

Table S3. Mini-signature of genes that interact with the p53 pathway and associated p-values.

p53 associated genes	TCGA cohort (all breast cancer) Overall Survival (n=1022)	TCGA cohort (TNBC) overall survival (n=119)	San Diego cohort (metastasis free survival) (n=286)	NKI cohort (metastasis free survival) (n=295)	Oxford cohort (metastasis free survival) (n=210)
GDF15	0.618704	0.872751	0.512639	NA	NA
SPATA18	0.931971	0.909813	NA	NA	NA
FAM27A	0.795673	0.738823	NA	NA	NA
BTG2	0.000866	0.125703	0.181338	0.000003	0.000168
CA9	0.429666	0.538078	0.318494	0.001134	0.000787
TP53	0.406990	0.717982	0.892629	0.902928	0.748604
EDA2R	0.003220	0.493069	0.517135	NA	NA
NME1	0.394788	0.386684	0.043214	0.124441	0.020291
NME2	0.017816	0.401633	NA	0.407861	0.164076
TNFRSF1B	0.030622	0.737269	0.014245	0.967189	0.655479
ACTA2	0.128326	0.584963	0.010685	0.759370	0.633141
PRAP1	0.179881	0.469873	NA	NA	NA
DSG3	0.015148	0.281834	0.661268	0.404740	0.734274
EDIL3	0.019433	0.253810	0.138877	0.491648	0.323478
BHLHE41	0.192112	0.463182	0.868209	NA	NA
MMP2	0.744432	0.927997	0.779695	0.607070	0.558907
PCDH7	0.527964	0.473452	0.718918	0.506622	0.990493
THBS1	0.027219	0.234703	0.260597	0.413557	0.092741
PTX3	0.237603	0.747768	0.089691	0.659664	0.746536
SEMA3A	0.472948	0.127119	0.057343	0.955063	0.500024
LUM	0.577808	0.320572	0.436260	0.060627	0.726615
EPHA4	0.527416	0.561032	0.682572	0.121261	0.144562
KRT14	0.002357	0.723528	0.387805	0.700514	0.561103
TNFSF14	0.216639	0.738366	0.820042	0.708935	0.602292
NLRP3	0.276127	0.994360	0.876382	NA	NA
IGFBP7	0.098384	0.903900	0.071742	0.828768	0.605262
SP7	0.071958	0.034029	NA	NA	0.451514
MMP16	0.275221	0.149805	0.475863	0.439643	0.277535
ZACN	0.113341	0.285311	NA	NA	NA
RUNX2	0.190225	0.257235	0.362197	0.901616	0.616612
PAK6	0.046595	0.367752	0.684316	0.669276	0.328800

*Red shading indicates significant p-value