

**Table S1** 179 genes associated with tumorigenesis and chemotherapy treatment

Gene					
<i>ENC1</i>	<i>PMEPA1</i>	<i>MTTP</i>	<i>CRTAC1</i>	<i>TESK2</i>	<i>POU2AF1</i>
<i>SERPINH1</i>	<i>ANGPT2</i>	<i>PTK7</i>	<i>FOXC1</i>	<i>DPYSL2</i>	<i>PTGER4</i>
<i>SOX4</i>	<i>IER5L</i>	<i>GTF3A</i>	<i>DIO2</i>	<i>HIST3H2A</i>	<i>IFITM2</i>
<i>CTHRC1</i>	<i>SLC1A5</i>	<i>BEST4</i>	<i>NID2</i>	<i>ADH4</i>	<i>BRSK1</i>
<i>COL1A1</i>	<i>COL1A2</i>	<i>RCN3</i>	<i>MIF</i>	<i>LRRC32</i>	<i>FSTL1</i>
<i>BGN</i>	<i>RAB15</i>	<i>SFRP4</i>	<i>MMP10</i>	<i>TM4SF18</i>	<i>ITGBL1</i>
<i>PUS7</i>	<i>FAP</i>	<i>DISP1</i>	<i>COL4A2</i>	<i>FSTL3</i>	<i>LDB2</i>
<i>CST1</i>	<i>SPARC</i>	<i>IFITM3</i>	<i>MSX1</i>	<i>BMPR2</i>	<i>SLC4A2</i>
<i>CLDN1</i>	<i>SERPINE1</i>	<i>SIDT2</i>	<i>AGT</i>	<i>CDH5</i>	<i>YAP1</i>
<i>COL4A1</i>	<i>CPXM1</i>	<i>CDK6</i>	<i>TM6SF2</i>	<i>LUM</i>	<i>PLVAP</i>
<i>ESM1</i>	<i>COL12A1</i>	<i>STC2</i>	<i>ADAMTSL2</i>	<i>ACE2</i>	<i>CTSK</i>
<i>OTOP3</i>	<i>NOTCH3</i>	<i>NUAK1</i>	<i>NOS3</i>	<i>CAT</i>	<i>CALCRL</i>
<i>COL5A2</i>	<i>THBS2</i>	<i>NOX4</i>	<i>OXTR</i>	<i>MCOLN2</i>	<i>THBS1</i>
<i>PTPN12</i>	<i>SLC25A34</i>	<i>APOB</i>	<i>GDPD2</i>	<i>CREB3L3</i>	<i>PCDH18</i>
<i>MS4A10</i>	<i>HAPLN3</i>	<i>CDH11</i>	<i>COMP</i>	<i>TGFBI</i>	<i>LAMC1</i>
<i>EPHB4</i>	<i>PDGFRB</i>	<i>PXDN</i>	<i>TNNC1</i>	<i>IGFBP7</i>	<i>EDNRA</i>
<i>CCT2</i>	<i>SLC39A1</i>	<i>COL7A1</i>	<i>PLS3</i>	<i>SH3PXD2B</i>	<i>PCOLCE</i>
<i>MMP11</i>	<i>FNDC1</i>	<i>COL6A3</i>	<i>ENG</i>	<i>SULT1B1</i>	<i>SLC6A8</i>
<i>PLAU</i>	<i>MXRA5</i>	<i>C1orf198</i>	<i>CYB5A</i>	<i>GJA4</i>	<i>PLEKHA4</i>
<i>HPGD</i>	<i>OLFML2B</i>	<i>LZTS1</i>	<i>TBX10</i>	<i>TMEM147</i>	<i>TMEM119</i>
<i>GKN2</i>	<i>VCAN</i>	<i>COL8A1</i>	<i>WNT5A</i>	<i>UBTD1</i>	<i>FCER2</i>
<i>DNASE1L3</i>	<i>CHSY3</i>	<i>FZD2</i>	<i>HES4</i>	<i>SRPX2</i>	<i>SLC7A9</i>
<i>FOXS1</i>	<i>ALDOC</i>	<i>FSCN1</i>	<i>EMP1</i>	<i>COL15A1</i>	<i>CHP2</i>
<i>TIMP1</i>	<i>LAMB1</i>	<i>STC1</i>	<i>NKD2</i>	<i>KCNJ2</i>	<i>GLRX</i>
<i>COL10A1</i>	<i>COL5A1</i>	<i>SALL4</i>	<i>ICAM3</i>	<i>CLC</i>	<i>GREM1</i>
<i>COL3A1</i>	<i>GPR4</i>	<i>SLC2A5</i>	<i>ADAMTS9</i>	<i>TMEM37</i>	<i>PTP4A3</i>
<i>THY1</i>	<i>IGFBP3</i>	<i>SPON2</i>	<i>GATA5</i>	<i>INHBB</i>	<i>NOTUM</i>
<i>SULF1</i>	<i>GGH</i>	<i>CHSY1</i>	<i>RBKS</i>	<i>NNMT</i>	<i>MGP</i>
<i>GKN1</i>	<i>HADH</i>	<i>HEYL</i>	<i>SLC28A2</i>	<i>DDAH2</i>	<i>AEBP1</i>
<i>CALU</i>	<i>LEF1</i>	<i>NETO2</i>	<i>PSD4</i>	<i>CLEC11A</i>	

**Table S2** Univariate COX analysis of 179 genes

Gene	P value	HR	Low 95% CI	High 95% CI
<i>ENC1</i>	0.99111589	0.99875337	0.80186261	1.24398903
<i>SERPINH1</i>	0.22755603	1.18259297	0.90059922	1.55288403
<i>SOX4</i>	0.21682884	1.14317825	0.92445665	1.41364823
<i>CTHRC1</i>	0.06439859	1.14994202	0.99168313	1.33345683
<i>COL1A1</i>	0.14113844	1.10628761	0.96703142	1.26559722
<i>BGN</i>	0.02458247	1.19629151	1.02322296	1.398633
<i>PUS7</i>	0.18835413	0.81173631	0.59490631	1.10759598
<i>CST1</i>	0.16196605	1.06508645	0.97500167	1.16349457
<i>CLDN1</i>	0.01199434	1.20680662	1.04219393	1.3974196
<i>COL4A1</i>	0.8997047	1.01402903	0.81650842	1.25933162
<i>ESM1</i>	0.26669952	0.88111792	0.70475725	1.10161163
<i>OTOP3</i>	0.1500691	1.19193524	0.93845801	1.51387659
<i>COL5A2</i>	0.17538441	1.13246851	0.94598678	1.35571126
<i>PTPN12</i>	0.14797737	1.32137146	0.90586591	1.92746245
<i>MS4A10</i>	0.19343964	1.31677451	0.86974817	1.99355992
<i>EPHB4</i>	0.74994713	1.04751321	0.7873805	1.39358789
<i>CCT2</i>	0.59957507	0.92582984	0.69436203	1.23445818
<i>MMP11</i>	0.04560896	1.1292835	1.00237674	1.27225741
<i>PLAU</i>	0.90991239	0.98987489	0.82989378	1.18069602
<i>HPGD</i>	0.85078262	1.01394869	0.87768231	1.17137139
<i>GKN2</i>	0.76811309	1.01179203	0.93593857	1.09379306
<i>DNASE1L3</i>	0.61174291	1.07689075	0.80899556	1.43349821
<i>FOXS1</i>	0.00492406	1.35431427	1.09625021	1.6731282
<i>TIMP1</i>	0.12462071	1.15947491	0.95994152	1.40048332
<i>COL10A1</i>	0.04679532	1.12334546	1.00165019	1.25982607
<i>COL3A1</i>	0.09194755	1.12965297	0.98032035	1.30173348
<i>THY1</i>	0.38254473	1.08602177	0.90239731	1.30701108
<i>SULF1</i>	0.18239515	1.09665493	0.95757293	1.25593779
<i>GKN1</i>	0.68233004	1.01251814	0.95395993	1.0746709
<i>CALU</i>	0.85595233	1.03060709	0.74426402	1.42711585
<i>PMEPA1</i>	0.00471702	1.24448782	1.06931167	1.44836158
<i>ANGPT2</i>	0.82197046	0.96756935	0.72604889	1.28943168
<i>IER5L</i>	0.47384399	0.92970461	0.76159145	1.13492696
<i>SLC1A5</i>	0.26640976	0.89499637	0.73596176	1.08839691
<i>COL1A2</i>	0.14136728	1.11607187	0.96412833	1.29196123

Table S2 (continued)

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Gene	P value	HR	Low 95% CI	High 95% CI
<i>RAB15</i>	0.35979063	0.90865967	0.74023488	1.11540596
<i>FAP</i>	0.18326906	1.16557549	0.9301188	1.4606373
<i>SPARC</i>	0.10343479	1.16154405	0.96997171	1.3909525
<i>SERPINE1</i>	0.00329855	1.22937057	1.07118353	1.41091789
<i>CPXM1</i>	0.25138562	1.10385675	0.93236069	1.30689736
<i>COL12A1</i>	0.57951883	1.04752922	0.88885889	1.23452381
<i>NOTCH3</i>	0.01892879	1.30502063	1.0448723	1.62993969
<i>THBS2</i>	0.13152978	1.10163913	0.97141287	1.24932335
<i>SLC25A34</i>	0.61684441	0.88396712	0.54526423	1.43306277
<i>HAPLN3</i>	0.26281808	1.13261338	0.91079321	1.408457
<i>PDGFRB</i>	0.07963604	1.18781495	0.97986332	1.43989913
<i>SLC39A1</i>	0.99599399	1.00087331	0.71184787	1.40724924
<i>FNDC1</i>	0.03728189	1.13990435	1.00774439	1.28939634
<i>MXRA5</i>	0.52321801	1.0538811	0.89705249	1.23812752
<i>OLFML2B</i>	0.12485892	1.14043195	0.96424159	1.34881656
<i>VCAN</i>	0.0153998	1.24176816	1.04223602	1.47949998
<i>CHSY3</i>	0.68431318	1.10033913	0.69397752	1.74464758
<i>ALDOC</i>	0.82167913	1.02549225	0.82387999	1.27644119
<i>LAMB1</i>	0.2491859	1.1563023	0.9032231	1.4802932
<i>COL5A1</i>	0.13480875	1.13569553	0.9612414	1.34181105
<i>GPR4</i>	0.92844051	1.014704	0.73788375	1.39537455
<i>IGFBP3</i>	0.03061089	1.20770241	1.01779964	1.43303755
<i>GGH</i>	0.08818348	0.87324875	0.74726751	1.02046906
<i>HADH</i>	0.00042848	0.5355556	0.37833971	0.75810122
<i>LEF1</i>	0.07506805	1.23530778	0.97886763	1.55892918
<i>MTTP</i>	0.49222994	1.06630827	0.88778553	1.28072973
<i>PTK7</i>	0.44185483	1.06857402	0.90239353	1.26535751
<i>GTF3A</i>	0.75618693	0.95339285	0.7053859	1.28859668
<i>BEST4</i>	0.01353853	1.94266432	1.14679338	3.29086715
<i>RCN3</i>	0.27674034	1.10830926	0.92083687	1.33394899
<i>SFRP4</i>	0.06198796	1.09694976	0.99537104	1.2088947
<i>DISP1</i>	0.23839965	1.30407131	0.83873417	2.02758162
<i>IFITM3</i>	0.96082495	1.00535846	0.81228603	1.2443223
<i>SIDT2</i>	0.53792434	1.10543424	0.80354737	1.52073781

Table S2 (continued)

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Gene	P value	HR	Low 95% CI	High 95% CI
CDK6	0.83728564	0.98093904	0.81634876	1.17871362
STC2	0.77378977	0.96081563	0.73157747	1.26188507
NUAK1	0.00413961	1.60273791	1.16098961	2.2125683
NOX4	0.03033385	1.68222377	1.05065158	2.69344935
APOB	0.07246566	1.13321352	0.98866157	1.29890038
CDH11	0.06761862	1.20780076	0.98641257	1.47887681
PXDN	0.54083748	1.0756884	0.85139991	1.35906232
COL7A1	0.40572109	1.07918695	0.90173333	1.29156197
COL6A3	0.29952301	1.08962379	0.92651754	1.28144363
C1orf198	0.46686196	1.14324333	0.79712618	1.6396467
LZTS1	0.01810553	1.36711863	1.05483576	1.77185247
COL8A1	0.02300867	1.19012635	1.02428063	1.38282488
FZD2	0.003368	1.34195585	1.10242301	1.63353403
FSCN1	0.07202358	1.16284343	0.9865891	1.37058563
STC1	0.2216665	1.13247191	0.92764246	1.38252903
SALL4	0.25310759	1.10357528	0.93195823	1.30679504
SLC2A5	0.83673339	1.03883501	0.72305654	1.49252254
SPON2	0.28546586	1.11261082	0.9147555	1.35326088
CHSY1	0.529566	1.12222266	0.7833404	1.60770936
HEYL	0.01585271	1.25676133	1.04378429	1.51319487
NETO2	0.87877365	0.98059006	0.76225451	1.26146433
CRTAC1	0.00392203	1.5690971	1.15532245	2.13106367
FOXC1	0.77142449	0.97472839	0.82013626	1.15846048
DIO2	0.37901001	1.08992675	0.89966017	1.32043227
NID2	0.43900242	1.09475533	0.87044375	1.37687156
MIF	0.22312217	0.87289915	0.70143327	1.08627999
MMP10	0.75970906	1.02645461	0.86831007	1.21340186
COL4A2	0.33959936	1.10632847	0.89911642	1.36129498
MSX1	0.2684191	0.87684817	0.69477561	1.10663458
AGT	0.02241397	1.16207223	1.02149696	1.32199304
TM6SF2	0.72721607	0.9638293	0.78361411	1.18549029
ADAMTSL2	0.30475322	1.11331202	0.90696449	1.3666066
NOS3	0.25175718	1.18769131	0.8850155	1.59388242
OXTR	0.03034988	1.48851165	1.03847523	2.13357707

Table S2 (continued)

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Gene	P value	HR	Low 95% CI	High 95% CI
<i>GDPD2</i>	0.41534188	1.12008128	0.85259473	1.47148702
<i>COMP</i>	0.00400106	1.16217071	1.04911058	1.28741505
<i>TNNC1</i>	0.49237205	1.05731598	0.90178705	1.2396686
<i>PLS3</i>	0.12594973	1.27242598	0.93458682	1.73238896
<i>ENG</i>	0.1282404	1.22179058	0.94383971	1.58159506
<i>CYB5A</i>	0.17522309	0.77861208	0.54223989	1.11802319
<i>TBX10</i>	0.88747945	0.98106676	0.75284906	1.27846607
<i>WNT5A</i>	0.13497299	1.16690347	0.95309919	1.42866946
<i>HES4</i>	0.11921884	1.16339139	0.96171405	1.4073617
<i>EMP1</i>	0.24858925	1.11636108	0.92597122	1.34589718
<i>NKD2</i>	0.40623078	0.93756675	0.80525139	1.09162357
<i>ICAM3</i>	0.33670332	1.15228201	0.86291909	1.53867708
<i>ADAMTS9</i>	0.52613794	1.10024334	0.81886376	1.47831113
<i>GATA5</i>	0.00629847	1.17607841	1.0468907	1.32120806
<i>RBKS</i>	0.52761679	0.84276622	0.49565678	1.43295708
<i>SLC28A2</i>	0.34700519	1.0590472	0.93969747	1.19355539
<i>PSD4</i>	0.79836588	1.04262999	0.7568874	1.43624705
<i>TESK2</i>	0.38334046	0.8262369	0.53793738	1.26904626
<i>DPYSL2</i>	0.87572908	1.02061674	0.79029198	1.31806795
<i>HIST3H2A</i>	0.35262419	0.92439252	0.78317966	1.09106706
<i>ADH4</i>	0.11715351	1.11259696	0.97358414	1.27145866
<i>LRRC32</i>	0.0111805	1.27896772	1.05756049	1.546728
<i>TM4SF18</i>	0.43205563	0.87390282	0.62436188	1.22317866
<i>FSTL3</i>	0.05577273	1.16727347	0.99619414	1.36773275
<i>BMPR2</i>	0.02754286	1.52028288	1.04742781	2.20660557
<i>CDH5</i>	0.68685839	1.05284347	0.81965643	1.35237075
<i>LUM</i>	0.14615021	1.1192659	0.96147678	1.30294999
<i>ACE2</i>	0.33202725	1.07855791	0.92572759	1.2566193
<i>CAT</i>	0.54060353	0.90870262	0.6687189	1.23480951
<i>MCOLN2</i>	0.6794693	0.92920896	0.65593156	1.31634052
<i>CREB3L3</i>	0.10766477	1.11577128	0.97637053	1.2750749
<i>TGFBI</i>	0.63530008	0.95998672	0.81091668	1.13646016
<i>IGFBP7</i>	0.04813965	1.21907338	1.00162218	1.48373301
<i>SH3PXD2B</i>	0.27745434	1.14247435	0.89836563	1.4529136

Table S2 (continued)

Table S2 (continued)

Gene	P value	HR	Low 95% CI	High 95% CI
<i>SULT1B1</i>	0.92713428	0.99335242	0.86103904	1.14599801
<i>GJA4</i>	0.18643645	1.1810521	0.92269775	1.51174539
<i>TMEM147</i>	0.49025722	0.8907499	0.64123168	1.2373615
<i>UBTD1</i>	0.12467599	1.26545518	0.93698011	1.70908304
<i>SRPX2</i>	0.02560073	1.28606148	1.03116003	1.60397423
<i>COL15A1</i>	0.83609672	1.01914003	0.85158941	1.21965633
<i>KCNJ2</i>	0.00227992	0.56969165	0.39688875	0.81773186
<i>CLC</i>	0.51502974	0.92948388	0.74581571	1.15838306
<i>TMEM37</i>	1.66E-05	1.45694392	1.22761785	1.72910941
<i>INHBB</i>	0.9192167	1.00755374	0.87118316	1.16527107
<i>NNMT</i>	0.00599303	1.26427618	1.06957	1.49442698
<i>DDAH2</i>	0.45743006	1.09202212	0.86574917	1.37743394
<i>CLEC11A</i>	0.12792356	1.1641382	0.95725113	1.41573898
<i>POU2AF1</i>	0.3765287	1.0760477	0.9147047	1.26584968
<i>PTGER4</i>	0.37792999	0.90774036	0.73200626	1.12566328
<i>IFITM2</i>	0.76375894	0.9714744	0.80439166	1.17326242
<i>BRSK1</i>	0.02340012	1.48236231	1.05473417	2.08336668
<i>FSTL1</i>	0.1923852	1.13508419	0.93818931	1.37330079
<i>ITGBL1</i>	0.1915254	1.13662299	0.93789849	1.37745378
<i>LDB2</i>	0.09855331	1.30462199	0.95162061	1.78856838
<i>SLC4A2</i>	0.24589488	0.821566	0.58947759	1.14503199
<i>YAP1</i>	0.35212766	0.86040435	0.62684279	1.18099091
<i>PLVAP</i>	0.21166549	1.16640424	0.91611001	1.48508239
<i>CTSK</i>	0.23537262	1.11429035	0.93190371	1.33237263
<i>CALCRL</i>	0.7580227	1.03797552	0.81885369	1.31573345
<i>THBS1</i>	0.07713538	1.14138423	0.98570778	1.32164723
<i>PCDH18</i>	0.34052356	1.13470399	0.87503458	1.47143117
<i>LAMC1</i>	0.07675353	1.22631439	0.97832261	1.53716879
<i>EDNRA</i>	0.17706792	1.15631101	0.9364623	1.42777254
<i>PCOLCE</i>	0.26638011	1.11102229	0.92276893	1.33768106
<i>SLC6A8</i>	0.75788287	0.97546576	0.83295389	1.1423603
<i>PLEKHA4</i>	0.00150854	1.39452068	1.13557173	1.7125188
<i>TMEM119</i>	0.01621229	1.23541716	1.03982866	1.46779524
<i>FCER2</i>	0.01272939	1.23551191	1.0461342	1.45917195

Table S2 (continued)

Table S2 (continued)

Gene	P value	HR	Low 95% CI	High 95% CI
<i>SLC7A9</i>	0.98807551	0.99864621	0.83609788	1.19279605
<i>CHP2</i>	0.31773205	0.93292272	0.81412813	1.06905137
<i>GLRX</i>	0.72395889	0.94943652	0.7118871	1.26625375
<i>GREM1</i>	0.09947906	1.09998175	0.9820812	1.23203646
<i>PTP4A3</i>	0.34172254	0.90775414	0.74356965	1.10819153
<i>NOTUM</i>	0.6895214	0.9832378	0.90498545	1.06825647
<i>MGP</i>	0.05248828	1.11495664	0.99883028	1.24458413
<i>AEBP1</i>	0.02646637	1.18325482	1.01985759	1.37283085