

Supplementary Table 5: Cancer driver genes and enrichment results of the smoking subnetwork ranked by number of modules each driver gene is participating in.

Regulators

	M11_BLCA	M65_BLCA	M15_BRCA	M46_COADREAD	M27_HNSC	M41_HNSC	M57_HNSC	M10_LUAD	M72_LUAD	M64_LUSC	M99_LUSC	M71_LUSC	M72_OV	M60_UCEC	M97_UCEC	# regulated modules
GPX2	1	1	0	0	1	0	1	1	0	1	1	0	0	0	1	8
ABCB6	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	3
SLC7A11	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	3
CYP4F3	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	3
GPC1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2
CBR1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
NQO1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
ZNF323	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
UBXN10	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	2
AKR1B1	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	2
ME1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	2
RTT1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	2
SLC47A2	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	2
UCHL1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	2
GSR	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2
ABCC2	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2
KIAA1324	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
SPATA18	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
CAPS	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
AKR1B10	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2
ABHD4	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2
CYP4F11	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2
SOST	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2

Gene enrichment

Gene set	M11_BLCA	M65_BLCA	M15_BRCA	M46_COADREAD	M27_HNSC	M41_HNSC	M57_HNSC	M10_LUAD	M72_LUAD	M64_LUSC	M99_LUSC	M71_LUSC	M72_OV	M60_UCEC	M97_UCEC	# significant enrichments	Averaged p-value
NFE2L2.V2	2.95E-14	0.1205776	1	1	8.51E-12	1	1	1.05E-18	1	4.43E-02	8.39E-27	2.88E-07	1	1	4.25E-07	7	1.44E-02
17115125-SuppTable2	1.50E-14	1	1	1	4.25E-14	1	1	4.00E-20	1	1.97E-05	3.44E-16	1	1	1	2.50E-09	6	3.29E-06
17115125-SuppTable4	5.39E-09	1	1	1	1.35E-06	1	1	3.54E-11	1	2.86E-06	1	1	1	1	8.15E-03	5	8.45E-07
19334046-Table3a	8.54E-09	1	1	1	2.00E-06	1	1	5.71E-13	1	1	1	2.42E-05	1	1	4.06E-10	5	5.24E-06
OXIDOREDUCTASE_ACTIVITY	1.88E-05	1	1	1	3.63E-05	1	1	3.66E-08	1	1	7.69E-07	1	1	1	9.32E-07	5	1.14E-05
17115125-SuppTable6	7.25E-07	1	1	1	1	1	1	3.36E-09	1	2.68E-06	1	1	1	1	2.36E-10	4	8.51E-07
ONDER_CDH1_TARGETS_1_UP	1.07E-05	1	1	1	1.86E-05	1	1	3.24E-04	1	1	2.32E-04	1	1	1	1	4	1.46E-04
HALLMARK_XENOBIOTIC_METABOLISM	9.09E-05	1	1	1	2.80E-06	1	1	2.68E-03	1	1	2.86E-08	1	1	1	1	4	6.95E-04
16491124-SuppTable1	1	1	1	1	7.57E-04	1	1	1	1	1	1	1	1.05E-04	1.67E-05	1	3	2.93E-04
19204204-SupplementaryTable2	1	1	0.13208818	0.828638008	7.09E-06	2.22E-03	1	1	1	1	1	1	1	3.19E-04	1	3	6.49E-02
DOANE_BREAST_CANCER_ESR1_UP	1	1	1	7.18E-04	1	1	1	1	1	1	1	1	9.96E-05	1.57E-05	1	3	2.78E-04
KAN_RESPONSE_TO_ARSENIC_TRIOXIDE	4.87E-06	1	1	1	8.48E-06	1	1	1.49E-04	1	1	1	1	1	1	1	3	5.41E-05
WOOD_EBV_EBNA1_TARGETS_UP	2.47E-06	1	1	1	1	1	1	7.61E-05	1	1	8.45E-07	1	1	1	1	3	2.65E-05
19306436-Table2b	1	1	1.33E-02	3.02E-04	1	1	1	1	1	1	1	1	1	1	1	2	6.82E-03
16115903-TableS1	1	1	1	1.28E-02	1	1	1	1	1	1	1	1	1.33E-03	1	1	2	7.07E-03
17115125-SuppTable3	8.99E-11	1	1	1	1	1	1	1.48E-14	1	1	1	1	1	1	1	2	4.50E-11
19489030-SuppTable4	1.55E-05	1	1	1	1	1	1	1	1	2.62E-11	1	1	1	1	1	2	7.76E-06
18662380-S3-ESR1	1	1	1	1.14E-04	1	1	1	1	1	1	1	1	2.58E-02	1	1	2	1.86E-02
17603561-S-Table1	1	1	1	1.72E-02	1	1	1	1	1	1	1	1	7.53E-05	1	1	2	8.65E-03
16912175-SuppTable3b	1	1	1	2.01E-04	1	1	1	1	1	1	1	1	1	4.18E-02	1	2	2.10E-02
19204204-SupplementaryTable6	1	1	4.21E-02	1	2.00E-02	1	1	1	1	1	1	1	1	1	1	2	3.11E-02
19204204-SupplementaryTable3	1	1	4.01E-02	1	1.95E-02	1	1	1	1	1	1	1	1	1	1	2	3.02E-02
LIU_PROSTATE_CANCER_DN	1	1	5.86E-03	1	1	1.53E-02	1	1	1	1	1	1	1	1	1	2	1.06E-02
SENGUPTA_NASOPHARYNGEAL_CARCINOMA_DN	1	1	1	2.88E-03	1	1	1	1	1	1	1	1	1	2.49E-03	1	2	2.69E-03
RUTELLA_RESPONSE_TO_HGF_UP	1	1	1	1	1.21E-02	1	1	0.1845591	1	1	8.48E-03	1	1	1	1	2	2.26E-02
RUTELLA_RESPONSE_TO_HGF_VS_CSF2RB_AND_IL4_UP	1	1	1	1	1.05E-02	1	1	0.1610243	1	1	7.22E-03	1	1	1	1	2	1.96E-02
CARBOXYLIC_ACID_METABOLIC_PROCESS	1	1	1	1	1	1	1	1.35E-03	1	1	5.37E-07	1	1	1	1	2	6.75E-04
ORGANIC_ACID_METABOLIC_PROCESS	1	1	1	1	1	1	1	1.44E-03	1	1	5.90E-07	1	1	1	1	2	7.21E-04