

Supplemental Table 1. Specific PCR primers for detection of hotspot mutation

SNP	Gene	Mutation	PCR Primer
rs121913530	<i>KRAS</i>	<i>G12R</i> and <i>G12S</i>	1st: ACGTTGGATGAGGCCTGCTGAAAATGACTG 2nd: ACGTTGGATGTAGCTGTATCGTCAAGGCAC
rs121913529	<i>KRAS</i>	<i>G12V</i> and <i>G12D</i>	1st: ACGTTGGATGAGGCCTGCTGAAAATGACTG 2nd: ACGTTGGATGTAGCTGTATCGTCAAGGCAC
rs112445441	<i>KRAS</i>	<i>G13D</i>	1st: ACGTTGGATGTAGCTGTATCGTCAAGGCAC 2nd: ACGTTGGATGAGGCCTGCTGAAAATGACTG
rs17851045	<i>KRAS</i>	<i>Q61H</i>	1st: ACGTTGGATGTGGAGAAACCTGTCTCTTGG 2nd: ACGTTGGATGTACACAAAGAAAGCCCTCCC
rs121913240	<i>KRAS</i>	<i>Q61R</i>	1st: ACGTTGGATGTACACAAAGAAAGCCCTCCC 2nd: ACGTTGGATGTGGAGAAACCTGTCTCTTGG
rs1057519725	<i>KRAS</i>	<i>A146V</i>	1st: ACGTTGGATGTTTCAGTGTTACTTACCTGTC 2nd: ACGTTGGATGAGACACAAAACAGGCTCAGG
rs11554273	<i>GNAS</i>	<i>R201C</i> and <i>R201S</i>	1st: ACGTTGGATGCTTTGTCCACCTGGA ACTTG 2nd: ACGTTGGATGGGCTTTGGTGAGATCCATTG
rs121913495	<i>GNAS</i>	<i>R201H</i>	1st: ACGTTGGATGGGCTTTGGTGAGATCCATTG 2nd: ACGTTGGATGCTTTGTCCACCTGGA ACTTG

SNP: Single nucleotide polymorphism

PCR: Polymerase Chain Reaction

Supplemental Table 2. Unextension primers for different hotspot mutations and call the base according to different total mass

Gene	SNP	Mutation	UEP Direction	UEP Mass	UEP Sequence	Base Call	Total Mass
KRAS	rs121913530	<i>G12R</i> and <i>G12S</i>	F	5355.5	ccaTCTTGCC TACGCCAC	C	5602.7
						A	5626.7
						G	5642.7
						T	5682.6
	rs1057519725	<i>A146V</i>	R	6683.4	ATTCCTTTT ATTGAAAC ATCAG	G	6930.6
						A	7010.5
	rs17851045	<i>Q61H</i>	F	5096.3	ATTGCACT GTACTCCT C	G	5383.5
						T	5423.4
	rs112445441	<i>G13D</i>	R	5297.4	cGTAGTTGG AGCTGGTG	T	5568.6
						C	5584.6
rs121913240	<i>Q61R</i>	R	6062.9	cctgCTCGAC ACAGCAGG TC	T	6334.2	
					C	6350.2	
rs121913529	<i>G12V</i> and <i>G12D</i>	F	5355.5	accCTCTTGC CTACGCCA	C	5602.7	
					A	5626.7	
					G	5642.7	
					T	5682.6	
GNAS	rs11554273	<i>R201C</i> and <i>R201S</i>	F	5162.4	AGGACCTG CTTCGCTG C	C	5409.5
						A	5433.6
						T	5489.5
	rs121913495	<i>R201H</i>	R	6470.2	ttggTTCCAG AAGTCAGG ACA	G	6717.4
					A	6797.3	

SNP: Single nucleotide polymorphism

UEP: Unextension primer