

Table S1 Mutations in tissue samples									
Hugo_Symbol	Frame_Shift_Del	Frame_Shift_Ins	In_Frame_Del	In_Frame_Ins	Missense_Mutation	Nonsense_Mutation	Splice_Site	Total	Mutated Samples
TP53	1	0	0	0	12	2	0	15	14
EGFR	0	0	5	1	4	0	0	10	8
LRP1B	0	0	0	0	7	2	0	9	6
KRAS	0	0	0	0	6	0	0	6	5
ARID1A	1	0	0	0	2	1	0	4	4
ERBB4	0	0	0	0	4	0	0	4	4
RB1	1	1	0	0	0	2	0	4	4
EPHA7	0	0	0	0	2	1	0	3	3
KEAP1	0	0	0	0	3	0	0	3	3
KMT2D	1	0	0	0	2	0	0	3	3
NOTCH1	0	0	0	0	3	0	0	3	3
PIK3CA	0	0	0	0	3	0	0	3	3
PTPRT	0	0	0	0	3	0	0	3	3
KDR	0	0	0	0	2	1	0	3	2
ASXL1	0	0	0	0	2	0	0	2	2
BRAF	1	0	0	0	1	0	0	2	2
BRCA2	0	0	0	0	2	0	0	2	2
CARD11	0	0	0	0	2	0	0	2	2
EP300	0	0	0	0	2	0	0	2	2
ERCC4	0	0	0	0	2	0	0	2	2
FAT1	0	0	0	0	2	0	0	2	2
FLT1	0	0	0	0	2	0	0	2	2
HGF	0	0	0	0	2	0	0	2	2
KMT2C	0	0	0	0	1	1	0	2	2
LATS1	0	0	0	0	2	0	0	2	2
MYC	0	0	0	0	2	0	0	2	2
NF1	0	0	0	0	1	1	0	2	2
NTRK1	0	0	0	0	1	1	0	2	2
PREX2	0	0	0	0	2	0	0	2	2
PTEN	0	0	0	0	1	1	0	2	2
PTPRS	0	0	0	0	2	0	0	2	2
STK11	1	0	0	0	1	0	0	2	2
BRCA1	0	0	0	0	2	0	0	2	1
ROS1	0	0	0	0	2	0	0	2	1
AGO2	0	0	0	0	1	0	0	1	1
AMER1	0	0	0	0	1	0	0	1	1
ARID1B	0	0	0	0	1	0	0	1	1
ARID2	0	0	0	0	1	0	0	1	1
ASXL2	0	0	0	0	1	0	0	1	1
ATR	0	0	0	0	1	0	0	1	1
ATRX	0	0	0	0	1	0	0	1	1
BCL6	0	0	0	0	1	0	0	1	1
BCOR	0	0	0	0	1	0	0	1	1
BRD4	0	0	0	0	1	0	0	1	1
BRIP1	0	0	0	0	1	0	0	1	1
CARM1	0	0	0	0	1	0	0	1	1
CDKN2A	1	0	0	0	0	0	0	1	1
CIC	0	0	0	0	1	0	0	1	1
CTNNB1	0	0	0	0	1	0	0	1	1
CUL3	0	0	0	0	1	0	0	1	1
DOT1L	0	1	0	0	0	0	0	1	1
E2F3	0	0	0	0	1	0	0	1	1
EPHA3	0	0	0	0	1	0	0	1	1
EPHA5	0	0	0	0	1	0	0	1	1
ERBB3	0	0	0	0	1	0	0	1	1
ERCC3	0	0	0	0	0	1	0	1	1
ERCC5	0	0	0	0	1	0	0	1	1
ETV6	0	0	0	0	1	0	0	1	1
FGF10	0	0	0	0	1	0	0	1	1
FGF12	0	0	0	0	1	0	0	1	1
FGF23	0	0	0	0	1	0	0	1	1
FGFR3	0	0	0	0	1	0	0	1	1
FLT4	0	0	0	0	1	0	0	1	1
FOXL2	1	0	0	0	0	0	0	1	1
GATA4	0	0	0	0	1	0	0	1	1
GLI1	0	0	0	0	1	0	0	1	1
HIST1H3C	0	0	0	0	1	0	0	1	1
IGF2	0	0	0	0	1	0	0	1	1
IRS2	0	0	0	0	1	0	0	1	1
JUN	0	0	0	0	1	0	0	1	1
KEL	0	0	0	0	1	0	0	1	1
KLF4	0	0	0	0	1	0	0	1	1
MAP3K13	0	0	0	0	1	0	0	1	1
MCL1	0	0	0	0	1	0	0	1	1
MET	0	0	0	0	1	0	0	1	1
MGA	0	0	0	0	1	0	0	1	1
MSH2	0	0	0	0	1	0	0	1	1
MSH3	0	0	0	0	1	0	0	1	1
MSI2	0	0	0	0	1	0	0	1	1
MST1	0	0	0	0	1	0	0	1	1
MTOR	0	0	0	0	1	0	0	1	1
NCOR1	1	0	0	0	0	0	0	1	1
NRAS	0	0	0	0	1	0	0	1	1
NSD1	0	0	0	0	1	0	0	1	1
NUP93	0	0	0	0	1	0	0	1	1
PARP1	0	0	0	0	0	0	1	1	1
PGR	0	0	0	0	1	0	0	1	1
PHOX2B	0	0	1	0	0	0	0	1	1
PIK3C2G	0	0	0	0	1	0	0	1	1
POLD1	0	0	0	0	1	0	0	1	1
PRKAR1A	0	0	0	0	0	1	0	1	1
PRKCI	0	0	0	0	0	1	0	1	1
RAD51D	0	0	0	0	1	0	0	1	1
RAF1	0	0	0	0	1	0	0	1	1
RASA1	0	0	0	0	1	0	0	1	1
RECQL4	0	0	0	0	1	0	0	1	1
RET	0	0	0	0	1	0	0	1	1
RPTOR	0	0	0	0	1	0	0	1	1
SDHA	0	0	0	0	1	0	0	1	1
SDHAF2	0	0	0	0	1	0	0	1	1
SESN1	0	0	0	0	1	0	0	1	1
SESN3	0	0	0	0	1	0	0	1	1
SGK1	0	0	1	0	0	0	0	1	1
SHOC2	0	0	0	0	1	0	0	1	1
SNCAIP	0	0	0	0	1	0	0	1	1
SOS1	0	0	0	0	1	0	0	1	1
SOX2	0	0	0	0	1	0	0	1	1
TCF3	0	0	0	0	1	0	0	1	1
TERT	0	0	0	0	1	0	0	1	1
TGFBR2	0	0	0	0	1	0	0	1	1
VTCN1	0	0	0	0	1	0	0	1	1
WWTR1	0	0	0	0	1	0	0	1	1
ZFHX3	0	0	0	0	1	0	0	1	1
ZNF217	0	0	0	0	1	0	0	1	1

Table S2 Mutations in ctDNA samples

Hugo_Symbol	Frame_Shift_Del	Frame_Shift_Ins	In_Frame_Del	In_Frame_Ins	Missense_Mutation	Nonsense_Mutation	Splice_Site	Total	Mutated Samples
TP53	1	0	0	0	7	1	1	10	9
EGFR	0	0	2	0	3	0	0	5	5
LRP1B	0	0	0	1	4	0	0	5	3
ERBB4	0	0	0	0	3	0	0	3	3
ARID1A	0	0	1	0	1	0	0	2	2
ARID1B	0	0	0	0	2	0	0	2	2
BRCA1	0	0	0	0	1	1	0	2	2
EPHA5	0	0	0	0	2	0	0	2	2
EPHA7	0	0	0	0	2	0	0	2	2
KRAS	0	0	0	0	2	0	0	2	2
PRKD1	0	0	0	0	2	0	0	2	2
PTEN	0	0	0	0	2	0	0	2	2
RECQL4	0	0	0	0	2	0	0	2	2
TSHR	0	0	1	0	1	0	0	2	2
STAG2	0	0	0	0	1	2	0	3	1
ALK	0	0	0	0	2	0	0	2	1
KDR	0	0	0	0	1	1	0	2	1
RB1	0	1	0	0	0	1	0	2	1
ABL1	0	0	0	0	1	0	0	1	1
AGO2	0	0	0	0	1	0	0	1	1
AMER1	0	0	0	0	1	0	0	1	1
AR	0	0	0	0	1	0	0	1	1
ARID2	0	0	0	0	0	1	0	1	1
ASXL1	0	0	0	0	1	0	0	1	1
BCL6	1	0	0	0	0	0	0	1	1
BCOR	1	0	0	0	0	0	0	1	1
BRAF	0	0	0	0	1	0	0	1	1
BRCA2	0	0	0	0	1	0	0	1	1
CDKN1A	0	0	0	0	1	0	0	1	1
CREBBP	0	0	0	0	0	1	0	1	1
CTNNB1	0	0	0	0	1	0	0	1	1
CYSLTR2	0	0	0	0	1	0	0	1	1
E2F3	0	0	0	0	1	0	0	1	1
ELF3	0	0	0	0	1	0	0	1	1
ERBB2	0	0	0	0	1	0	0	1	1
ETV6	0	0	0	0	1	0	0	1	1
FANCL	0	0	0	0	1	0	0	1	1
FGF12	0	0	0	0	1	0	0	1	1
FLT1	0	0	0	0	1	0	0	1	1
FOXP1	0	0	0	0	1	0	0	1	1
HGF	0	0	0	0	1	0	0	1	1
HOXB13	0	0	0	0	1	0	0	1	1
IRS2	0	0	0	0	1	0	0	1	1
KDM6A	0	0	0	0	0	1	0	1	1
KEAP1	0	0	0	0	1	0	0	1	1
KMT2B	0	0	0	0	1	0	0	1	1
KMT2D	0	0	0	0	1	0	0	1	1
LTK	0	0	0	0	1	0	0	1	1
MET	0	0	0	0	1	0	0	1	1
MGA	0	0	0	0	1	0	0	1	1
MYC	0	0	0	0	1	0	0	1	1
MYCN	0	0	0	0	0	1	0	1	1
NCOR1	1	0	0	0	0	0	0	1	1
NF1	0	0	0	0	0	1	0	1	1
NOTCH3	0	0	0	0	1	0	0	1	1
PARP1	0	0	0	0	0	0	1	1	1
PHOX2B	0	0	1	0	0	0	0	1	1
PIK3CG	0	0	0	0	1	0	0	1	1
POLD1	0	0	0	0	1	0	0	1	1
PRKCI	0	0	0	0	0	1	0	1	1
PTPN11	0	0	0	0	1	0	0	1	1
RAF1	0	0	0	0	1	0	0	1	1
RASA1	0	0	0	0	1	0	0	1	1
RET	0	0	0	0	1	0	0	1	1
SF3B1	0	0	0	0	1	0	0	1	1
SOS1	0	0	0	0	1	0	0	1	1
SOX17	0	1	0	0	0	0	0	1	1
SPEN	0	0	0	0	1	0	0	1	1
SRC	0	0	0	0	0	1	0	1	1
STAT5A	0	0	0	0	1	0	0	1	1
STK11	0	0	0	0	1	0	0	1	1
SUZ12	0	0	0	0	1	0	0	1	1
TCF3	0	0	0	0	1	0	0	1	1
TERT	0	0	0	0	1	0	0	1	1
TNFRSF14	0	0	0	0	1	0	0	1	1
TP53BP1	0	0	0	0	1	0	0	1	1
XPO1	0	0	0	0	1	0	0	1	1
ZFHX3	0	0	0	0	1	0	0	1	1