

Additional file 17: Oligonucleotide primers.

Oligo Names	Application	Sequence
upcuh_f	Knockout	ATGCTACTGAAGGATCTCGAAGATGCCTTACA AGGATATCAAACGAGGAAAGAAGCGCCAGAG AGCACGAGAAGAGTTTTCGGTAACGCCAGGGT TTTCCC
upcuh_r	Knockout	GTTGATAAACCCCTTGATCTCCTTGCATTATATC CAACTCTCTTGTAATATCACTCGGTAAATTATT AGTATTGGTCATTTAAACAGCTATGACCATGA TT
upcup	Screening	TTTCTATACGACGAGTGATACT
upcmid	Screening	GATACCGCCTTCGCCTTCTTCAG
URAR	Screening	TATAAACCAGTGTGTATGGGGTTG
HISR	Screening	TCGGTAGTTGGTGGTTAAGTAAAAG
205890_F	intron validation	CCCATAAGCAGAAAAATTTGGA
205890_R	intron validation	AAACGTTTTTCGTGTGCCATA
209350_F	intron validation	cgttagtgcaatattatacaagca
209350_R	intron validation	TCGATTGTCCAATACCAAAGTT
400980_F	intron validation	caaaggtatattcaacgataacga
400980_R	intron validation	CACCAGAGGCTTTCTTGACC
405840_F	intron validation	tcgatttggcaccagaattt
405840_R	intron validation	aacttctctccgtccgaggt
601470_F	intron	Cctgcacaattgatcaagca

	validation	
601470_1R	intron validation	Aaccctatttgagaaaaactgaaa
601470_2R	intron validation	tgaaataacctgtcaattgaataa
603230_F	intron validation	Attgtgcaccacaagggaga
603230_R	intron validation	acaccggatcgttcaagtc
807560_F	intron validation	cagcatagaacatgggtgacg
807560_R	intron validation	tgacaacagctggtcttctg
601830_F	intron validation	Caggatcaggagcttcagga
601830_R	intron validation	Gcagaacccttcatttcacc
803400_F	intron validation	tgttgaaaggggatctagaaga
803400_R	intron validation	ctgattgaccacctggacct