

Supplementary Table 6: (a) Signatures used for validation of GPX2 and correlation results  
 (b) Correlation results of GPX2 expression with smoking clinical data

(a)

**Signatures**

Oxidative gene signature	Xenobiotic metabolism gene signature
ANGPTL7	NCEH1
APOA4	GSTM4
APTX	ACSM2B
ATOX1	AOC1
CCL5	GSTM3
CYGB	MGST2
DGKK	DPEP1
DHCR24	AIP
DUSP1	AS3MT
ERCC1	RORC
ERCC2	UGT1A8
ERCC3	UGT1A10
ERCC6	UGT1A7
ERCC8	GSTO1
GCLC	GGT2
GCLM	UGT2B28
GLRX2	CES1
GPX3	PON3
GSS	GRIN1
IPCEF1	NAT2
MPO	MGST1
MSRA	GSTM2
NDUFA12	ACSM1
NDUFA6	FMO3
NDUFB4	SULT1A2
NDUFS2	SULT1A1
NDUFS8	CYP1A1
NUDT1	PTGS1
OXSRI	UGT2B4
PDLIM1	FMO2
PNKP	ACY3
PRDX2	SULT1B1
PRDX5	EPHX2
PRDX6	ACY1
PRNP	MGST3

RNF7  
S100A7  
SCARA3  
SELS  
SEPP1  
SGK2  
SOD1  
SOD2  
SRXN1  
STK25  
TXNRD2

CYP3A7  
GSTA4  
FMO1  
GSTM1  
CYP2W1  
CYP2C9  
NAT1  
STAR  
SULT1A3  
UGT1A9  
GSTP1  
AKR7A3  
GGT1  
CYP2F1  
AKR1C1  
UGT2B11  
CYP46A1  
CMBL  
UGT1A6  
AADAC  
ALDH3A1  
AOC2  
CYP2A13  
CYP1B1  
AKR7A2  
UGT1A4  
UGT1A1  
GSTO2  
AOC3  
CYP3A4  
CYP2D7  
CYP2E1  
CYP1A2  
AHR  
UGT2B15  
UGT1A5  
UGT1A3  
HNF4A  
RORA  
BPHL  
CYP2C19

CYP2C18  
 CES2  
 POR  
 ACSL1  
 NR1I2  
 CYP2J2  
 CYP2B6  
 GLYAT  
 NQO1  
 CYP2D6  
 CYP2C8  
 AKR7L  
 LPO  
 EPHX1  
 CYP3A5  
 CYP26A1  
 CYP26B1  
 S100A12  
 CRYZ

### Correlations

	Oxidative signature		Xenobiotic signature	
	Correlation	p-value	Correlation	p-value
BLCA	-0.007815478	8.75E-01	<b>0.5368829</b>	<b>1.29E-32</b>
BRCA	<b>0.175857826</b>	<b>4.83E-07</b>	<b>0.2936691</b>	<b>3.50E-22</b>
COADREAD	<b>0.12825616</b>	<b>3.37E-03</b>	<b>0.1633479</b>	<b>1.38E-05</b>
HNSC	<b>0.24393133</b>	<b>1.16E-06</b>	<b>0.6525858</b>	<b>2.05E-64</b>
LUAD	<b>0.422645132</b>	<b>1.98E-20</b>	<b>0.6229901</b>	<b>1.85E-55</b>
LUSC	<b>0.257088866</b>	<b>2.10E-09</b>	<b>0.5053464</b>	<b>2.85E-34</b>
OV	0.040147626	3.51E-01	<b>0.2494615</b>	<b>4.05E-09</b>
UCEC	<b>0.240126434</b>	<b>6.20E-08</b>	<b>0.3462708</b>	<b>1.10E-17</b>

(b)

	Smoking profile		Number of smoked years			Pack years		
	p-value	Percentage of NAs	Correlation	p-value	Percentage of NAs	Correlation	p-value	Percentage of NAs
BLCA	<b>0.05</b>	8%	NA	NA	100%	0.11257321	0.259951146	43%
HNSC	<b>1.50E-08</b>	8%	<b>0.25042771</b>	<b>0.01112927</b>	63%	<b>0.21146548</b>	<b>0.003001313</b>	47%
LUAD	0.26	9%	0.08253822	0.2845951	62%	-0.00863001	0.879323118	36%
LUSC	0.21	18%	0.03909737	0.59127115	68%	-0.03396215	0.528338745	29%