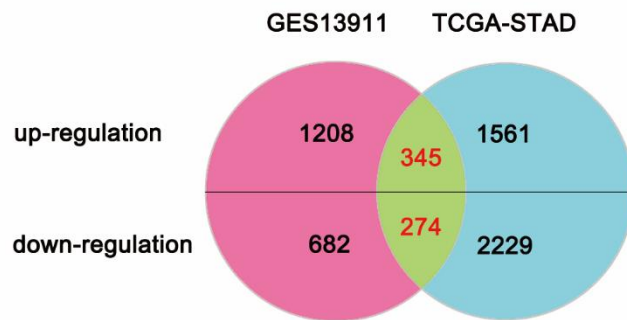


**Decreased expression of Calpain-9 predicts unfavorable prognosis in patients
with gastric cancer**

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Supplementary Data

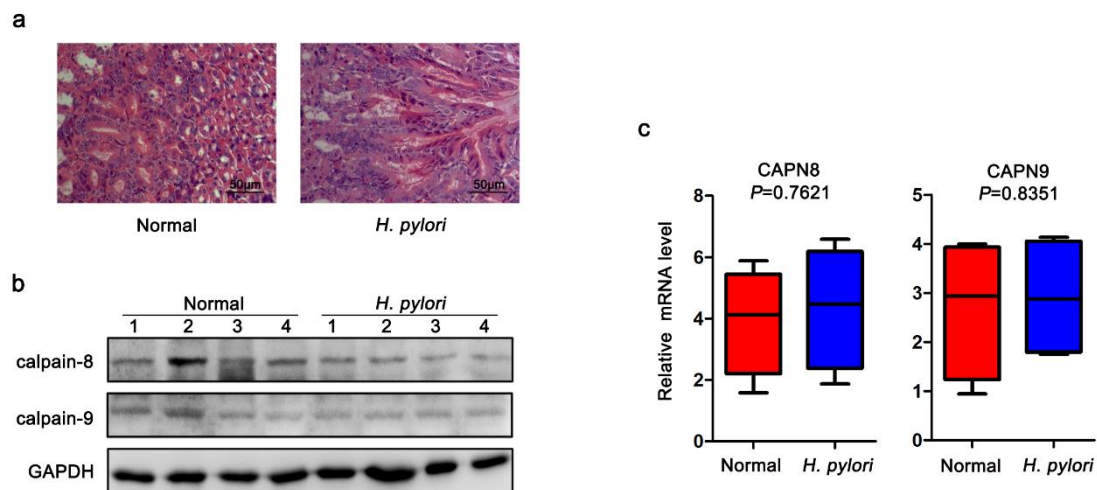
a



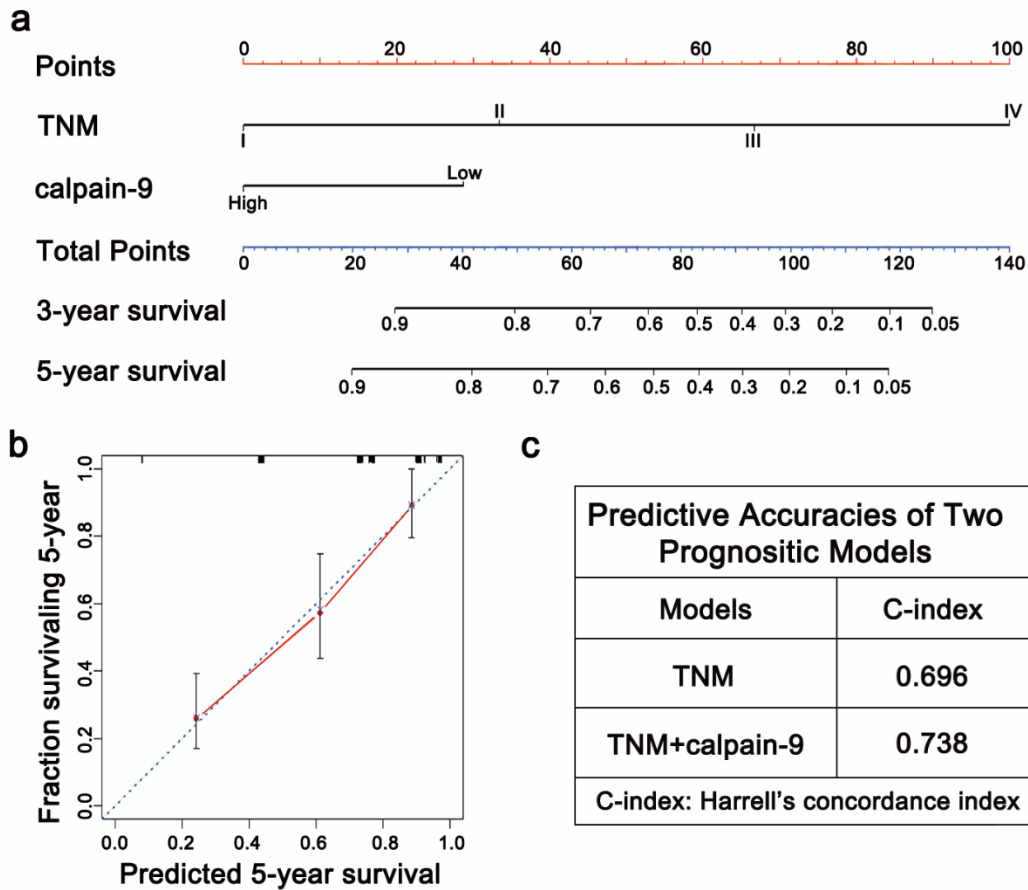
b

GENECARD	GES13911			TCGA-STAD	
	RefSeq	Fold Change	P-value	Fold Change	P-value
CAPN1	NM_001198868	UD		-1.19729	0.017923
CAPN2	NM_001146068	UD		-1.26171	0.006707
CAPN3	NM_000070	UD		1.240093	0.426301
CAPN5	NM_004055	-2.07876	0.000988	-1.15271	0.314865
CAPN6	NM_014289	-2.16138	0.001555	-2.62435	0.00262
CAPN7	NM_014296	UD		-1.08927	0.065896
CAPN8	NM_001143962	-6.97844	4.13E-08	3.038613	0.001241
CAPN9	NM_006615	-11.5379	3.37E-15	-3.14351	0.021873
CAPN10	NM_023083	UD		1.129645	0.172529
CAPN11	NM_007058	UD		1.677204	0.010713
CAPN12	NM_144691	UD		1.727806	0.001975
CAPN13	NM_144575	-3.50761	2.11E-14	-1.93066	0.259849
CAPN14	NM_001145122	UD		-2.44191	0.003297
CAPNS1	NM_001003962	UD		-1.33652	3.55E-05
CAPNS2	NM_032330	UD		-2.14082	0.004023

Supplementary Figure S1. Differentially expressed genes in GES13911 dataset and TCGA-STAD dataset. **(a)** Differentially expressed genes in GES13911 dataset (light red) and TCGA-STAD dataset (light blue) with area of overlap showing numbers of genes. **(b)** Differentially expressed members of calpain family in two datasets. UD, undetected.



Supplementary Figure S2. The expression pattern of calpain-8 and -9 in mouse gastric mucosa with chronic *H. pylori* infection. C57BL/6 mice were inoculated intragastrically with saline control or *H. pylori* SS1 cell suspension. After 3 months, mice from both model group and control group were sacrificed and the stomachs were isolated from the mice for further experiment. **(a)** Representative HE staining in each group. **(b, c)** The protein and the mRNA levels of calpain-8 and calpain-9 in both groups were examined by western blot **(b)** and real-time PCR **(c)**.



Supplementary Figure S3. Nomogram and calibration plot for the prediction of outcome in gastric cancer patients. **(a)** Nomogram for predicting clinical outcomes integrated calpain-9 expression (Low/High) with TNM classification (I/II/III/IV). **(b)** Calibration plot for nomogram predicted 5-year overall survival rate. The nomogram performed well with the ideal model. **(c)** The Harrell's concordance index (C-index) analysis for the generated nomogram or TNM stage alone.

Supplementary Table S1

CO-UPREGULATION															
		GESI3911			TCGA-STAD					GESI3911			TCGA-STAD		
GENECARD	RefSeq	Fold Change	P-value	Fold Change	P-value	GeneCard	RefSeq	Fold Change	P-value	Fold Change	P-value	Fold Change	P-value		
ABHD11	NM_001145363	2.924214	9.42E-08	2.26832	1.43E-09	CASC5	NM_144508	3.230314	6.67E-06	5.401207	1.63E-14				
ADAMTS2	NM_014244	6.736493	1.09E-09	4.219735	5.16E-07	CBFB	NM_001755	2.333418	1.4E-05	2.121174	7.39E-19				
ADAP1	NM_001284308	2.505995	9.42E-07	2.258095	1.8E-10	CCL15	NM_004167	2.735488	0.017161	6.319715	1.54E-05				
AGMAT	NM_024758	2.727213	0.000154	3.874587	3.3E-09	CCL18	NM_002988	2.825814	0.000146	2.822753	0.005543				
ANLN	NM_001284301	4.292346	1.9E-07	4.916372	5.53E-21	CCL20	NM_001130046	2.198882	0.010381	4.402342	0.000641				
APOEC3B	NM_001270411	2.296684	0.000859	3.485333	7.95E-06	CCL3	NM_001001437	5.935226	7.59E-08	5.112738	5.37E-09				
APOC1	NM_001645	4.134493	1.55E-06	13.47198	5.75E-12	CCL4	NM_002984	3.837024	2.92E-07	2.086886	0.001465				
APOE	NM_000041	2.925817	0.000154	3.996079	1.02E-11	CCNA2	NM_001237	3.07355	5.32E-06	3.649698	4.4E-15				
AQP9	NM_020980	2.016172	0.000191	2.728723	0.000995	CCNB1	NM_031966	4.275911	6.71E-07	3.503285	5.09E-16				
ARHGAP8	NM_001017526	2.080339	2.16E-06	5.344696	2.99E-14	CCNB2	NM_004701	3.418729	1.96E-06	5.212058	5.42E-17				
ARSE	NM_000047	2.967454	1.89E-05	3.704678	0.000673	CCNE1	NM_001238	2.884383	5.12E-05	3.524472	5.08E-06				
ASCL2	NM_005170	3.034045	0.000334	5.350419	0.000177	CCNE2	NM_004702	3.115698	3.36E-07	2.765888	1.16E-09				
ASPM	NM_001206846	8.232866	3.25E-08	8.70911	3.61E-20	CDC20	NM_001255	5.031787	1.31E-07	5.392867	1.03E-15				
ASPN	NM_001193335	5.543612	5.23E-08	2.555708	0.002105	CDC25B	NM_001287516	4.237617	4.42E-09	2.541958	2.41E-13				
ATAD2	NM_014109	4.176485	5.17E-10	3.858014	3.65E-20	CDCA2	NM_152562	3.245496	4.71E-07	8.003031	7.71E-17				
ATP11A	NM_015205	3.53325	1.19E-09	3.342512	4.17E-23	CDCA3	NM_031299	2.884838	1.46E-06	2.469232	8.71E-09				
AURKA	NM_003600	2.852832	8.92E-07	4.428368	3.62E-14	CDCA5	NM_080668	3.82866	4.34E-10	4.92196	1.28E-15				
AURKB	NM_001256834	3.364727	5.34E-08	6.366631	4.61E-15	CDCA7	NM_031942	3.070157	8.33E-06	3.972676	9.42E-13				
BAMBI	NM_012342	2.066666	0.010138	3.411141	0.000202	CDCA8	NM_001256875	2.620631	5.14E-07	4.687398	7.58E-17				
BATF2	NM_138456	3.367119	3.47E-07	2.591482	4.37E-05	CDH11	NM_001797	2.472463	8.79E-06	2.483083	8.95E-07				
BCAT1	NM_001178091	2.120737	0.000332	2.209944	0.000595	CDH17	NM_001144663	4.595644	0.020334	5.164161	0.002405				
BCL2A1	NM_001114735	4.799473	5.49E-07	2.52237	3.47E-05	CDK1	NM_001130829	4.627426	6.49E-08	5.909384	2.57E-20				

BGN	NM_001711	6.679762	8.94E-12	5.280199	1.16E-24	CDKN3	NM_001130851	4.643145	6.32E-07	3.289217	1.7E-11
BID	NM_001196	3.173162	4.76E-09	2.257933	1.9E-17	CEACAM6	NM_002483	4.389772	0.011388	3.253635	0.001418
BIRC5	NM_001012270	3.966814	9.81E-07	6.123536	4.76E-14	CENPA	NM_001042426	4.417323	7.48E-07	6.888127	2.57E-17
BOP1	NM_015201	3.414464	1.73E-08	2.103191	8.73E-06	CENPF	NM_016343	4.292358	3.34E-09	7.296919	2.71E-24
BRIP1	NM_032043	2.344197	2.73E-05	4.102425	2.56E-14	CENPK	NM_001267038	2.094702	0.000303	4.364635	1.03E-17
BUB1	NM_001278616	6.664866	1.33E-09	8.333946	9.72E-20	CENPL	NM_001127181	2.167	1.18E-08	2.196732	9.66E-15
BUB1B	NM_001211	5.443674	1.46E-08	7.549649	5.15E-19	CENPN	NM_001100624	3.27177	3.13E-07	2.016219	9.67E-11
BYSL	NM_004053	2.165501	1.56E-07	2.004422	3.49E-10	CENPW	NM_001012507	3.308516	2.4E-07	2.205129	3.14E-08
C2	NM_000063	2.385272	2.86E-05	3.086199	4.49E-10	CEP55	NM_001127182	4.790774	2.2E-08	7.198446	6.16E-21
C2CD4A	NM_207322	3.96148	9.8E-05	7.482272	1.02E-06	CHD7	NM_017780	2.070526	1.25E-08	2.013424	1.22E-11
CAD	NM_004341	2.728328	2.34E-09	2.208786	3.91E-18	CHEK1	NM_001114121	2.641073	2.16E-07	2.483052	3.97E-12
CHI3L1	NM_001276	13.06002	1.54E-10	6.449728	1.62E-06	DKC1	NM_001142463	2.381638	2.73E-08	2.319775	4.81E-21
CKAP2	NM_001098525	4.594348	3.08E-09	2.858082	1.05E-15	DLEU2	NR_002612	2.975944	1.07E-09	2.709766	1.27E-10
CKS1B	NM_001826	3.157957	1.8E-10	2.372106	2.17E-13	DLGAP5	NM_001146015	4.005429	5.3E-07	7.39488	5.16E-18
CKS2	NM_001827	4.040368	9.71E-09	3.62889	1.67E-15	DNMT1	NM_001130823	2.300448	6.03E-08	2.170021	8.38E-20
CLDN1	NM_021101	3.088305	5.95E-07	8.856234	2.34E-11	DPY19L1	NM_015283	2.060158	1.2E-05	2.41793	6.43E-15
CLDN2	NM_001171092	5.830947	8.41E-07	7.261114	0.000969	DSCC1	NM_024094	2.687043	5.24E-09	3.607865	3.33E-14
CLDN3	NM_001306	6.739877	0.000601	13.60762	1.19E-05	DTL	NM_001286229	3.646682	1.49E-07	5.35109	3.45E-18
CLDN4	NM_001305	3.445196	9.93E-06	5.672885	1.75E-17	E2F3	NM_001243076	3.026753	2.63E-10	2.523584	1.28E-20
CLDN7	NM_001185022	7.39496	1.56E-06	4.797796	9.35E-18	E2F7	NM_203394	3.022907	1.19E-05	8.079218	2.53E-16
CLRN3	NM_152311	3.734395	0.01334	7.80794	2.84E-05	ECT2	NM_001258315	4.035155	3.59E-09	5.670458	1.84E-27
COL10A1	NM_000493	5.20834	1.51E-06	91.867	1.69E-08	EFNA2	NM_001405	2.057359	0.024448	3.443249	0.001197
COL11A1	NM_001190709	5.968203	1.74E-06	71.32991	1.02E-07	EFNA3	NM_004952	2.650109	1.18E-05	2.852388	0.000137
COL12A1	NM_004370	5.7625	7.92E-11	3.188111	4.15E-12	ENC1	NM_001256574	3.261228	1.99E-06	4.484416	1.05E-27
COL1A1	NM_000088	2.240905	6.18E-09	7.582504	8.4E-31	EPHB2	NM_004442	2.957207	1.12E-06	7.488979	3.06E-11
COL1A2	NM_000089	3.215883	5.73E-07	3.595068	5.21E-16	EPST11	NM_001002264	3.754272	5.54E-08	2.327097	3.19E-06

COL3A1	NM_000090	2.599424	0.000109	3.940762	4.94E-17	ETV4	NM_001079675	2.0406	2.9E-05	8.286438	4.84E-10
COL4A1	NM_001845	3.528854	1.02E-12	3.109484	4.38E-22	EZH2	NM_001203247	3.450661	2.77E-07	3.932657	1.27E-16
COL5A1	NM_000093	2.797919	2.89E-06	2.882106	1.13E-11	F2R	NM_001992	2.545362	4.84E-06	2.91753	2.88E-17
COL5A2	NM_000393	4.217456	4.28E-10	3.880336	1.95E-18	FAM60A	NM_001135811	2.198259	4.17E-11	2.527959	3.68E-19
COL6A3	NM_004369	4.697924	1.13E-09	2.447632	1.52E-09	FAM72A	NM_001100910	6.468103	6.86E-08	9.663502	2.72E-23
COL8A1	NM_001850	17.61766	1.27E-11	3.297011	0.00152	FAM83B	NM_001010872	2.117077	0.000307	2.67038	8.8E-05
CSE1L	NM_001256135	3.429257	4.66E-10	2.095894	1.29E-16	FAM83H	NM_198488	2.399721	1.17E-07	3.892665	5.08E-18
CST1	NM_001898	6.323367	3.9E-06	231.2299	3.66E-08	FANCD2	NM_001018115	2.843492	4.69E-08	4.18265	1.34E-16
CST4	NM_001899	2.047271	2.53E-05	21.77252	1.2E-11	FANCI	NM_001113378	2.540645	1.2E-06	4.294069	2.25E-20
CTHRC1	NM_001256099	10.89702	6.35E-09	9.680546	6.85E-12	FBXO5	NM_001142522	3.108851	2.7E-07	2.012996	1.85E-10
CXCL1	NM_001511	5.082205	3.63E-07	8.322332	3.64E-07	FCGR2A	NM_001136219	2.727427	1.72E-05	2.213804	1.02E-06
CXCL10	NM_001565	8.330608	2.79E-08	4.4084	5.07E-05	FCGR3A	NM_000569	4.617561	6.23E-06	4.9443	7.4E-09
CXCL11	NM_005409	4.757898	4.16E-05	5.902119	2.81E-06	FEN1	NM_004111	2.778399	8.21E-08	2.107377	8.47E-13
CXCL16	NM_001100812	2.3281	2.3E-05	2.351059	3.03E-14	FERMT1	NM_017671	2.040345	3.92E-05	3.532326	3.62E-12
CXCL9	NM_002416	9.40643	2.03E-07	5.664222	2.39E-06	FIGNL1	NM_001042762	3.852637	2.94E-08	2.187696	2.88E-10
DBF4	NM_006716	2.969358	4.35E-09	3.253791	1.23E-16	FMNL2	NM_001004417	2.429822	1.33E-10	2.208198	2.51E-11
DCAF13	NM_015420	2.477539	6.48E-12	2.213989	7.34E-15	FN1	NM_002026	6.707603	1.71E-10	2.380318	3.83E-06
DDX21	NM_001256910	2.351493	5.59E-10	2.148692	1.26E-19	FNDC1	NM_032532	9.524289	7.42E-09	11.24006	3.57E-06
DEPDC1	NM_001114120	4.098693	2.49E-07	5.594769	1.53E-14	FOXC1	NM_001453	2.262347	2.68E-05	2.168476	0.002759
DEPDC1B	NM_001145208	6.434735	2.58E-08	5.793657	7.77E-16	GAS2L3	NM_174942	2.614119	0.000116	2.041285	9.82E-06
GBP5	NM_001134486	3.134768	0.000171	2.894456	0.000209	KIF18B	NM_001080443	4.148463	3.56E-09	11.01718	1.85E-19
GDF15	NM_004864	6.18039	1.22E-08	11.0361	5.68E-13	KIF20A	NM_005733	3.747087	2.84E-08	6.861093	6.46E-19
GDPD5	NM_030792	2.145985	2.18E-05	3.255481	9.9E-08	KIF20B	NM_001284259	2.144407	1.22E-08	2.724888	1.67E-16
GGH	NM_003878	4.604421	2.96E-09	2.875953	2.03E-06	KIF23	NM_001281301	5.251066	3.72E-09	6.352478	1.13E-19
GIN51	NM_021067	4.445216	1.63E-07	4.283423	6.49E-15	KIF2C	NM_006845	5.75107	9.92E-10	4.969033	1.49E-15
GIN52	NM_016095	3.536195	5.19E-07	2.618943	2.65E-08	KIF4A	NM_012310	4.089203	5.5E-08	7.305185	2.96E-17

GPRC5A	NM_003979	3.730644	1.66E-05	4.095404	2.16E-12	KPNA2	NM_002266	2.366603	1.13E-07	2.694287	2.81E-21
GTPBP4	NM_012341	2.386963	8.95E-08	2.02624	7.91E-17	KRT7	NM_005556	3.066259	0.001323	5.346349	0.000973
GTSE1	NM_016426	2.242315	7.86E-08	5.982458	6.03E-17	LAMP3	NM_014398	2.925608	5.14E-06	4.323844	6.24E-10
GZMB	NM_004131	2.121942	0.005893	2.003763	0.004749	LEF1	NM_001130713	2.511854	1.02E-05	2.654133	1.03E-08
HEATR1	NM_018072	2.711348	2.07E-10	2.207646	8.46E-21	LGR5	NM_001277226	3.882192	8.86E-06	6.600057	0.000257
HELLS	NM_001289067	2.133923	1.55E-05	5.624619	1.62E-20	LIF	NM_001257135	2.600416	1.1E-06	4.76182	6.54E-11
HJURP	NM_001282962	3.024597	5.63E-07	8.253621	4.16E-18	LIPG	NM_006033	3.020232	4.95E-06	4.878578	1.07E-08
HMGA1	NM_002131	2.323181	1.88E-08	2.323776	3.17E-10	LMNB1	NM_001198557	2.684858	2.33E-05	3.27753	4.86E-18
HMGB3	NM_005342	3.232659	1.35E-10	3.366064	4.16E-15	LOX	NM_001178102	2.621134	6.48E-05	2.255853	1.42E-05
HMMR	NM_001142556	3.861096	5.33E-07	7.900792	3.1E-18	LOXL2	NM_002318	2.979989	1.06E-07	2.641822	8.08E-12
HOXA10	NM_018951	7.526424	4.98E-07	21.79083	2.58E-07	LY6E	NM_001127213	7.040238	1.45E-10	2.326483	7.96E-09
HOXB6	NM_018952	2.045351	0.000189	2.892711	0.000231	MACC1	NM_182762	2.032916	0.007213	4.215677	1.14E-11
HOXB7	NM_004502	6.697906	9.29E-09	2.714296	5.79E-05	MAD2L1	NM_002358	2.507857	4.98E-06	3.704309	3.55E-13
HOXC6	NM_004503	6.435511	5.95E-09	5.8771	1.38E-07	MAGEA3	NM_005362	6.1883	0.000108	15.1235	0.000699
HPSE	NM_001098540	3.825021	4.46E-07	2.502198	3.32E-06	MAGEA6	NM_005363	6.816183	0.000105	16.0619	0.000778
HSPD1	NM_002156	3.051192	2.88E-05	2.430965	1.01E-20	MARVELD3	NM_001017967	2.769418	1.87E-05	3.997069	7.86E-11
HSPH1	NM_001286503	2.171233	0.000139	2.160286	1.21E-12	MASTL	NM_001172303	2.552586	3.98E-08	2.028942	6.03E-12
IFI30	NM_005027	2.506851	3.61E-08	2.962242	3.92E-17	MCM2	NM_004526	3.965328	7.17E-10	2.781493	1.19E-15
IFI44L	NM_006820	3.085477	0.00016	2.087325	0.020361	MCM4	NM_005914	2.636135	1.25E-06	2.643379	4.18E-15
IFI6	NM_002038	4.704781	2.14E-07	2.728621	2.61E-07	MCM7	NM_001278595	2.570267	1.34E-08	2.096013	4.65E-12
IGF2BP2	NM_001007225	2.288758	0.000108	4.278749	7.38E-12	MCM8	NM_001281520	2.779435	2.74E-07	2.429955	3.26E-11
IL32	NM_001012631	4.479348	7.78E-09	3.341924	5.45E-13	MDK	NM_001012333	3.030734	7.95E-05	2.539128	3.33E-10
INHBA	NM_002192	5.970443	1.63E-08	12.66557	1.13E-12	MELK	NM_001256685	3.52127	2.49E-06	6.98419	3.19E-17
IQGAP3	NM_178229	3.054664	6.9E-06	7.849868	9.06E-23	MEST	NM_001253900	5.680621	4.83E-08	4.336111	1.35E-13
ITGA2	NM_002203	3.628106	4.83E-06	2.384338	2.54E-08	MET	NM_000245	2.258564	5.23E-07	3.493078	3.57E-15
KIAA0101	NM_001029989	2.525061	3.29E-05	4.999128	1.02E-15	MFAP2	NM_001135247	9.927048	2.84E-11	4.024076	2.21E-06

KIF11	NM_004523	3.420278	4.26E-06	4.425147	3.39E-22	MICB	NM_001289160	2.917423	3.32E-05	2.887183	3.12E-08
KIF14	NM_014875	5.166789	1.1E-09	11.2867	3.03E-21	MKI67	NM_001145966	2.540273	7.07E-05	7.551701	3.96E-36
KIF15	NM_020242	2.482955	2.44E-08	5.715718	9.16E-16	MMP1	NM_001145938	2.407264	1.09E-05	10.15696	1.52E-06
MMP12	NM_002426	9.94366	1E-07	10.68756	3.53E-05	PARP14	NM_017554	2.432076	3.95E-08	2.302106	3.54E-16
MMP3	NM_002422	7.101636	1.85E-07	18.1766	5.36E-05	PBK	NM_001278945	4.029626	5.35E-07	6.713036	1.09E-13
MMP7	NM_002423	4.363455	6.01E-06	15.01665	0.000173	PCNA	NM_002592	2.418145	1.51E-07	2.260265	3.83E-15
MMP9	NM_004994	3.515196	1.42E-06	5.879531	2.53E-08	PDGFRB	NM_002609	2.047991	2.7E-06	2.526703	1.36E-11
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MSLN	NM_001177355	3.632165	0.000105	11.96777	0.001159	PIK3AP1	NM_152309	3.592364	1.09E-07	3.884954	1.3E-15
MSR1	NM_002445	2.290772	1.29E-05	3.659696	9.05E-07	PKDCC	NM_138370	5.792373	2.08E-06	2.569408	4.83E-05
MSX2	NM_002449	2.017411	0.005027	3.237062	6.58E-06	PLA2G7	NM_001168357	5.818132	4.62E-09	9.132269	1.45E-14
MXRA5	NM_015419	2.043933	0.00054	2.695675	2.3E-10	PLAU	NM_001145031	6.564345	6.07E-11	3.178416	4.66E-11
MYB	NM_001130172	3.390553	9.09E-06	5.622652	1.53E-08	PLAUR	NM_001005376	2.428433	0.000125	2.396088	4.64E-09
MYBL2	NM_001278610	2.718004	7.68E-07	9.68512	2.81E-21	PLOD3	NM_001084	2.894064	9.5E-11	2.537126	8.54E-18
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NCAPG	NM_022346	2.582104	4.15E-07	7.267725	1.37E-18	PMAIP1	NM_021127	3.332206	1.82E-06	2.535922	1.7E-06
NCAPG2	NM_001281932	2.247396	4.88E-06	2.78924	1.9E-13	PMEPA1	NM_001255976	3.958864	6.01E-08	3.367255	9.13E-12
NCAPH	NM_001281710	2.003055	3.87E-07	5.685757	7.33E-16	PNPT1	NM_033109	2.400742	1.32E-10	2.041405	3.38E-14
NDC80	NM_006101	4.469064	6.89E-08	5.119332	6.46E-18	PODXL	NM_001018111	2.725621	1.93E-10	2.473951	1.36E-17
NEK2	NM_001204182	7.669709	9.57E-09	7.974781	2E-17	PPAT	NM_002703	2.311421	5.63E-06	2.508939	1.18E-12
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NID2	NM_007361	4.886446	1.05E-10	2.531933	5.14E-07	PRC1	NM_001267580	6.061792	4.74E-08	3.689038	1.32E-18
NME1	NM_000269	3.120823	1.7E-09	2.200601	2.26E-12	PRIM1	NM_000946	2.174002	5.21E-07	2.051322	3.35E-09
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NOTCH3	NM_000435	2.719378	3.57E-08	2.237939	3.88E-10	PRKDC	NM_001081640	2.310228	1.46E-08	2.118558	4.33E-18
NUDCD1	NM_001128211	4.352376	4.54E-13	2.385651	3.39E-15	PRR11	NM_018304	4.312383	4.53E-07	3.483218	1.32E-14

NUF2	NM_031423	6.156864	1.83E-09	7.317485	1.61E-18	PSRC1	NM_001005290	3.216516	1.12E-07	2.158656	5.92E-07
NUP107	NM_020401	2.410373	5.28E-08	2.122707	1.54E-12	PTTG1	NM_001282382	2.978406	6.4E-07	2.832096	7.22E-11
NUSAP1	NM_001129897	3.469398	1.67E-06	4.461899	3.46E-21	PUS7	NM_019042	3.952763	3.77E-10	2.813347	1.95E-13
OAS3	NM_006187	2.067578	5.99E-05	2.217927	1.47E-09	RAD51	NM_001164269	2.253736	1.78E-06	3.735777	1.11E-16
OIP5	NM_007280	4.12922	1.4E-07	3.755546	3.96E-14	RAD51AP1	NM_001130862	3.826546	3.67E-07	4.532566	2.03E-16
OLFML2B	NM_015441	3.508141	5.06E-07	3.548199	3.57E-07	RARRES1	NM_002888	6.773479	1.62E-05	2.460981	0.002579
ONECUT2	NM_004852	2.028773	0.035025	10.89616	6.72E-08	RBL1	NM_002895	2.421893	9.49E-08	2.253062	1.73E-10
OSBPL3	NM_015550	2.300056	1.75E-06	3.041186	1.56E-22	RCC1	NM_001048194	2.851565	1.1E-07	7.054448	3.27E-14
OSMR	NM_001168355	3.037355	1.16E-06	2.007331	0.000158	RCC2	NM_001136204	2.394175	6.73E-11	2.569875	6.51E-30
OVOL1	NM_004561	2.292996	0.000422	3.443731	0.00027	RCN3	NM_020650	2.640665	1.05E-05	2.170628	4.13E-05
P4HA1	NM_000917	2.191808	1.96E-05	2.005728	1.18E-08	RFC3	NM_002915	3.042734	5.33E-07	3.13757	1.9E-14
PAFAH1B3	NM_001145939	2.154829	9.88E-08	2.115959	9.33E-10	RFC4	NM_002916	2.957937	2.17E-07	2.115899	8.6E-12
RIPK2	NM_003821	2.505711	3.21E-08	2.370388	1E-14	TFAP2A	NM_001032280	4.457445	1.77E-07	3.118733	0.000553
RPP25	NM_017793	2.226238	3.39E-06	2.252384	1.23E-11	TGIF1	NM_001278682	3.225332	1.85E-14	2.016603	3.49E-17
RRM2	NM_001034	3.167225	1.09E-05	5.214598	3.97E-21	THBS2	NM_003247	11.05046	6.37E-10	5.343186	1.97E-08
RTKN	NM_001015055	4.827374	4.99E-13	2.14348	2.34E-11	THY1	NM_006288	6.141903	6.4E-10	3.338926	9.11E-14
SCML1	NM_001037535	2.445854	3.51E-07	2.162547	3.32E-05	TIGD1	NM_145702	2.105354	2.75E-07	2.241432	3.97E-10
SERPINA1	NM_000295	2.012828	0.007314	3.547525	2.26E-06	TIMELESS	NM_003920	2.062772	1.62E-07	3.126608	2.44E-18
SERPINB5	NM_002639	5.09555	0.002027	3.975475	0.000539	TIMP1	NM_003254	4.305043	5.09E-09	2.708027	8.43E-15
SERPINE1	NM_000602	2.138746	0.00048	3.596301	5.35E-08	TMEM206	NM_001198862	3.096153	1.15E-11	2.202759	6.05E-17
SERPINH1	NM_001207014	10.94461	1.99E-14	2.605328	3.75E-22	TNFRSF10B	NM_003842	2.084648	1.94E-07	2.50778	3.66E-17
SGOL2	NM_001160033	2.891123	1.25E-06	3.351256	2.54E-15	TNFRSF12A	NM_016639	4.61076	6.2E-11	2.602693	1.24E-08
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SKP2	NM_001243120	3.162955	9.52E-08	2.013993	5.54E-07	TOP1MT	NM_001258446	2.135833	2.2E-07	2.008539	1.29E-08
SLAMF8	NM_020125	2.692191	5.69E-05	2.530798	3.6E-06	TOP2A	NM_001067	7.316677	9.58E-09	7.553393	2.76E-26
SLC12A8	NM_001195483	2.020391	4.61E-05	3.770903	5.31E-18	TPX2	NM_012112	5.998195	3.08E-09	7.804894	3.07E-27

SLC27A2	NM_001159629	2.219131	0.002824	2.987176	5.56E-06	TRIB3	NM_021158	4.462335	2.64E-07	3.239358	4.36E-05
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SMC2	NM_001042550	2.706622	1.21E-07	2.179047	1.51E-13	TTF2	NM_003594	2.211342	2.7E-07	2.102979	1.2E-12
SMC4	NM_001002799	4.774077	1.22E-08	2.198603	1.21E-15	TTK	NM_001166691	3.476793	1.5E-06	8.07131	6.23E-16
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SNX10	NM_001199835	6.708859	6.22E-14	3.768813	2.15E-13	TYMS	NM_001071	3.904704	1.5E-06	2.925891	2.37E-13
SOX4	NM_003107	2.157755	1.92E-06	3.617949	5.06E-24	UBE2C	NM_001281741	5.830752	4.83E-09	7.777198	2.22E-17
SPAG5	NM_006461	2.07964	3.45E-05	4.599277	3.66E-17	UBE2S	NM_014501	4.386306	2.34E-07	2.311105	1.24E-07
SPARC	NM_003118	4.443717	1.09E-11	2.59221	2.15E-13	UBE2T	NM_014176	4.397908	9.33E-10	4.19151	2.1E-14
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STAMBPL1	NM_020799	2.711159	6.86E-08	2.18027	1.81E-08	VIL1	NM_007127	2.408168	0.040035	12.06078	1.63E-07
STAT1	NM_007315	2.116493	1.37E-06	2.170138	6.1E-13	WDHD1	NM_001008396	2.192082	1.5E-06	3.043404	7.34E-14
STIL	NM_001048166	3.894994	7.3E-11	5.877928	9.4E-19	WDR72	NM_001277176	12.13917	1.76E-06	11.77791	0.000571
STMN1	NM_001145454	2.632088	8.23E-08	2.059349	2.31E-12	XPO5	NM_020750	3.021366	8.21E-09	2.220044	7.1E-15
SULF1	NM_001128204	6.064707	2.01E-08	5.001276	2.28E-12	ZIC2	NM_007129	6.906656	4.98E-08	10.28338	8.3E-05
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TACC3	NM_006342	2.972641	9.87E-09	2.887771	9.48E-16	ZWILCH	NM_001287821	3.293512	2.4E-07	2.810391	1.97E-19
TEAD4	NM_003213	2.703665	3.16E-10	2.761347	4.2E-14						

CO-DOWNREGULATION		GES13911		TCGA-STAD				GES13911		TCGA-STAD	
GENECARD	RefSeq	Fold Change	P-value	Fold Change	P-value	GeneCard	RefSeq	Fold Change	P-value	Fold Change	P-value
AADAC	NM_001086	-8.31858	5.95E-09	-3.34642	0.004212	BEX4	NM_001080425	-2.13716	0.000439	-3.56223	5.29E-22
ABAT	NM_000663	-2.1599	0.006995	-2.34964	3.51E-08	BEX5	NM_001012978	-2.00597	0.000866	-3.10366	7.35E-06
ABCA8	NM_001288985	-13.1132	8.51E-11	-11.2914	3.13E-26	BNIP3	NM_004052	-3.42983	1.93E-05	-2.71504	4.14E-12
ABI3BP	NM_015429	-2.11941	0.006633	-5.74518	3.26E-14	C16orf89	NM_001098514	-15.9323	3.16E-12	-22.6547	1.3E-44
ACACB	NM_001093	-2.70331	3.32E-10	-3.18054	8.82E-17	C2orf40	NM_032411	-4.2101	3.3E-06	-38.8418	2.43E-47
ACE2	NM_021804	-2.46972	0.021968	-3.54253	0.000238	C6orf58	NM_001010905	-20.2959	1.27E-07	-9.27765	5.2E-06
ADAMTS1	NM_006988	-2.08559	0.000838	-3.33594	4.87E-15	C7	NM_000587	-2.42029	0.007957	-11.3529	1.32E-15
ADAMTS15	NM_139055	-2.48208	6.55E-08	-3.14548	3.44E-08	CA2	NM_000067	-7.67873	5.55E-07	-2.47499	0.001866
ADH1B	NM_000668	-7.86817	1.45E-07	-16.9078	4.19E-30	CACNA2D1	NM_000722	-2.21288	9.94E-05	-2.28437	7.48E-05
ADH1C	NM_000669	-12.4798	1.11E-08	-3.57858	0.002187	CAPN6	NM_014289	-2.16138	0.001555	-2.62435	0.00262
ADH4	NM_000670	-2.63191	0.027275	-5.33086	6.95E-06	CAPN9	NM_006615	-11.5379	3.37E-15	-3.14351	0.021873
AFF3	NM_001025108	-2.90149	1.05E-05	-6.8311	4.3E-29	CBR1	NM_001286789	-2.20401	0.000239	-3.94001	1.86E-28
AGPAT9	NM_001256421	-4.46943	2.62E-08	-3.58614	6.48E-18	CCKBR	NM_176875	-11.5455	8.21E-10	-20.4782	1.1E-22
AKR1B10	NM_020299	-18.083	2.61E-08	-8.302	1.07E-07	CCL11	NM_002986	-2.75761	0.000752	-2.05106	0.005667
AKR1C1	NM_001135241	-7.70076	6.6E-12	-8.83551	2.17E-24	CCL14	NM_004166	-2.39644	0.000206	-11.3338	7.71E-43
AKR1C2	NM_001135241	-10.3085	1.14E-07	-10.7309	2.08E-31	CD36	NM_000072	-3.49605	1.11E-07	-4.24641	3.91E-20
AKR1C3	NM_001253908	-4.9491	0.00011	-2.09832	0.002166	CFD	NM_001928	-2.67943	1.11E-06	-9.24585	3.58E-37
ALDH1A1	NM_000689	-3.72657	5.62E-06	-2.02869	0.006561	CHGA	NM_001275	-26.167	2.03E-13	-26.1404	3.95E-19
ALDH3A1	NM_000691	-10.6771	1.8E-08	-5.93609	2.11E-09	CHIA	NM_001040623	-14.642	1.57E-06	-8.91147	4.16E-15
ALDH6A1	NM_001278593	-2.60907	8.68E-08	-2.31264	1.24E-21	CHRM3	NM_000740	-4.31226	3.38E-06	-2.36645	2.63E-05
ALDOB	NM_000035	-4.16009	0.001405	-3.81058	0.001123	CIDEB	NM_014430	-2.10953	0.00179	-3.26995	6.95E-29
ANKRD29	NM_173505	-2.65133	0.000166	-2.88818	1.57E-09	CIDEC	NM_001199551	-2.5532	0.000167	-5.62872	2.24E-07
APLP1	NM_001024807	-3.0495	1.23E-07	-2.53312	0.000105	CKB	NM_001823	-5.26041	1.37E-08	-6.83082	1.03E-16
APOA4	NM_000482	-2.0576	0.004696	-23.7343	2.17E-12	CKMT2	NM_001099735	-4.21653	2.11E-07	-24.0069	2.49E-46

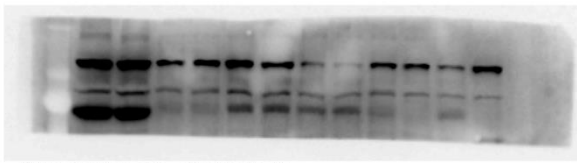
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APOBEC2	NM_006789	-3.20627	3.8E-08	-6.34746	1.08E-21	CLEC3B	NM_003278	-3.40337	1.09E-06	-11.2359	2.45E-69
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AQP4	NM_001650	-35.7272	3.79E-10	-37.6695	1.57E-44	COL4A5	NM_000495	-3.68259	8.78E-09	-5.06831	4.95E-16
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ATP4A	NM_000704	-123.777	7.57E-13	-59.0173	8.26E-20	CPA3	NM_001870	-4.29192	5.42E-07	-3.37921	2.52E-08
ATP4B	NM_000705	-348.129	1.74E-14	-55.7655	4.6E-22	CPE	NM_001873	-3.26049	9.85E-05	-4.12633	1.11E-16
B3GNT6	NM_138706	-2.25353	8.45E-10	-11.3305	1.97E-11	CSTA	NM_005213	-4.08637	2.91E-06	-5.35791	1.92E-13
BEX2	NM_001168399	-2.91545	0.000263	-6.30129	1E-11	CWH43	NM_001286791	-7.06837	4.99E-11	-63.8313	8.54E-45
CXCL12	NM_000609	-2.75112	0.002649	-3.23928	3.34E-12	FAM189A2	NM_001127608	-3.47232	4.81E-08	-5.28456	1.88E-14
CXCL14	NM_004887	-4.34174	2.61E-05	-3.18743	3.86E-05	FAM3B	NM_058186	-15.626	1.74E-08	-3.90674	0.000224
CXCL17	NM_198477	-13.0187	6.61E-09	-7.5035	1.05E-07	FCGBP	NM_003890	-14.7897	6.48E-09	-2.89605	0.00283
CYBRD1	NM_001127383	-2.12458	0.000488	-3.42737	2.07E-12	FHL1	NM_001159699	-2.99677	1.36E-05	-8.45654	7.91E-19
CYP2C18	NM_000772	-7.74588	3.83E-07	-2.90239	0.003397	FRMD3	NM_001244959	-2.04089	0.000228	-2.48449	2.9E-07
CYP3A4	NM_001202855	-2.96949	0.000127	-8.03134	3.03E-08	GABARAPL1	NM_031412	-2.16936	7.31E-06	-2.24952	3.09E-13
CYP4F12	NM_023944	-2.78495	1.68E-06	-3.00789	5.38E-05	GATA5	NM_080473	-2.15803	1.16E-06	-4.30451	0.001311
DEFA5	NM_021010	-10.3345	0.000515	-23.4977	1.75E-13	GBA3	NM_001128432	-3.5258	0.015182	-4.63224	5.32E-05
DEFA6	NM_001926	-8.03334	0.000369	-11.8881	7.07E-09	GCNT2	NM_001491	-5.04706	5.67E-09	-2.51784	1.04E-09
DEFB4A	NM_001205266	-4.95531	8.3E-07	-6.3077	7.99E-09	GDPD3	NM_024307	-3.63968	1.11E-05	-3.03927	8.69E-08
DHRS7	NM_016029	-2.46798	1.59E-08	-2.10627	1.99E-15	GGT6	NM_001122890	-2.136	0.010347	-3.47778	0.001244
DHRS9	NM_001142270	-2.38535	0.003003	-3.07841	1.6E-05	GHRL	NM_001134941	-10.7241	3.48E-10	-7.76167	1.63E-11
DISP1	NM_032890	-2.27532	8.48E-08	-2.10972	3.27E-17	GIF	NM_005142	-340.593	9.29E-14	-17.9699	4.17E-08
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DNER	NM_139072	-5.01365	3.49E-05	-12.4718	1.4E-21	GKN2	NM_182536	-78.8457	1.16E-09	-63.3942	3.28E-19
DPCR1	NM_080870	-18.3119	2.93E-07	-6.10049	3.24E-05	GLUL	NM_001033044	-2.45837	0.000318	-2.04787	1.18E-13
DPT	NM_001937	-4.28776	1.17E-07	-23.6541	5.85E-61	GNG7	NM_052847	-2.53433	1.06E-07	-7.16059	1.24E-50

DUOX1	NM_017434	-2.69015	6.29E-05	-2.43867	0.000502	GPDIL	NM_015141	-2.64304	5.49E-11	-2.03648	2.27E-14
DUOXA2	NM_207581	-3.9807	1.88E-07	-2.73483	0.04896	GPR155	NM_001033045	-17.5528	1.31E-09	-3.5787	4.42E-18
DUSP5	NM_004419	-2.0999	0.003647	-3.2379	1.85E-16	GPR64	NM_001079858	-5.0085	1.21E-08	-3.31015	3.05E-08
ECHDC2	NM_001198961	-2.20551	1.11E-06	-2.42885	3.47E-15	GPX3	NM_002084	-5.48352	1.42E-08	-7.75411	3.16E-33
EDIL3	NM_001278642	-2.06806	8.95E-05	-2.14931	1.53E-07	GSTA1	NM_145740	-6.00365	3.1E-07	-4.18689	0.002556
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IRX3	NM_024336	-7.71685	4.25E-11	-4.59295	4.45E-10	MGAM	NM_004668	-3.65687	1.81E-06	-3.11321	0.000207
ITGA8	NM_001291494	-2.27348	0.000111	-4.97686	3.79E-17	MICALL1	NM_033386	-2.13006	7.77E-07	-2.4273	3.27E-21
ITM2A	NM_001171581	-2.75877	7.05E-05	-3.06986	1.21E-14	MRAP2	NM_138409	-4.53033	4.91E-09	-2.34544	0.002534
JAM2	NM_001270407	-2.09847	9.26E-06	-4.25087	1.19E-24	MT1E	NM_175617	-2.85402	3.33E-07	-2.9049	5.81E-08
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KIT	NM_000222	-4.99752	5.09E-11	-4.51202	2.65E-19	MTTP	NM_000253	-3.06604	0.043149	-10.7787	7.47E-12
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KLF9	NM_001206	-2.33939	3.64E-06	-2.89866	2.31E-15	NR3C1	NM_000176	-2.1062	0.000232	-2.03177	7.72E-10
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LEAP2	NM_052971	-2.30216	0.001586	-2.13574	0.000571	OXCT1	NM_000436	-2.76985	1.48E-05	-2.11446	5.83E-07
LEPR	NM_001003679	-5.76493	3.49E-08	-2.02037	7.81E-08	P2RY14	NM_001081455	-2.61464	5.95E-05	-5.81074	4.95E-37
LEPREL1	NM_001134418	-3.02898	6.28E-06	-3.51828	9.7E-14	PAIP2B	NM_020459	-2.8792	3.53E-06	-4.32148	6.11E-18
LIFR	NM_001127671	-7.57047	1.51E-08	-3.37839	5.88E-12	PBX1	NM_001204961	-2.32623	0.00112	-2.59917	7.22E-11
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RNASE1	NM_002933	-5.15942	1.22E-09	-3.09751	1.41E-10	TFF2	NM_005423	-9.06992	1.03E-06	-4.47006	0.00663
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SCARA5	NM_173833	-5.56913	1.39E-09	-23.3207	3.56E-54	TMEM100	NM_001099640	-6.55994	2.73E-11	-12.3918	3.74E-40
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SDPR	NM_004657	-2.75956	2.58E-05	-3.86266	3.02E-17	TMPRSS15	NM_002772	-4.68941	0.007099	-14.7849	1.31E-11
SELENBP1	NM_001258288	-4.16363	5.3E-07	-2.5674	1.12E-09	TNFRSF17	NM_001192	-10.1114	9.31E-10	-2.68933	0.006576
SETBP1	NM_001130110	-2.29056	1.27E-06	-3.07632	6E-13	TOX	NM_014729	-2.79659	4.66E-05	-3.07574	8.64E-11
SFRP1	NM_003012	-2.14131	0.001461	-15.8511	8.61E-35	TPD52L1	NM_001003395	-3.16588	0.000259	-3.42094	9.36E-09
SGK1	NM_001143676	-2.60043	9.78E-11	-2.05527	9.67E-09	TPH1	NM_004179	-5.48383	4.52E-08	-2.92853	0.00046
SIDT2	NM_001040455	-2.76201	5.93E-11	-2.01881	1.2E-16	TPSAB1	NM_003294	-3.18486	2.19E-05	-3.5427	3.52E-09
SLAIN1	NM_001040153	-3.26485	2.08E-05	-2.05507	0.000143	TPSB2	NM_024164	-2.8879	8.01E-05	-3.60521	2.89E-09
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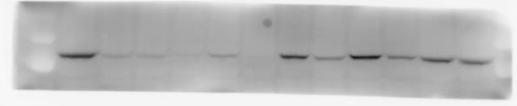
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SMAD9	NM_001127217	-4.16132	8.6E-08	-3.48219	3.81E-12	WIPF3	NM_001080529	-3.31417	7.97E-07	-2.41684	9.96E-05
SNRPN	NM_003097	-2.57375	3.94E-06	-3.8849	2.59E-23	XK	NM_021083	-3.17431	1.64E-05	-2.05408	0.000281
SOBP	NM_018013	-2.26129	2.53E-05	-2.78007	8.17E-13	ZBTB7C	NM_001039360	-3.94262	1.96E-09	-4.92124	8.4E-12
SORBS1	NM_001034954	-3.25029	9.24E-05	-4.51225	5.94E-11	ZG16	NM_152338	-2.71276	0.006832	-7.43114	2.73E-08
SORBS2	NM_001145670	-3.0045	7.34E-09	-3.90647	5.41E-15						
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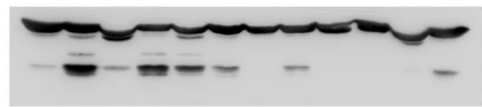
Sup-figure 1b. Calpain-8



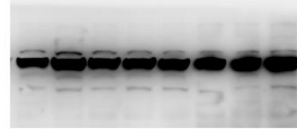
Sup-figure 1b. β -Actin



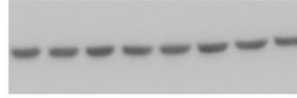
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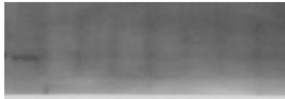
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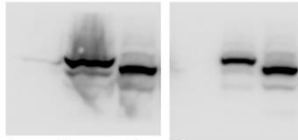
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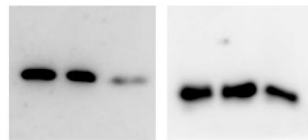
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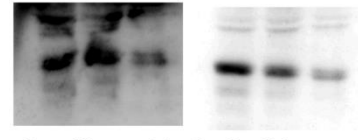
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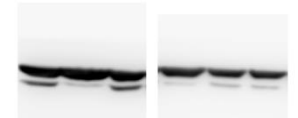
Sup-figure 2a. Flag



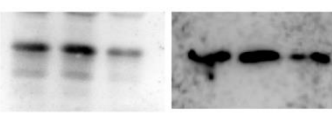
Sup-figure 2d. CDK4



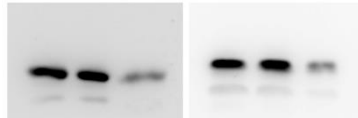
Sup-figure 2d. Cyclin D1



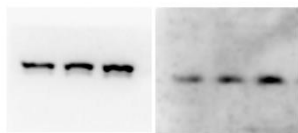
Sup-figure 2a. GAPDH



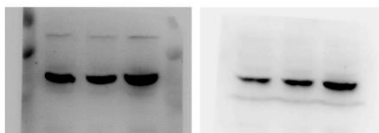
Sup-figure 2d. CDK6



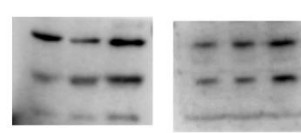
Sup-figure 2d. Cyclin D3



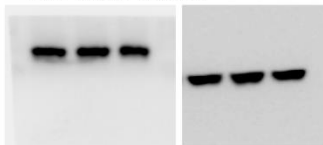
Sup-figure 2d. p21



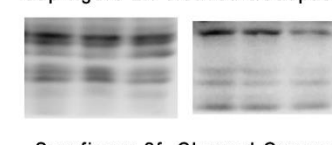
Sup-figure 2f. cleaved & Caspase12



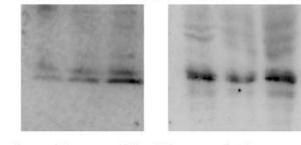
Sup-figure 2f. Cleaved Caspase9



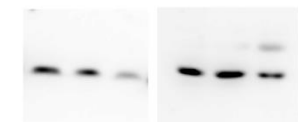
Sup-figure 2d. GAPDH



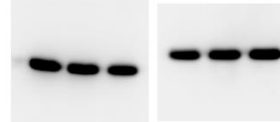
Sup-figure 2f. Cleaved Caspase8



Sup-figure 2f. Cleaved Caspase3



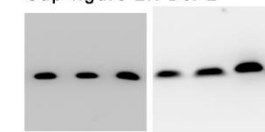
Sup-figure 2f. Bcl-2



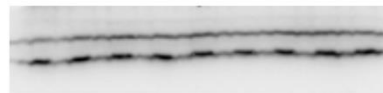
Sup-figure 2f. GAPDH



Sup-figure 3c. Cleaved Caspase12



Sup-figure 2f. Bax



Sup-figure 3c. B-actin