1	1.2998	2.4619	1.3367E-18	7.4124E-14
TECR	1.3143	2.4868	5.1899E-15	2.878E-10
ENPP1	1.3261	2.5072	3.9513E-18	2.1912E-13
GATA3	1.3267	2.5083	2.1119E-24	1.1712E-19
TRPS1	1.3433	2.5373	4.5605E-17	2.529E-12
CSTA	1.3654	2.5764	6.9106E-22	3.8322E-17
CYP4Z1	1.3766	2.5966	3.7302E-19	2.0686E-14
CACUL1	1.3856	2.6128	5.4642E-16	3.0301E-11
RPS26	1.3888	2.6187	1.6866E-20	9.3529E-16
INSR	1.3954	2.6306	1.0849E-23	6.0162E-19
CCDC152	1.4066	2.6511	1.1338E-18	6.2872E-14
FDFT1	1.4072	2.6522	3.3421E-11	1.8533E-06
SLC40A1	1.4129	2.6628	2.7745E-21	1.5386E-16
PLEKHA5	1.414	2.6648	3.7362E-20	2.0719E-15
MALAT1	1.4236	2.6825	2.3692E-15	1.3138E-10
PDCD4	1.4399	2.713	2.5974E-11	1.4404E-06
RAB3D	1.4561	2.7436	9.3592E-19	5.19E-14
UGDH	1.4645	2.7596	2.4399E-10	0.00001353
SLC35F2	1.4674	2.7653	8.7092E-14	4.8296E-09
PTPRS	1.4919	2.8126	1.9595E-23	1.0866E-18
PTBLP	1.4921	2.813	8.1219E-12	4.5039E-07
SCGB2A2	1.5028	2.8339	3.4227E-07	0.019
RNF135	1.5169	2.8617	1.1847E-23	6.5695E-19
PDCD4	1.5197	2.8672	1.7501E-09	0.000097049
MDK	1.5204	2.8687	1.439E-14	7.9796E-10
C1orf56	1.536	2.8999	1.3251E-19	7.3485E-15
ANKRD30A	1.5469	2.9218	1.2815E-24	7.1065E-20
ACADSB	1.5722	2.9735	1.0411E-13	5.7735E-09
BST2	1.5804	2.9906	2.4609E-16	1.3647E-11
CWC25	1.5852	3.0005	1.9733E-21	1.0943E-16
ELOVL5	1.6089	3.0502	6.2477E-16	3.4646E-11
NUDT19	1.6202	3.0742	8.634E-16	4.7879E-11
IDH1	1.6298	3.0946	2.2709E-12	1.2593E-07
PON2	1.6567	3.1529	1.4095E-09	0.000078165
CTNNB1	1.7231	3.3016	5.6174E-22	3.1151E-17
SCOC	1.7733	3.4183	5.2469E-11	2.9096E-06
MIEN1	1.783	3.4413	7.6905E-22	4.2647E-17

SEPP1	1.7968	3.4746	1.6255E-16	9.014E-12
OAT	1.8006	3.4836	1.3564E-16	7.5219E-12
SET	1.8147	3.5178	3.1175E-20	1.7288E-15
TMEM45A	1.8457	3.5943	2.4585E-15	1.3633E-10
MGST1	1.8464	3.596	1.3646E-15	7.5675E-11
THRSP	1.8885	3.7025	9.4715E-24	5.2523E-19
RELL1	1.9105	3.7593	1.5991E-14	8.8677E-10
CDO1	1.9614	3.8944	5.9445E-24	3.2964E-19
PER2	1.9858	3.9608	8.9663E-23	4.9722E-18
SLC30A8	2.0057	4.0159	8.7755E-10	0.000048664
TMEM45A	2.0062	4.0173	1.536E-16	8.5178E-12
S100A7	2.0305	4.0856	2.0104E-08	0.0011
LIMCH1	2.0513	4.1447	1.1065E-09	0.000061357
NF1	2.0806	4.2297	4.4698E-25	2.4787E-20
SOX11	2.0839	4.2395	2.7933E-22	1.549E-17
SCGB2A1	2.1395	4.4062	7.152E-13	3.9661E-08
TOP2A	2.1529	4.4473	1.3396E-22	7.4285E-18
TNFSF10	2.1879	4.5566	7.5096E-18	4.1644E-13
SNCG	2.1964	4.5834	4.2939E-23	2.3811E-18
CISD3	2.2065	4.6155	2.782E-25	1.5427E-20
EZR	2.2374	4.7155	6.4272E-20	3.5641E-15
RBP1	2.2467	4.7458	1.4206E-20	7.8779E-16
DKFZp451J181	2.2769	4.8462	1.2406E-16	6.8798E-12
PLEKHA5	2.2869	4.8801	2.1867E-25	1.2126E-20
AK026736	2.3744	5.1853	4.109E-24	2.2786E-19
MRPL45	2.3896	5.2401	2.742E-22	1.5205E-17
CLU	2.4335	5.4022	1.2048E-20	6.6812E-16
PPP1R14C	2.4491	5.4609	4.7251E-22	2.6203E-17
VSNL1	2.5272	5.7647	2.3175E-15	1.2851E-10
YWHAE	2.6475	6.2657	4.346E-20	2.41E-15
PSMB3	2.7851	6.8927	1.2327E-22	6.8356E-18
CLEC3A	2.8833	7.3782	1.1418E-12	6.3316E-08
CPB1	3.4418	10.866	2.2348E-10	0.000012393
SULT1E1	3.5841	11.9929	5.8837E-22	3.2627E-17
RPL23	3.8111	14.036	1.2081E-24	6.6992E-20
SEPP1	3.8631	14.5514	6.7132E-25	3.7227E-20
SCGB2A2	4.5616	23.6138	3.1213E-14	1.7309E-09
PIP	4.7832	27.5358	9.3925E-27	5.2085E-22
DCD	6.3026	78.9347	6.6683E-24	3.6979E-19
MGP	6.4026	84.5995	2.3895E-24	1.3251E-19

**Table S2. IPA identified 48-gene signature related with cell death of cardiomyocytes.**

Categories	Diseases or Functions Annotation	p-Value	Predicted Activation State	Activation z-score
Cell Death and Survival	Cell death	6.11E-47	Increased	2.002
Cell Death and Survival	Apoptosis	4.03E-39	Increased	2.608
Organismal Survival	Morbidity or mortality	5.09E-22	Increased	4.321
Organismal Survival	Organismal death	6.43E-22	Increased	4.685
Infectious Diseases	Replication of virus	1.23E-19	Increased	2.481
Infectious Diseases	Replication of RNA virus	1.19E-17	Increased	2.063
Cardiovascular Disease, Hematological Disease, Organismal Injury and Abnormalities	Anemia	1.44E-15	Increased	2.047
Infectious Diseases	Bacterial Infections	1.98E-12	Increased	2.812
Metabolic Disease	Amyloidosis	1.45E-10	Increased	2.158
Cell Death and Survival, Organismal Injury and Abnormalities	Apoptosis of epithelial cells	7.11E-09	Increased	2.006
Cell Death and Survival	Cell survival	2.54E-31	Decreased	-3.324
Cellular Movement	Cell movement	8.54E-30	Decreased	-3.887
Cellular Movement	Invasion of cells	4.5E-29	Decreased	-2.25
Cell Death and Survival	Cell viability	1.34E-27	Decreased	-3.46
Cellular Movement	Cell movement of tumor cell lines	2.83E-27	Decreased	-2.483
Cellular Movement	Migration of cells	4.85E-27	Decreased	-3.456
Cellular Movement	Invasion of tumor cell lines	6.86E-26	Decreased	-2.209
Protein Synthesis	Metabolism of protein	3.78E-25	Decreased	-2.286
Immunological Disease	Hypersensitive reaction	6.42E-25	Decreased	-2.61
Cellular Movement	Migration of tumor cell lines	1.99E-23	Decreased	-2.294
Cell Death and Survival	Cell viability of tumor cell lines	4.91E-22	Decreased	-2.225
Cellular Movement	Cell movement of blood cells	1.15E-19	Decreased	-4.009
Cellular Movement, Immune Cell Trafficking	Leukocyte migration	3.39E-19	Decreased	-4.021
Hematological System Development and Function, Tissue Morphology	Quantity of leukocytes	8.73E-19	Decreased	-3.208

Hematological System Development and Function, Tissue Morphology	Quantity of blood cells	1.87E-18	Decreased	-3.068
Cellular Movement, Hematological System Development and Function, Immune Cell Trafficking	Cell movement of leukocytes	3.68E-18	Decreased	-3.694
Cellular Movement, Hematological System Development and Function, Immune Cell Trafficking, Inflammatory Response	Cell movement of phagocytes	4.13E-18	Decreased	-3.331
Protein Synthesis	Synthesis of protein	4.79E-18	Decreased	-2.064
Cellular Movement	Cell movement of myeloid cells	3.04E-17	Decreased	-3.69
Lymphoid Tissue Structure and Development, Tissue Morphology	Quantity of lymphatic system cells	1.08E-16	Decreased	-3.786
Infectious Diseases	Infection by Retroviridae	2.59E-16	Decreased	-2.355
Infectious Diseases	Infection by lentivirus	3.1E-16	Decreased	-2.285
Free Radical Scavenging	Synthesis of reactive oxygen species	5.61E-16	Decreased	-2.879

**Table S3. IPA predicted top disease and functions related with differential expressed genes.**

GeneID	Prediction (based on measurement direction)	Fold Change
PPP1R15A	Affected	-1.555
CAMK2D	Affected	1.547
MAP2K3	Affected	-2.147
KRAS	Affected	-1.357
RHOA	Affected	-1.643
BNIP3L	Increased	-1.351
IL1RN	Increased	1.696
TXNIP	Increased	-1.687
CTNNB1	Increased	2.756
CALR	Increased	1.538
FOXO3	Increased	1.31
STK4	Increased	-1.823
ACSL1	Increased	-1.522
STAT1	Increased	-1.868
TNF	Increased	-1.535
HK2	Increased	1.343
MDK	Increased	2.575
BAG1	Increased	1.375
PPP3CA	Increased	-2.055
HIF1A	Increased	-1.7
GAPDH	Increased	-2.355
MDM2	Increased	1.63
PTEN	Increased	1.379
PHB	Increased	-1.382
GNAQ	Increased	1.373
PLRG1	Increased	-1.581
CAT	Increased	-1.483
EDN1	Increased	-1.366
SPP1	Increased	2.269
IL1B	Increased	-1.321
CRYAB	Increased	-2.606
MANF	Increased	-1.544
HSPB1	Increased	-1.675
SOD2	Increased	-4.232
NCL	Increased	-1.545
CASP3	Increased	-1.401
MCL1	Increased	-1.64
DSP	Increased	-1.298
HSPD1	Increased	-1.528
HSPE1	Increased	-1.973
PTN	Increased	1.471

CXADR	Increased	-1.585
HDAC2	Increased	-1.521
HMOX1	Increased	-1.415
IL6ST	Increased	-1.32
TNFAIP3	Increased	-1.442
NAMPT	Increased	-1.992
TIMP1	Increased	-1.437