

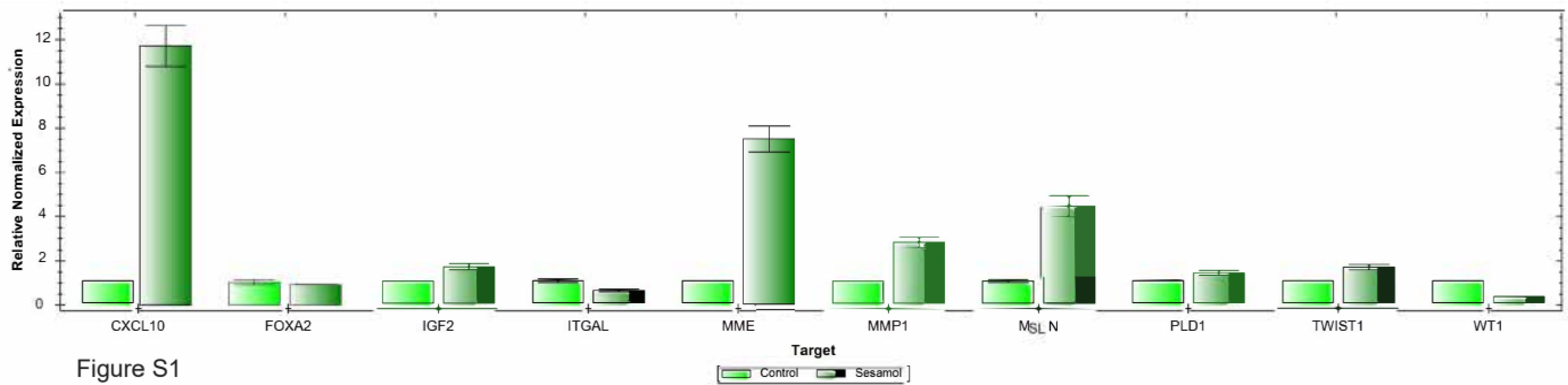
## Supplementary Materials

### Figure Legends

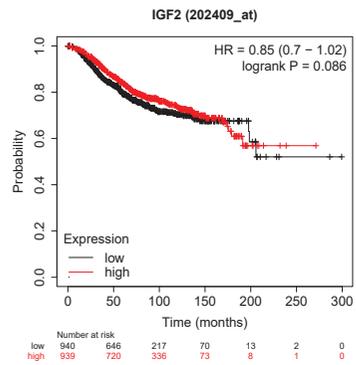
Figure S1 Relative expression of the hub genes in MCF-7 treated by Sesamol. Expression of *CXCL10*, *IGF2*, *MME*, *MMP1*, *MSLN*, and *TWIST1* was increased significantly, while *ITGAL* and *WT1* expression was decreased significantly ( $P < 0.05$ ).

Figure S2 Prognostic analyses of top 10 hub genes.

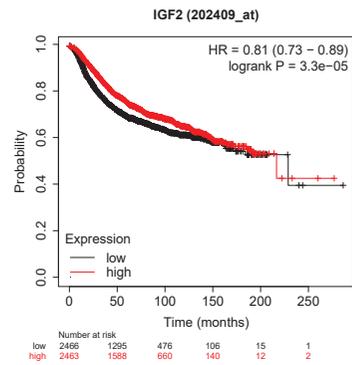
Prognostic value of the top 10 genes were investigated using Kaplan-Meier plotter. 1879, 4929, 2765 and 458 breast cancer patients were analyzed for OS, RFS, DMFS and PPS respectively. (Each row represents OS, RFS, DMFS and PPS of a gene).



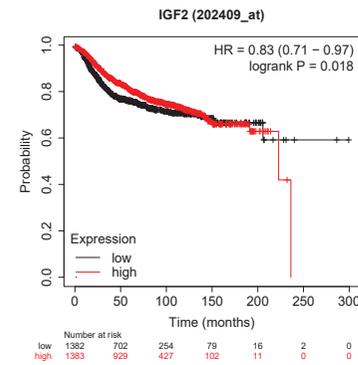
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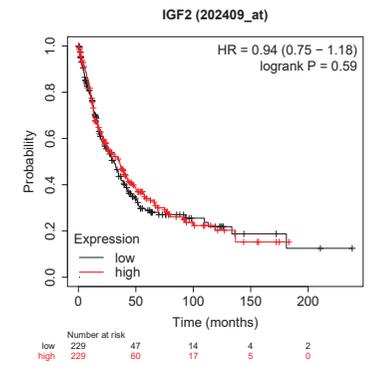
RFS



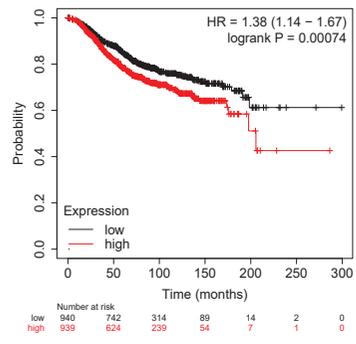
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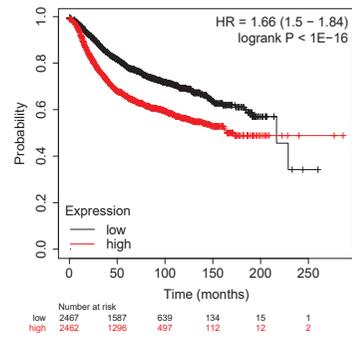
PPS



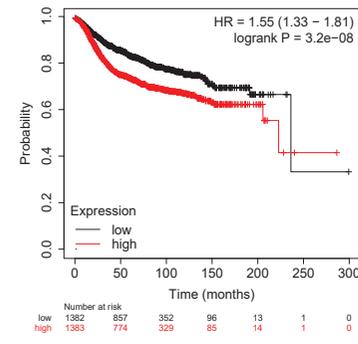
MMP1 (204475\_at)



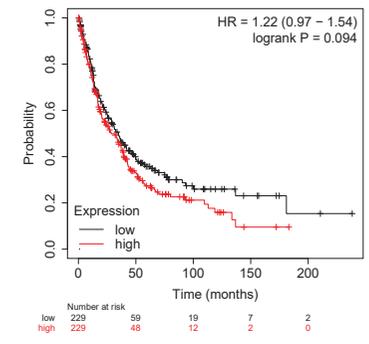
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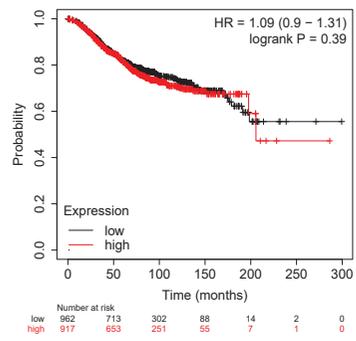
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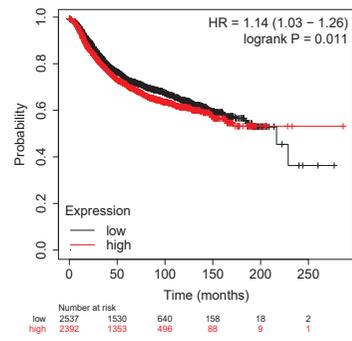
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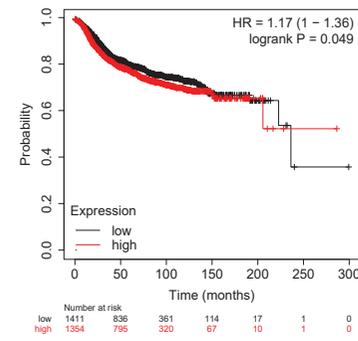
MSLN (204885\_s\_at)



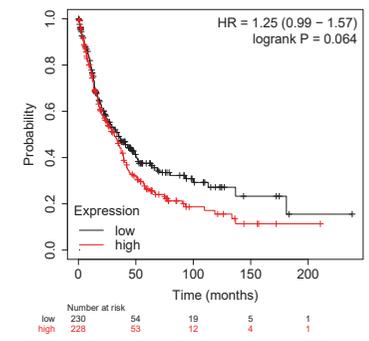
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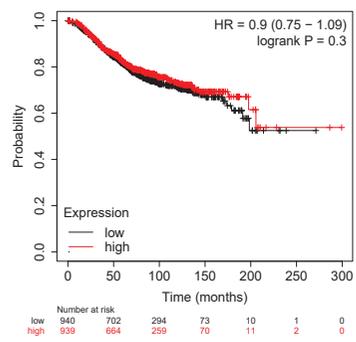
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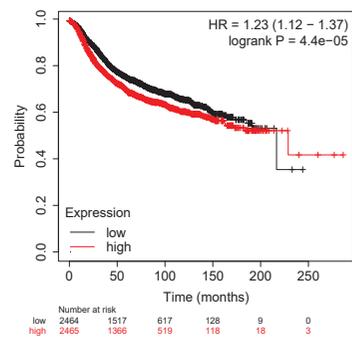
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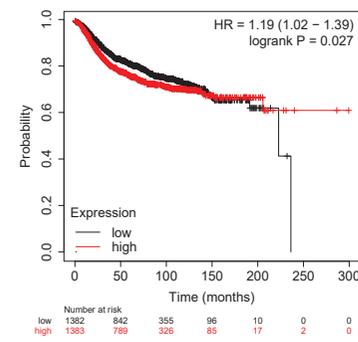
CXCL10 (204533\_at)



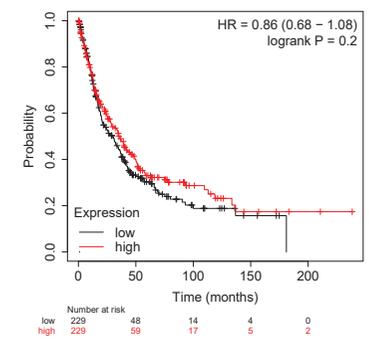
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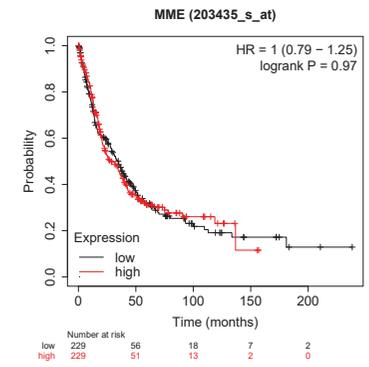
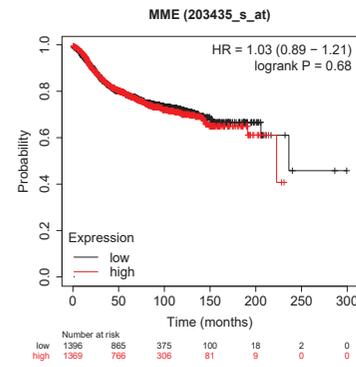
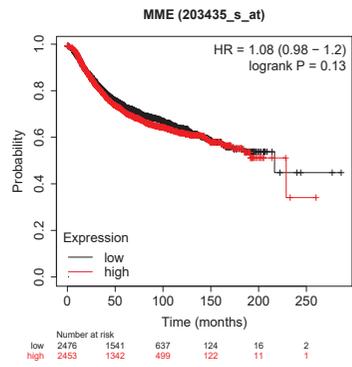
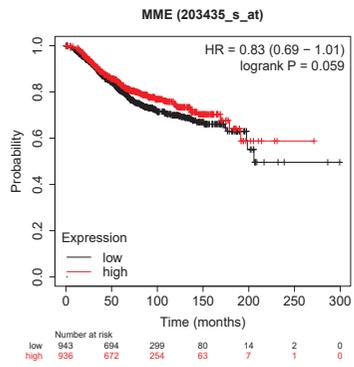
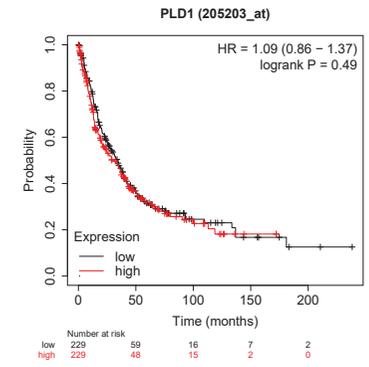
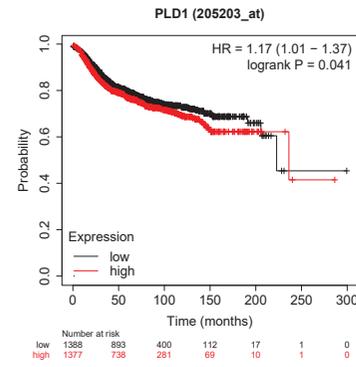
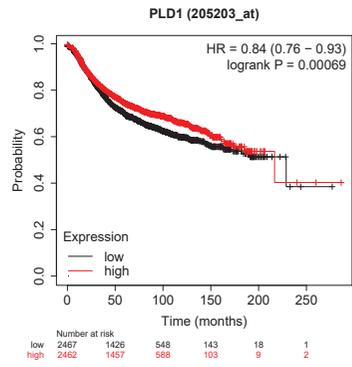
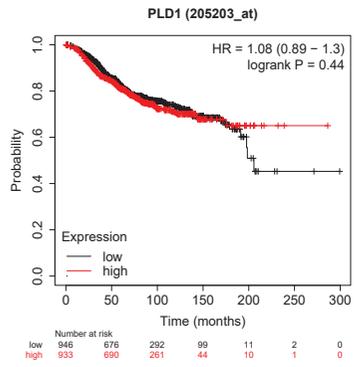
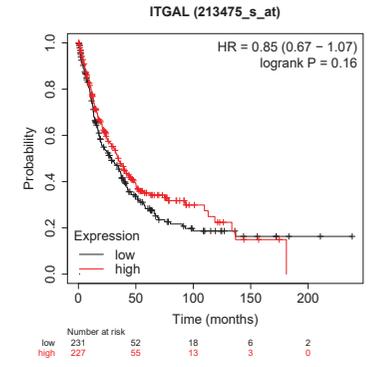
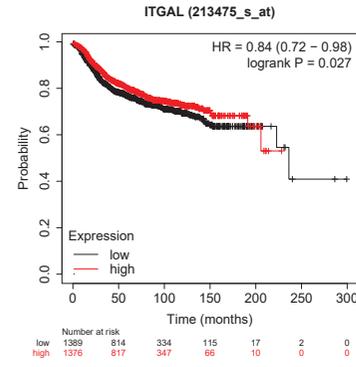
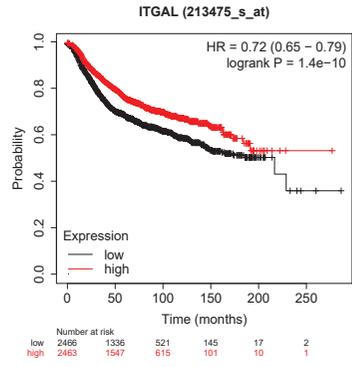
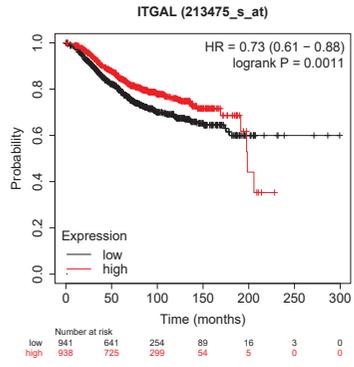
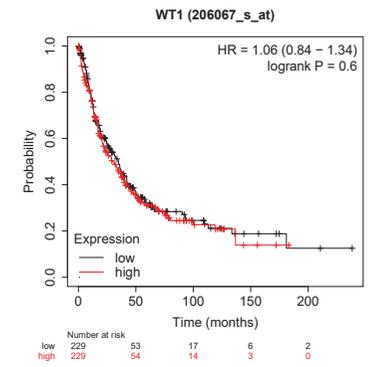
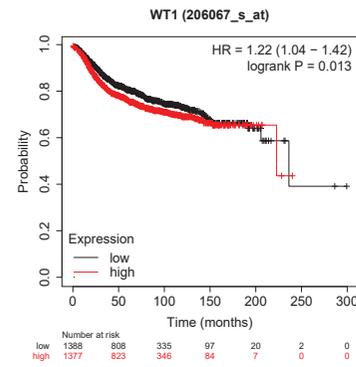
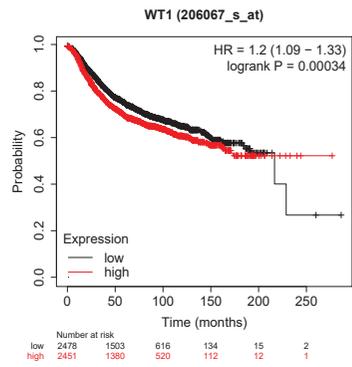
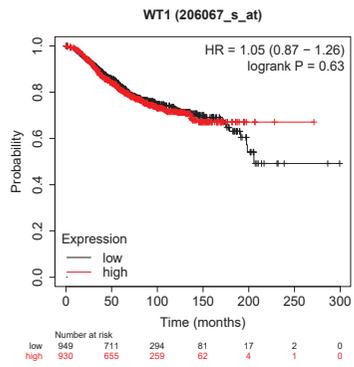


CXCL10 (204533\_at)



CXCL10 (204533\_at)





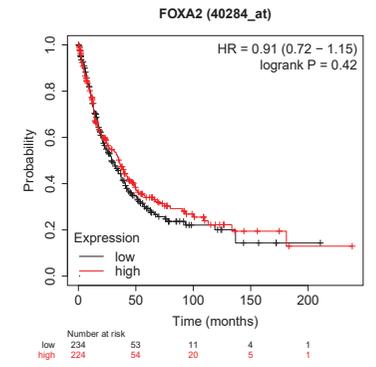
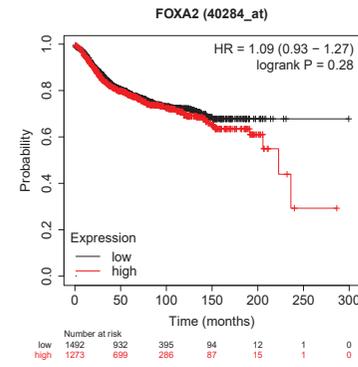
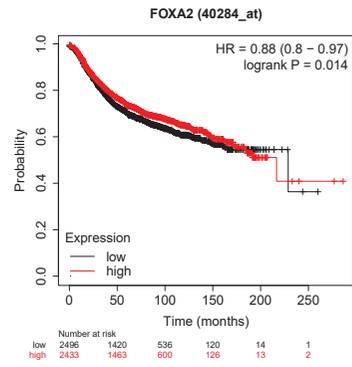
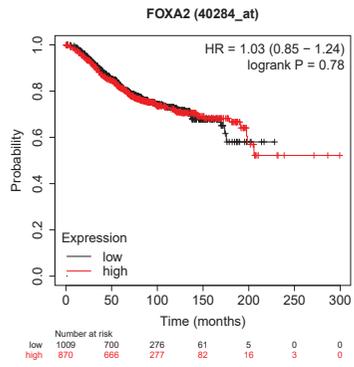
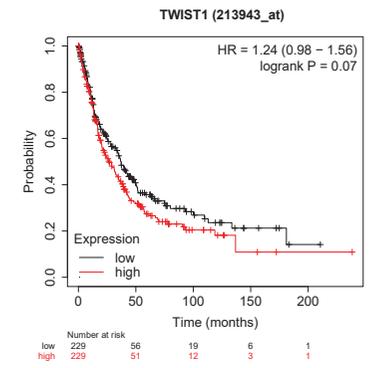
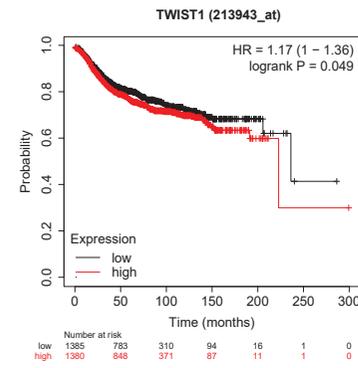
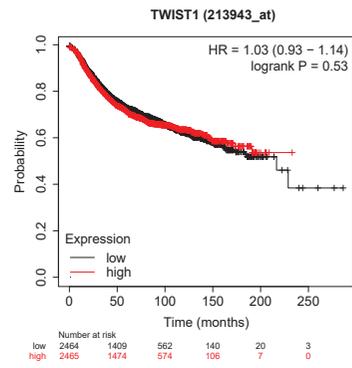
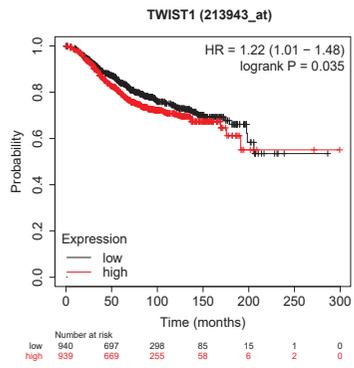


Figure S2

Table S1 Sequences of qRT-PCR primers

Genes	Forward primers	Reverse primers
IGF2	5' GGGCAAGTTCTTCCAATATGACAC 3'	5' TGGGTGGGTAGAGCAATCAGG 3'
MMP1	5' GGGCTGAAAGTGA CTGGGAAAC 3'	5' CATCTGCTCTTGGCAAATCTGG 3'
MSLN	5' TGGATGAGCTCTACCCACAAGG 3'	5' ACTCATTTTCGTGCCCTTTGTTG 3'
CXCL10	5' CTGATTTGCTGCCTTATCTTTCTG 3'	5' CTCACCCTTCTTTTTCATTGTAGC 3'
WT1	5' CTGAGCCGCAGCAAATGG 3'	5' ACGACCCGTAAGCCGAAGC 3'
ITGAL	5' AGGGCACAAGCAAACAGGACC 3'	5' GGTCACGGTGTAACCCAAATAGC 3'
PLD1	5' TGTGTCATCCACCGTCTATTTG 3'	5' TCTGTGCTCATTGTCTGCC 3'
MME	5' TTAGTGCC CAGCAGTCCAAC 3'	5' CCAGTCAACGAGGTCTCCATC 3'
TWIST1	5' GGGAGTCCGCAGTCTTACGAG 3'	5' GAAGTCGATGTACCTGGCCG 3'
FOXA2	5' GTGTACTCCCGGCCATTATC 3'	5' GGATTTCTTCTCCCTTGCGTC 3'

Table S2 Raw data information of RNA-Seq

	C1	C2	C3	E1	E3	E2
Total Reads Count(#)	44318584	49106760	41266302	44203538	48235830	43551896
Total Bases Count(bp)	6.65E+09	7.37E+09	6.19E+09	6.63E+09	7.24E+09	6.53E+09
Average Read Length(bp)	150	150	150	150	150	150
Q10 Bases Count(bp)	6.65E+09	7.37E+09	6.19E+09	6.63E+09	7.24E+09	6.53E+09
Q10 Bases Ratio(%)	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Q20 Bases Count(bp)	6.55E+09	7.26E+09	6.11E+09	6.54E+09	7.12E+09	6.43E+09
Q20 Bases Ratio(%)	98.58%	98.52%	98.68%	98.63%	98.42%	98.37%
Q30 Bases Count(bp)	6.39E+09	7.07E+09	5.97E+09	6.38E+09	6.93E+09	6.25E+09
Q30 Bases Ratio(%)	96.11%	96.01%	96.40%	96.22%	95.74%	95.60%
N Bases Count(bp)	27649	30675	26475	27301	29721	26974
N Bases Ratio(%)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
GC Bases Count(bp)	3.5E+09	3.87E+09	3.27E+09	3.54E+09	3.86E+09	3.47E+09
GC Bases Ratio(%)	52.64%	52.57%	52.78%	53.33%	53.30%	53.07%

Notes: C1, C2 and C3 are duplicates of control group. E1, E2 and E3 are duplicates of sesamol-treated group.

Table S3 Clean data information

	C1	C2	C3	E1	E3	E2
Total Reads Count(#)	43573574	48296534	40662830	43492878	47343768	42807550
Total Bases Count(bp)	6.16E+09	6.81E+09	5.76E+09	6.19E+09	6.7E+09	6.15E+09
Average Read Length(bp)	141.36	141.07	141.69	142.25	141.61	143.58
Q10 Bases Count(bp)	6.16E+09	6.81E+09	5.76E+09	6.19E+09	6.7E+09	6.15E+09
Q10 Bases Ratio(%)	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Q20 Bases Count(bp)	6.12E+09	6.77E+09	5.73E+09	6.15E+09	6.66E+09	6.1E+09
Q20 Bases Ratio(%)	99.35%	99.34%	99.40%	99.35%	99.27%	99.22%
Q30 Bases Count(bp)	5.99E+09	6.63E+09	5.62E+09	6.02E+09	6.51E+09	5.95E+09
Q30 Bases Ratio(%)	97.32%	97.31%	97.54%	97.35%	97.05%	96.89%
N Bases Count(bp)	13631	15348	13731	13682	14989	13668
N Bases Ratio(%)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
GC Bases Count(bp)	3.24E+09	3.57E+09	3.04E+09	3.3E+09	3.57E+09	3.26E+09
GC Bases Ratio(%)	52.58%	52.43%	52.75%	53.32%	53.27%	52.98%

Notes: C1, C2 and C3 are duplicates of control group. E1, E2 and E3 are duplicates of sesamol-treated group.

Table S4 Ratio of clean reads count

	C1	C2	C3	E1	E3	E2
Total Reads Count	44318584	49106760	41266302	44203538	48235830	43551896
Clean Reads Count	43573574	48296534	40662830	43492878	47343768	42807550
Ratio(%)	98.32	98.35	98.54	98.39	98.15	98.29

Notes: C1, C2 and C3 are duplicates of control group. E1, E2 and E3 are duplicates of sesamol-treated group.

Table S5 Differentially Expressed Genes

Gene id	MeanTPM (E)	MeanTPM (C)	log2FoldChange	pValue	GeneName
ENSG00000281849	0.0001	0.973953	-13.2496	0.002015	AL732314.6
ENSG00000227726	0.0001	0.955211	-13.2216	0.024503	AP001271.1
ENSG00000214100	0.0001	0.919644	-13.1669	0.004371	PLAC9P1
ENSG00000239483	0.0001	0.793755	-12.9545	0.04121	AC023598.1
ENSG00000266921	0.0001	0.694569	-12.7619	2.13E-06	AC006213.1
ENSG00000274949	0.0001	0.602122	-12.5558	0.0046	AL109804.1
ENSG00000257663	0.0001	0.594588	-12.5377	0.016512	AC025259.1
ENSG00000277299	0.0001	0.57802	-12.4969	0.00291	AC084876.1
ENSG00000237457	0.0001	0.557478	-12.4447	0.005928	LINC01351
ENSG00000235939	0.0001	0.546749	-12.4167	0.018632	AL138760.1
ENSG00000273342	0.0001	0.545862	-12.4143	0.02422	AP000553.2
ENSG00000270008	0.0001	0.53946	-12.3973	0.001097	AL137247.1
ENSG00000250697	0.0001	0.474982	-12.2137	0.048106	AC010343.3
ENSG00000247675	0.0001	0.470778	-12.2008	0.001875	LRP4-AS1
ENSG00000267343	0.0001	0.442779	-12.1124	7.80E-05	ZNF833P
ENSG00000225792	0.0001	0.41964	-12.0349	0.049525	AC004540.2
ENSG00000230769	0.0001	0.384826	-11.91	0.040532	Z98048.1
ENSG00000231050	0.0001	0.368143	-11.846	0.023814	AL109917.1
ENSG00000279121	0.0001	0.365093	-11.834	0.03155	AC073592.5
ENSG00000272917	0.0001	0.33931	-11.7284	0.025295	AC010186.4
ENSG00000235795	0.0001	0.328112	-11.68	0.024503	AC093157.2
ENSG00000281371	0.0001	0.301777	-11.5593	0.024158	INE2
ENSG00000237604	0.0001	0.288846	-11.4961	0.024918	AP001056.1
ENSG00000231969	0.0001	0.28139	-11.4584	0.008329	AC007364.1
ENSG00000237380	0.0001	0.272681	-11.413	0.011114	HOXD-AS2
ENSG00000224292	0.0001	0.272595	-11.4125	0.046815	AF196972.1
ENSG00000257883	0.0001	0.271944	-11.4091	0.018879	AC125603.2
ENSG00000162614	0.0001	0.232598	-11.1836	0.029138	NEXN
ENSG00000225420	0.0001	0.227708	-11.153	0.014923	AC104134.1
ENSG00000268864	0.0001	0.226648	-11.1462	0.008448	AC011487.2
ENSG00000130427	0.0001	0.225199	-11.137	0.039499	EPO
ENSG00000122691	0.0001	0.20525	-11.0032	0.022889	TWIST1
ENSG00000231713	0.0001	0.201585	-10.9772	0.029647	AF064860.2
ENSG00000256070	0.0001	0.164074	-10.6801	0.045186	AC016956.1
ENSG00000121318	0.0001	0.159255	-10.6371	0.044584	TAS2R10
ENSG00000237166	0.0001	0.144909	-10.5009	0.034507	LINC01792
ENSG00000121361	0.0001	0.137711	-10.4274	0.004661	KCNJ8
ENSG00000112238	0.0001	0.126646	-10.3066	0.012737	PRDM13
ENSG00000180481	0.0001	0.121894	-10.2514	0.03802	GLIPR1L2

ENSG00000280083	0.0001	0.108965	-10.0896	0.030194	AC079777.1
ENSG00000123685	0.0001	0.105163	-10.0384	0.034927	BATF3
ENSG00000262304	0.0001	0.09898	-9.95099	0.03705	AC027796.3
ENSG00000274993	0.0001	0.090478	-9.82142	0.040456	AC254629.1
ENSG00000116711	0.0001	0.085504	-9.73984	0.049525	PLA2G4A
ENSG00000260093	0.0001	0.076873	-9.58633	0.012635	AC034111.1
ENSG00000265142	0.0001	0.058864	-9.20123	0.01409	MIR133A1HG
ENSG00000259417	0.0001	0.039147	-8.61276	0.011691	LINC01314
ENSG00000165091	0.002284	0.370736	-7.34247	0.007859	TMC1
ENSG00000283936	0.101762	12.46835	-6.93693	0.018327	MIR3658
ENSG00000085563	0.005662	0.315987	-5.80241	0.02054	ABCB1
ENSG00000249593	0.017733	0.833225	-5.55422	0.024361	AC011405.1
ENSG00000284512	0.023765	1.075226	-5.49968	1.20E-09	AC092718.8
ENSG00000189269	0.009779	0.317588	-5.02137	0.016653	DRICH1
ENSG00000273489	0.024762	0.602512	-4.60481	0.000747	AC008264.2
ENSG00000280537	0.004416	0.097679	-4.46713	0.033484	AC068946.1
ENSG00000281808	0.329889	6.384558	-4.27453	0.003281	SNORA17
ENSG00000169860	0.005038	0.096447	-4.25872	0.004619	P2RY1
ENSG00000270427	0.04302	0.797285	-4.21203	0.003128	NRBF2P5
ENSG00000258555	0.071139	1.196904	-4.07252	0.029982	SPECC1L- ADORA2A
ENSG00000229256	0.014177	0.226971	-4.00092	0.027937	ST13P13
ENSG00000177483	0.006736	0.10587	-3.97426	0.016083	RBM44
ENSG00000111291	0.034771	0.527729	-3.92385	0.020928	GPRC5D
ENSG00000284346	0.233184	3.402075	-3.86687	0.048698	MIR940
ENSG00000270061	0.047445	0.686072	-3.85404	0.026965	AC068790.5
ENSG00000280571	0.100818	1.292078	-3.67987	0.002329	AC099329.3
ENSG00000148798	0.011133	0.142038	-3.67332	0.015896	INA
ENSG00000269891	0.038777	0.473251	-3.60935	0.001059	ARHGAP19- SLIT1
ENSG00000267729	0.215958	2.572531	-3.57437	0.013622	AC010761.6
ENSG00000226057	0.020711	0.24049	-3.53753	0.043479	PHF2P2
ENSG00000272361	0.056405	0.647048	-3.51999	0.022713	AC005014.2
ENSG00000135842	0.020083	0.230311	-3.51956	0.023817	FAM129A
ENSG00000189108	0.011357	0.128937	-3.50505	0.038935	IL1RAPL2
ENSG00000257830	0.08256	0.889143	-3.42891	0.014405	AC021066.1
ENSG00000258967	0.325556	3.502115	-3.42725	0.018384	AL117694.1
ENSG00000213411	0.019533	0.202281	-3.37235	0.047963	RBM22P2
ENSG00000234329	0.045802	0.451531	-3.30134	0.037636	AL604028.2
ENSG00000277194	0.555642	4.916738	-3.14547	0.03882	SNORD22
ENSG00000140955	0.027362	0.215262	-2.97587	0.037581	ADAD2
ENSG00000211810	0.155318	1.171216	-2.91471	0.025564	TRAV29DV5
ENSG00000168356	0.012765	0.094058	-2.88139	0.012726	SCN11A

ENSG00000178233	0.101229	0.72485	-2.84005	0.02753	TMEM151B
ENSG00000214077	0.099819	0.601655	-2.59155	0.016968	GNAQP1
ENSG00000270147	0.309504	1.86063	-2.58776	0.004084	AC068620.3
ENSG00000142910	0.110469	0.643403	-2.54208	0.005466	TINAGL1
ENSG00000247774	0.043834	0.2541	-2.53526	0.046963	PCED1B-AS1
ENSG00000267904	0.168181	0.966333	-2.52251	0.032684	AC024075.1
ENSG00000240758	0.27812	1.59685	-2.52145	0.036282	AC010655.2
ENSG00000263244	0.251715	1.443516	-2.51972	0.013475	AC087190.4
ENSG00000253305	0.07428	0.413504	-2.47685	0.004384	PCDHGB6
ENSG00000271741	0.248022	1.366382	-2.46182	0.000305	AC114490.2
ENSG00000242735	0.305622	1.657274	-2.43899	0.001636	RPSAP26
ENSG00000111846	0.123022	0.615112	-2.32193	0.038529	GCNT2
ENSG00000145681	0.064962	0.324025	-2.31844	0.031294	HAPLN1
ENSG00000268083	0.405107	1.858373	-2.19767	0.021036	AC008982.1
ENSG00000124091	0.102948	0.466365	-2.17954	0.009832	GCNT7
ENSG00000102445	0.033498	0.151519	-2.17737	0.045642	RUBCNL
ENSG00000106633	0.105241	0.469052	-2.15606	0.026526	GCK
ENSG00000081479	0.19949	0.846964	-2.08598	3.63E-05	LRP2
ENSG00000137878	1.298758	5.144471	-1.98589	0.003925	GCOM1
ENSG00000171817	0.117346	0.464465	-1.9848	0.015858	ZNF540
ENSG00000249346	0.093328	0.369019	-1.98331	0.046375	LINC01016
ENSG00000262420	0.08729	0.344138	-1.97909	0.022926	AC007613.1
ENSG00000085276	0.051433	0.202162	-1.97475	0.031137	MECOM
ENSG00000241635	0.321646	1.19831	-1.89746	0.012502	UGT1A1
ENSG00000269855	0.230536	0.822824	-1.83559	0.048697	RNF225
ENSG00000100181	0.042291	0.146019	-1.78773	0.006125	TPTEP1
ENSG00000229539	0.871335	2.980974	-1.77448	0.008811	AL353194.1
ENSG00000266086	1.458801	4.951948	-1.76321	0.034667	AC015813.2
ENSG00000261011	1.362668	4.55104	-1.73976	0.001759	AL136982.4
ENSG00000184384	0.042834	0.136559	-1.67268	0.030485	MAML2
ENSG00000197153	2.899807	9.164897	-1.66016	0.004689	HIST1H3J
ENSG00000283342	0.177586	0.549771	-1.63031	0.033291	AC241584.2
ENSG00000100362	2.127826	6.57301	-1.62717	3.15E-05	PVALB
ENSG00000214548	0.120793	0.367255	-1.60425	0.003859	MEG3
ENSG00000117477	0.155259	0.467658	-1.59078	0.041806	CCDC181
ENSG00000214736	14.42301	42.55063	-1.56081	4.17E-06	TOMM6
ENSG00000249007	0.365424	1.045399	-1.51641	0.048116	AL691482.3
ENSG00000273271	0.62217	1.778589	-1.51535	0.044498	AP000254.1
ENSG00000178462	0.270832	0.764373	-1.49688	0.036249	TUBAL3
ENSG00000134874	0.051418	0.14511	-1.49681	0.048069	DZIP1
ENSG00000186526	0.750593	2.096332	-1.48176	0.017628	CYP4F8
ENSG00000169851	0.082187	0.226738	-1.46405	0.017059	PCDH7
ENSG00000236514	0.526789	1.426253	-1.43693	0.032147	AL135791.1

ENSG00000225431	0.196978	0.521049	-1.40339	0.044858	LINC01671
ENSG00000187474	0.247709	0.640335	-1.37018	0.01408	FPR3
ENSG00000235584	0.743603	1.915803	-1.36534	0.028019	AC008268.1
ENSG00000259066	4.413683	10.97103	-1.31364	0.046528	AL110118.2
ENSG00000196549	0.285303	0.703555	-1.30217	0.00172	MME
ENSG00000184261	1.02423	2.495931	-1.28504	0.005059	KCNK12
ENSG00000166828	0.149823	0.363233	-1.27764	0.049456	SCNN1G
ENSG00000167916	1.010356	2.44447	-1.27466	0.000371	KRT24
ENSG00000168405	2.31494	5.59971	-1.27438	0.005105	CMAHP
ENSG00000261575	1.140154	2.732572	-1.26103	0.034386	AC005829.1
ENSG00000235205	0.185482	0.432504	-1.22144	0.040496	TATDN2P3
ENSG00000169139	25.63168	59.39535	-1.21242	3.11E-05	UBE2V2
ENSG00000227191	2.109228	4.880978	-1.21046	0.000396	TRGC2
ENSG00000261804	2.090384	4.817158	-1.20441	0.003003	AC007342.4
ENSG00000211695	1.359792	3.122868	-1.19949	4.58E-05	TRGV9
ENSG00000250305	0.583121	1.324154	-1.1832	0.001216	KIAA1456
ENSG00000006747	0.797998	1.79622	-1.17051	0.005828	SCIN
ENSG00000132669	0.94675	2.11853	-1.16201	0.029742	RIN2
ENSG00000260772	1.661045	3.669509	-1.1435	0.038067	AC012321.1
ENSG00000251503	2.83707	6.234356	-1.13584	0.00344	APITD1-CORT
ENSG00000213204	1.40979	3.074904	-1.12506	0.001117	AL049697.1
ENSG00000138381	20.55412	44.48359	-1.11385	1.72E-13	ASNSD1
ENSG00000166509	23.02625	49.61116	-1.10738	0.048052	CLEC3A
ENSG00000149571	0.211116	0.454347	-1.10576	0.02828	KIRREL3
ENSG00000138829	0.169956	0.361154	-1.08746	0.011082	FBN2
ENSG00000211689	18.88024	39.9115	-1.07993	4.55E-13	TRGC1
ENSG00000254485	4.457181	9.393479	-1.07553	0.002036	AC026191.1
ENSG00000166147	0.072882	0.152907	-1.06901	0.015893	FBN1
ENSG00000172243	0.732724	1.535481	-1.06735	0.026545	CLEC7A
ENSG00000212127	0.468351	0.9599	-1.03529	0.043621	TAS2R14
ENSG00000224511	1.093149	2.236194	-1.03256	0.049481	LINC00365
ENSG00000266820	1.805459	3.671829	-1.02413	0.019764	KPNA2P3
ENSG00000140993	1.076135	2.186264	-1.02261	0.000177	TIGD7
ENSG00000153237	0.403071	0.818308	-1.02161	0.039226	CCDC148
ENSG00000152931	0.287218	0.579894	-1.01364	0.042723	PART1
ENSG00000257950	0.787539	1.585184	-1.00923	0.00825	P2RX5- TAX1BP3
ENSG00000134595	11.43906	5.717363	1.000547	5.07E-07	SOX3
ENSG00000162892	16.76353	8.254162	1.022132	0.002746	IL24
ENSG00000197467	5.162944	2.538012	1.024495	0.000135	COL13A1
ENSG00000183019	0.598347	0.293972	1.025304	0.015028	MCEMP1
ENSG00000116883	7.309524	3.585729	1.027511	7.65E-05	AL591845.1
ENSG00000136425	1.706007	0.836541	1.028116	0.03588	CIB2

ENSG00000232645	4.806422	2.356721	1.028182	0.038323	LINC01431
ENSG00000104059	0.815481	0.399503	1.029444	0.018196	FAM189A1
ENSG00000173727	26.82573	13.13498	1.030204	1.17E-14	AP000769.1
ENSG00000162006	2.047361	1.002409	1.030294	0.01789	MSLNL
ENSG00000170819	4.735939	2.30688	1.037708	0.029142	BFSP2
ENSG00000133805	3.492417	1.700491	1.038275	0.014651	AMPD3
ENSG00000271880	5.859775	2.846962	1.041422	0.00225	AGAP11
ENSG00000146205	1.406191	0.671933	1.065404	0.040585	ANO7
ENSG00000152086	6.509411	3.100601	1.069979	6.07E-05	TUBA3E
ENSG00000120738	23.88853	11.31579	1.07798	9.22E-10	EGR1
ENSG00000203618	3.610718	1.684026	1.100371	0.002508	GP1BB
ENSG00000259803	19.18469	8.942748	1.101165	4.56E-10	SLC22A31
ENSG00000211460	69.00017	31.90525	1.112806	0.036504	TSN
ENSG00000140511	0.832996	0.384717	1.114514	0.025284	HAPLN3
ENSG00000105668	1.89469	0.874178	1.115964	0.0155	UPK1A
ENSG00000127507	0.407149	0.187589	1.117985	0.029354	ADGRE2
ENSG00000139354	11.59449	5.322046	1.123387	2.86E-06	GAS2L3
ENSG00000167207	0.494322	0.225914	1.129676	0.040328	NOD2
ENSG00000131409	2.522857	1.14661	1.137684	0.000138	LRRC4B
ENSG00000175832	2.394281	1.078637	1.150383	0.018979	ETV4
ENSG00000254369	1.853758	0.832462	1.154996	0.025136	HOXA-AS3
ENSG00000111801	3.035287	1.338901	1.180783	0.022775	BTN3A3
ENSG00000237575	1.866713	0.821162	1.184762	0.043014	PYY2
ENSG00000139160	0.875686	0.382715	1.194144	0.006209	ETFBKMT
ENSG00000163879	0.65675	0.283277	1.213132	0.048391	DNALI1
ENSG00000226853	4.710361	2.01607	1.224292	0.035335	AC010894.2
ENSG00000254929	3.131059	1.339559	1.224893	0.002803	AL591684.2
ENSG00000266933	2.683442	1.144294	1.229627	0.032735	AC005775.1
ENSG00000143556	211.3899	89.27457	1.243586	0.00659	S100A7
ENSG00000005844	0.307512	0.129157	1.251513	0.033303	ITGAL
ENSG00000254706	14.00001	5.856771	1.25725	0.000623	AL512785.2
ENSG00000227252	1.256824	0.520793	1.271	0.006806	AC105760.2
ENSG00000273521	1.357992	0.560672	1.276246	0.02939	AL162274.1
ENSG00000223872	4.223382	1.734748	1.283673	0.008558	AC006372.1
ENSG00000167244	1.157644	0.4747	1.286105	0.020814	IGF2
ENSG00000203697	9.569158	3.897726	1.295759	0.002655	CAPN8
ENSG00000185252	12.21854	4.969103	1.298015	1.33E-13	ZNF74
ENSG00000259112	13.75796	5.585894	1.300406	0.038448	NDUFC2-KCTD14
ENSG00000224805	2.399407	0.971826	1.303908	0.030696	LINC00853
ENSG00000075651	3.047627	1.234035	1.304303	0.010904	PLD1
ENSG00000269439	3.488456	1.400508	1.316639	0.018054	AC010618.3
ENSG00000232748	2.703433	1.071081	1.335724	0.000667	AC135050.1

ENSG00000278985	0.759448	0.300033	1.339832	0.02451	AC092718.7
ENSG00000163218	3.513372	1.362031	1.367097	0.001974	PGLYRP4
ENSG00000115155	0.568798	0.215959	1.397157	0.040477	OTOF
ENSG00000234210	0.683791	0.256937	1.41214	0.008756	AC006372.3
ENSG00000166833	3.573207	1.339255	1.415789	0.03759	NAV2
ENSG00000249679	8.784577	3.223575	1.446311	0.000227	AC106897.1
ENSG00000272772	11.28641	4.133142	1.449276	0.003602	AC104109.3
ENSG00000181458	1.399611	0.508136	1.461741	0.016162	TMEM45A
ENSG00000137699	2.203581	0.798866	1.463825	0.006441	TRIM29
ENSG00000173809	0.492011	0.177737	1.468943	0.01392	TDRD12
ENSG00000133101	1.65809	0.5928	1.483906	0.005571	CCNA1
ENSG00000267272	0.225429	0.076943	1.55082	0.047487	LINC01140
ENSG00000284052	0.517357	0.171992	1.588818	0.0278	AC006460.2
ENSG00000144649	0.482953	0.159622	1.597222	0.047083	FAM198A
ENSG00000149527	1.790998	0.590093	1.601749	0.000178	PLCH2
ENSG00000185955	0.999086	0.324783	1.621134	0.031349	C7orf61
ENSG00000270761	2.573181	0.823268	1.644119	0.048353	AL355353.1
ENSG00000171564	7.34623	2.340672	1.650081	0.035906	FGB
ENSG00000196611	2.182222	0.694769	1.651192	0.00224	MMP1
ENSG00000250264	0.929527	0.294709	1.657205	0.018271	AL669918.1
ENSG00000240021	0.4245	0.133882	1.664806	0.049439	TEX35
ENSG00000102854	1.409461	0.443133	1.669331	0.003033	MSLN
ENSG00000155918	1.034403	0.323179	1.678392	0.035735	RAET1L
ENSG00000204049	0.766688	0.237855	1.688555	0.016538	AL391421.1
ENSG00000125798	0.83708	0.25825	1.6966	0.001164	FOXA2
ENSG00000239704	1.812449	0.55353	1.711208	0.000572	CDRT4
ENSG00000166670	0.418328	0.12618	1.729156	0.048053	MMP10
ENSG00000205274	2.402765	0.721077	1.736471	0.020168	TRBV20OR9-2
ENSG00000101126	63.25833	18.70225	1.758044	1.74E-81	ADNP
ENSG00000271327	0.864197	0.254609	1.763074	0.011403	AC010201.2
ENSG00000103426	2.392486	0.699593	1.773923	6.29E-05	CORO7- PAM16
ENSG00000214872	0.696007	0.202219	1.78318	0.015751	SMTNL1
ENSG00000088882	0.609684	0.173057	1.816818	0.021388	CPXM1
ENSG00000272508	1.297245	0.361339	1.844026	0.047322	AL136982.6
ENSG00000063322	36.9914	10.19997	1.858625	5.37E-49	MED29
ENSG00000272884	0.841427	0.231022	1.864808	5.33E-05	AC113189.4
ENSG00000169621	0.267922	0.070999	1.915942	0.041361	APLF
ENSG00000105141	0.434707	0.112377	1.951698	0.042614	CASP14
ENSG00000204261	2.391998	0.617531	1.953634	0.000262	PSMB8-AS1
ENSG00000242288	0.528402	0.130725	2.015102	0.034118	AC022400.3
ENSG00000279583	1.168368	0.287712	2.021799	0.044508	AC009086.3
ENSG00000134775	0.735777	0.174544	2.075676	0.042478	FHOD3

ENSG00000256116	1.477969	0.335366	2.139806	0.01767	AP001453.1
ENSG00000107159	9.504808	2.011594	2.240318	1.97E-09	CA9
ENSG00000187800	0.639516	0.133803	2.256866	0.00848	PEAR1
ENSG00000124882	0.191077	0.035541	2.426587	0.025652	EREG
ENSG00000267212	1.223744	0.227506	2.427323	0.032293	AC018761.3
ENSG00000156222	0.38787	0.071023	2.449207	0.049328	SLC28A1
ENSG00000267426	3.67862	0.666646	2.464172	0.040685	AC087289.3
ENSG00000236117	0.709239	0.127486	2.475936	0.028296	LINC01639
ENSG00000260252	1.289099	0.224786	2.519741	0.046183	AC009087.1
ENSG00000130377	0.279687	0.048433	2.529741	0.010776	ACSBG2
ENSG00000275379	2.23154	0.381835	2.547019	0.009869	HIST1H3I
ENSG00000261641	0.665494	0.108772	2.613118	0.014362	AL031600.3
ENSG00000215859	3.867629	0.626917	2.625104	0.016734	AC239803.1
ENSG00000138079	0.345614	0.054448	2.666209	0.029955	SLC3A1
ENSG00000242150	2.105151	0.327476	2.684461	0.029679	RPS10P7
ENSG00000188596	0.505617	0.073873	2.774919	0.037133	CFAP54
ENSG00000272744	0.88678	0.125572	2.820065	0.023221	AC107214.2
ENSG00000118557	0.460968	0.059034	2.965041	0.014066	PMFBP1
ENSG00000278463	1.021252	0.120776	3.079929	0.026794	HIST1H2AB
ENSG00000267422	0.748644	0.072184	3.374529	0.028408	AC016582.2
ENSG00000169245	0.764126	0.07314	3.385078	0.007275	CXCL10
ENSG00000165188	0.240987	0.022835	3.399614	0.032399	RNF183
ENSG00000185105	0.168477	0.015722	3.421698	0.033427	MYADML2
ENSG00000279805	0.121759	0.010114	3.589551	0.047518	Z95114.3
ENSG00000101336	0.378686	0.029645	3.675126	0.013375	HCK
ENSG00000179564	0.500686	0.038956	3.684001	0.004973	LSMEM2
ENSG00000205822	0.320005	0.02456	3.70373	0.031947	TPTE2P6
ENSG00000183822	0.438851	0.033163	3.726084	0.02857	NCF4-AS1
ENSG00000282951	0.478565	0.03523	3.763825	0.020163	AC008537.4
ENSG00000259921	0.115985	0.008439	3.780722	0.016201	AC022819.1
ENSG00000102359	0.129061	0.009106	3.825088	0.047643	SRPX2
ENSG00000215869	0.568919	0.039197	3.859409	0.020251	AC092506.1
ENSG00000261790	0.754789	0.050215	3.909892	0.014421	AC005606.2
ENSG00000258667	2.05917	0.133836	3.943529	0.000418	HIF1A-AS2
ENSG00000215246	0.104198	0.006444	4.015227	0.04585	AC116351.1
ENSG00000243016	0.441391	0.027111	4.025107	0.022216	AC112482.1
ENSG00000206760	5.407084	0.282225	4.259933	0.018328	SNORA6
ENSG00000186377	0.165074	0.007958	4.374621	0.009168	CYP4X1
ENSG00000235748	0.500987	0.012963	5.272265	0.044727	SEPT14P12
ENSG00000206941	1.562014	0.03309	5.560883	0.048116	SNORD15A
ENSG00000104043	0.672293	0.011355	5.887734	0.013623	ATP8B4
ENSG00000119283	0.029623	0.0001	8.21059	0.047226	TRIM67
ENSG00000118407	0.031826	0.0001	8.314062	0.026089	FILIP1

ENSG00000267827	1.008681	0.002952	8.416724	0.042901	AC011468.2
ENSG00000179930	0.059122	0.0001	9.207559	0.031965	ZNF648
ENSG00000163520	0.066935	0.0001	9.386624	0.012389	FBLN2
ENSG00000138615	0.072168	0.0001	9.495222	0.001718	CILP
ENSG00000259422	0.087227	0.0001	9.768631	0.041927	AC091100.1
ENSG00000181577	0.090926	0.0001	9.828549	0.015408	C6orf223
ENSG00000234880	0.091383	0.0001	9.835777	0.037153	LINC00163
ENSG00000233760	0.104281	0.0001	10.02626	0.041167	AC004947.1
ENSG00000145431	0.106427	0.0001	10.05564	0.01148	PDGFC
ENSG00000198865	0.107682	0.0001	10.07257	0.024614	CCDC152
ENSG00000266527	0.122882	0.0001	10.26306	0.039435	AC005697.2
ENSG00000259219	0.135161	0.0001	10.40046	0.006214	AC084855.2
ENSG00000215910	0.135276	0.0001	10.40169	0.017374	C1orf167
ENSG00000164185	0.13642	0.0001	10.41384	0.018441	ZNF474
ENSG00000184937	0.138068	0.0001	10.43117	0.018036	WT1
ENSG00000204941	0.148994	0.0001	10.54104	0.035584	PSG5
ENSG00000178248	0.152671	0.0001	10.57621	0.017431	LINC01658
ENSG00000169035	0.153129	0.0001	10.58053	0.011165	KLK7
ENSG00000162551	0.160158	0.0001	10.64528	0.004765	ALPL
ENSG00000280208	0.172226	0.0001	10.75009	0.007599	GGT4P
ENSG00000204581	0.175906	0.0001	10.78059	0.027213	ACOXL-AS1
ENSG00000261949	0.194137	0.0001	10.92286	0.020703	GFY
ENSG00000280486	0.194406	0.0001	10.92485	0.010495	AC005329.3
ENSG00000160886	0.203607	0.0001	10.99157	0.02865	LY6K
ENSG00000144550	0.204349	0.0001	10.99682	0.001954	CPNE9
ENSG00000284057	0.212111	0.0001	11.0506	0.000387	AP001273.2
ENSG00000204869	0.218823	0.0001	11.09555	0.001661	IGFL4
ENSG00000215644	0.219281	0.0001	11.09856	0.040082	GCGR
ENSG00000099958	0.240731	0.0001	11.23321	0.015356	DERL3
ENSG00000250764	0.242262	0.0001	11.24235	0.038724	AC025178.1
ENSG00000258724	0.249913	0.0001	11.28721	0.046226	AC105001.2
ENSG00000180269	0.262878	0.0001	11.36018	0.015301	GPR139
ENSG00000265096	0.276321	0.0001	11.43213	0.032321	C1QTNF1-AS1
ENSG00000235701	0.283984	0.0001	11.4716	0.045835	PCBP2P1
ENSG00000259191	0.302706	0.0001	11.5637	0.04924	AC027237.1
ENSG00000235042	0.305924	0.0001	11.57896	0.033612	AC098820.2
ENSG00000205015	0.319604	0.0001	11.64207	0.015487	LINC02138
ENSG00000259211	0.32962	0.0001	11.68659	0.01761	AC013356.2
ENSG00000228809	0.365056	0.0001	11.8339	0.049081	AL034428.1
ENSG00000259540	0.367554	0.0001	11.84374	0.021993	AC027020.1
ENSG00000264666	0.409378	0.0001	11.99922	0.036625	AC020558.1
ENSG00000255046	0.411377	0.0001	12.00625	0.010492	AC069185.1
ENSG00000203886	0.411718	0.0001	12.00744	0.040048	CYP17A1-AS1

ENSG00000223485	0.421128	0.0001	12.04004	0.047551	LINC01615
ENSG00000284116	0.421163	0.0001	12.04016	0.010363	AL772307.1
ENSG00000270069	0.431554	0.0001	12.07532	0.000151	MIR222HG
ENSG00000230444	0.44217	0.0001	12.11038	0.006324	TFAMP1
ENSG00000147166	0.458524	0.0001	12.16278	0.001534	ITGB1BP2
ENSG00000254528	0.465386	0.0001	12.18421	0.013414	AP000757.1
ENSG00000205864	0.487392	0.0001	12.25087	0.048023	KRTAP5-6
ENSG00000234006	0.499204	0.0001	12.28541	0.017354	DDX39B-AS1
ENSG00000226312	0.570444	0.0001	12.47787	0.004129	CFLAR-AS1
ENSG00000226969	0.595251	0.0001	12.53928	0.013452	AL391845.1
ENSG00000222460	0.617972	0.0001	12.59333	0.04924	RN7SKP271
ENSG00000258677	0.618912	0.0001	12.59552	0.039051	AC022826.2
ENSG00000243257	0.989048	0.0001	13.27182	0.032477	MTCO2P29
ENSG00000238390	1.037432	0.0001	13.34073	0.040994	SNORA81
ENSG00000254692	1.724386	0.0001	14.0738	0.023213	AL136295.1
ENSG00000256349	2.26154	0.0001	14.46502	0.013608	AP002748.4

Table S6 Reactome pathways analysis

GO ID	GO Term	Ontology Source	Term PValue	Group PValue	Associated Genes (%)	Nr. Genes	Associated Genes Found
R-HSA:6811436	COPI-independent Golgi-to-ER retrograde traffic	REACTOME_Pathways _27.02.2019	0.01	0.01	5.88	3.00	[PLA2G4A, TUBA3E, TUBAL3]
R-HSA:163125	Post-translational modification: synthesis of GPI-anchored proteins	REACTOME_Pathways _27.02.2019	0.01	0.01	4.30	4.00	[ALPL, LY6K, MSLN, RAET1L]
R-HSA:186712	Regulation of beta-cell development	REACTOME_Pathways _27.02.2019	0.01	0.01	7.14	3.00	[FOXA2, GCK, MAML2]
R-HSA:216083	Integrin cell surface interactions	REACTOME_Pathways _27.02.2019	0.01	0.01	4.71	4.00	[COL13A1, FBN1, FGB, ITGAL]
R-HSA:1442490	Collagen degradation	REACTOME_Pathways _27.02.2019	0.02	0.00	4.69	3.00	[COL13A1, MMP1, MMP10]
R-HSA:1474228	Degradation of the extracellular matrix	REACTOME_Pathways _27.02.2019	0.00	0.00	5.00	7.00	[CAPN8, COL13A1, FBN1, FBN2, KLK7, MMP1, MMP10]
R-HSA:1566948	Elastic fibre formation	REACTOME_Pathways _27.02.2019	0.01	0.01	6.67	3.00	[FBLN2, FBN1, FBN2]
R-HSA:2129379	Molecules associated with elastic fibres	REACTOME_Pathways _27.02.2019	0.00	0.01	7.89	3.00	[FBLN2, FBN1, FBN2]
R-HSA:1912408	Pre-NOTCH Transcription and Translation	REACTOME_Pathways _27.02.2019	0.01	0.02	4.30	4.00	[HIST1H2AB, HIST1H3I, HIST1H3J, MAML2]
R-HSA:212300	PRC2 methylates histones and DNA	REACTOME_Pathways _27.02.2019	0.03	0.02	4.11	3.00	[HIST1H2AB, HIST1H3I, HIST1H3J]
R-HSA:2299718	Condensation of Prophase Chromosomes	REACTOME_Pathways _27.02.2019	0.03	0.02	4.05	3.00	[HIST1H2AB, HIST1H3I, HIST1H3J]

R-HSA:3214841	PKMTs methylate histone lysines	REACTOME_Pathways _27.02.2019	0.02	0.02	4.23	3.00	[HIST1H3I, HIST1H3J, MECOM]
R-HSA:427359	SIRT1 negatively regulates rRNA expression	REACTOME_Pathways _27.02.2019	0.02	0.02	4.41	3.00	[HIST1H2AB, HIST1H3I, HIST1H3J]
R-HSA:5334118	DNA methylation	REACTOME_Pathways _27.02.2019	0.02	0.02	4.62	3.00	[HIST1H2AB, HIST1H3I, HIST1H3J]
R-HSA:5625886	Activated PKN1 stimulates transcription of AR (androgen receptor) regulated genes KLK2 and KLK3	REACTOME_Pathways _27.02.2019	0.02	0.02	4.48	3.00	[HIST1H2AB, HIST1H3I, HIST1H3J]
R-HSA:73728	RNA Polymerase I Promoter Opening	REACTOME_Pathways _27.02.2019	0.02	0.02	4.76	3.00	[HIST1H2AB, HIST1H3I, HIST1H3J]