

SUPPLEMENTARY TABLE 1

Co-existing mutations in different genes

Multiple gene mutations in KRAS mutated tumors	
Type of mutations	n
KRAS only (no other mutation detected)	99
KRAS + TP53	62
KRAS + PIK3CA	31
KRAS + PTEN	4
KRAS + FBXW7	4
KRAS + STK11	2
KRAS + AKT1	2
KRAS + SMAD4	2
KRAS + EGFR	2
KRAS + BRAF	1
KRAS + ERBB2	1
KRAS + CTNNB1	1
KRAS + PIK3CA + TP53	10
KRAS + FBXW7 + TP53	6
KRAS + PIK3CA + FBXW7	3
KRAS + PIK3CA + BRAF	1
KRAS + PIK3CA + EGFR	1
KRAS + PIK3CA + PTEN	1
KRAS + PIK3CA + ERBB2	1
KRAS + FBXW7 + EGFR	1
KRAS + FBXW7 + AKT1	1
KRAS + BRAF + TP53	1
KRAS + PTEN + TP53	1
KRAS + TP53 + SMAD4	1
KRAS + CTNNB1 + PIK3CA + FBXW7	2
KRAS + CTNNB1 + PIK3CA + TP53	1
KRAS + PIK3CA + FBXW7 + TP53	1
KRAS + BRAF + FBXW7 + TP53	1
KRAS + ERBB4 + PIK3CA + FBXW7 + TP53	1
KRAS + ERBB4 + PIK3CA + EGFR + TP53	1
KRAS + + ERBB4 + PIK3CA + NOTCH1 + PTEN + TP53	1
Total KRAS mutated cases	247
4 tumor had two concomitant KRAS mutations	

Multiple gene mutations in TP53 mutated tumors	
Type of mutations	n
TP53 only (no other mutation detected)	103
TP53 + KRAS	62
TP53 + NRAS	13
TP53 + PIK3CA	10
TP53 + BRAF	10
TP53 + FBXW7	3

TP53 + PTEN	2
TP53 + EGFR	1
TP53 + ALK	1
TP53 + STK11	1
TP53 + PIK3CA + KRAS	10
TP53 + FBXW7 + KRAS	6
TP53 + PIK3CA + NRAS	1
TP53 + NRAS + PTEN	1
TP53 + CTNNB1 + BRAF	1
TP53 + BRAF + KRAS	1
TP53 + BRAF + PTEN	1
TP53 + EGFR + AKT1	1
TP53 + PTEN + KRAS	1
TP53 + PTEN + SMAD4	1
TP53 + KRAS + SMAD4	1
TP53 + ERBB2 + SMAD4	1
TP53 + PIK3CA + FBXW7 + KRAS	1
TP53 + NRAS + PIK3CA + BRAF	1
TP53 + PIK3CA + CTNNB1 + KRAS	1
TP53 + FBXW7 + BRAF + SMAD4	1
TP53 + FBXW7 + BRAF + KRAS	1
TP53 + ERBB4 + PIK3CA + FBXW7 + KRAS	1
TP53 + ERBB4 + PIK3CA + EGFR + KRAS	1
TP53 + ERBB4 + PIK3CA + NOTCH1 + PTEN + KRAS	1
Total TP53 mutated cases	240
5 tumor had two concomitant TP53 mutations	

Multiple gene mutations in PIK3CA mutated tumors	
Type of mutations	n
PIK3CA only (no other mutation detected)	15
PIK3CA + KRAS	31
PIK3CA + TP53	10
PIK3CA + BRAF	7
PIK3CA + NRAS	3
PIK3CA + FBXW7	2
PIK3CA + PTEN	1
PIK3CA + MAP2K1	1
PIK3CA + KRAS + TP53	10
PIK3CA + FBXW7 + KRAS	3
PIK3CA + BRAF + CTNNB1	1
PIK3CA + NRAS + PIK3CA	1
PIK3CA + FBXW7 + BRAF	1
PIK3CA + BRAF + KRAS	1
PIK3CA + EGFR + KRAS	1
PIK3CA + PTEN + KRAS	1
PIK3CA + KRAS + ERBB2	1
PIK3CA + CTNNB1 + FBXW7 + KRAS	2
PIK3CA + NRAS + BRAF + TP53	1

PIK3CA + CTNNB1 + KRAS + TP53	1
PIK3CA + FBXW7 + KRAS + TP53	1
PIK3CA + ERBB4 + FBXW7 + KRAS + TP53	1
PIK3CA + ERBB4 + EGFR + KRAS + TP53	1
PIK3CA + ERBB4 + NOTCH1 + PTEN + KRAS + TP53	1
Total PIK3CA mutated cases	98
1 tumor had two concomitant PIK3CA mutations	

Multiple gene mutations in BRAF mutated tumors	
Type of mutations	n
BRAF only (no other mutation detected)	26
BRAF + TP53	10
BRAF + PIK3CA	7
BRAF + FBXW7	5
BRAF + PTEN	2
BRAF + SMAD4	1
BRAF + KRAS	1
BRAF + CTNNB1	1
BRAF + PIK3CA + FBXW7	1
BRAF + CTNNB1 + TP53	1
BRAF + PIK3CA + CTNNB1	1
BRAF + KRAS + PIK3CA	1
BRAF + PTEN + SMAD4	1
BRAF + PTEN + TP53	1
BRAF + KRAS + TP53	1
BRAF + NRAS + PIK3CA + TP53	1
BRAF + FBXW7 + SMAD4 + TP53	1
BRAF + FBXW7 + KRAS + TP53	1
Total BRAF mutated cases	63

Multiple gene mutations in FBXW7 mutated tumors	
Type of mutations	n
FBXW7 only (no other mutation detected)	7
FBXW7 + BRAF	5
FBXW7 + KRAS	4
FBXW7 + TP53	3
FBXW7 + PIK3CA	2
FBXW7 + KRAS + TP53	6
FBXW7 + PIK3CA + KRAS	3
FBXW7 + PIK3CA + BRAF	1
FBXW7 + EGFR + KRAS	1
FBXW7 + KRAS + AKT1	1
FBXW7 + CTNNB1 + PIK3CA + KRAS	2
FBXW7 + PIK3CA + KRAS + TP53	1
FBXW7 + BRAF + TP53 + SMAD4	1

FBXW7 + KRAS + BRAF + TP53	1
FBXW7 + ERBB4 + PIK3CA + KRAS + TP53	1
Total FBXW7 mutated cases	39

Multiple gene mutations in NRAS mutated tumors	
Type of mutations	n
NRAS only (no other mutation detected)	11
NRAS + TP53	13
NRAS + PIK3CA	3
NRAS + PIK3CA + TP53	1
NRAS + PTEN + TP53	1
NRAS + PIK3CA + BRAF + TP53	1
Total NRAS mutated cases	30

Multiple gene mutations in PTEN mutated tumors	
Type of mutations	n
PTEN only (no other mutation detected)	2
PTEN + KRAS	4
PTEN + BRAF	2
PTEN + TP53	2
PTEN + PIK3CA	1
PTEN + KRAS + TP53	1
PTEN + BRAF + SMAD4	1
PTEN + PIK3CA + KRAS	1
PTEN + NRAS + TP53	1
PTEN + BRAF + TP53	1
PTEN + TP53 + SMAD4	1
PTEN + ERBB4 + PIK3CA + NOTCH1 + KRAS + TP53	1
Total PTEN mutated cases	18

Multiple gene mutations in SMAD4 mutated tumors	
Type of mutations	n
SMAD4 only (no other mutation detected)	5
SMAD4 + KRAS	2
SMAD4 + BRAF	1
SMAD4 + AKT1	1
SMAD4 + BRAF + PTEN	1
SMAD4 + ERBB2 + TP53	1
SMAD4 + PTEN + TP53	1
SMAD4 + KRAS + TP53	1
SMAD4 + FBXW7 + BRAF + TP53	1
Total SMAD4 mutated cases	14

Multiple gene mutations in EGFR mutated tumors	
Type of mutations	n
EGFR only (no other mutation detected)	1
EGFR + KRAS	2
EGFR + TP53	1
EGFR + PIK3CA + KRAS	1
EGFR + AKT1 + TP53	1
EGFR + KRAS + FBXW7	1
EGFR + ERBB4 + PIK3CA + KRAS + TP53	1
Total EGFR mutated cases	8

Multiple gene mutations in CTNNB1 mutated tumors	
Type of mutations	n
CTNNB1 only (no other mutation detected)	0
CTNNB1 + BRAF	1
CTNNB1 + KRAS	1
CTNNB1 + BRAF + TP53	1
CTNNB1 + PIK3CA + BRAF	1
CTNNB1 + PIK3CA + FBXW7 + KRAS	2
CTNNB1 + PIK3CA + KRAS + TP53	1
Total CTNNB1 mutated cases	7

Multiple gene mutations in AKT1 mutated tumors	
Type of mutations	n
AKT1 only (no other mutation detected)	1
AKT1 + KRAS	2
AKT1 + SMAD4	1
AKT1 + EGFR + TP53	1
AKT1 + FBXW7 + KRAS	1
Total AKT1 mutated cases	6

Multiple gene mutations in STK11 mutated tumors	
Type of mutations	n
STK11 only (no other mutation detected)	2
STK11 + KRAS	2
STK11 + TP53	1
Total STK11 mutated cases	5

Multiple gene mutations in ERBB4 mutated tumors	
Type of mutations	n
ERBB4 only (no other mutation detected)	1
ERBB4 + PIK3CA + FBXW7 + KRAS + TP53	1
ERBB4 + PIK3CA + EGFR + KRAS + TP53	1
ERBB4+ PIK3CA + NOTCH1 + PTEN + KRAS + TP53	1
Total ERBB4 mutated cases	4

Multiple gene mutations in ERBB2 mutated tumors	
Type of mutations	n
ERBB2 only (no other mutation detected)	1
ERBB2 + KRAS	1
ERBB2 + TP53 + SMAD4	1
ERBB2 + PIK3CA + KRAS	1
Total ERBB2 mutated cases	4

Multiple gene mutations in NOTCH1 mutated tumors	
Type of mutations	n
NOTCH1 only (no other mutation detected)	0
NOTCH1 + ERBB4 + PIK3CA + PTEN + KRAS + TP53	1
Total NOTCH1 mutated cases	1

Multiple gene mutations in ALK mutated tumors	
Type of mutations	n
ALK only (no other mutation detected)	0
ALK + TP53	1
Total ALK mutated cases	1

Multiple gene mutations in MAP2K1 mutated tumors	
Type of mutations	n
MAP2K1 only (no other mutation detected)	0
MAP2K1 + PIK3CA	1
Total MAP2K1 mutated cases	1