

**Supplementary Table 1 Primer sequences**

Target gene	Forward primer	Reverse primer
ITCH	5'-ATATGGATCCATGTCTGACAGTGGATCACAACTT	5'-ATATGTCGACTTACTCTTGTCCAATCCTTCTGT
ITCH $\Delta$ WW1	5'-CTGTAAGTCAAGCTCCCTTGCTACCTCCTGGC	5'-CAAGGGAGCTTGAGTTACAGGATTTAATGGCCTAG
ITCH $\Delta$ WW2	5'-GATAGACCAGAACCTCTACTGGAATCCGT	5'-TAGAGGTTCTGGTCTATCCCATGTTGTTCT
ITCH $\Delta$ WW3	5'-GATCCTCTTGGTCCATTGAGTCAAGGTCA	5'-CAATGGACCAAGAGGATCAAATCTTTACTTTG
ITCH $\Delta$ WW4	5'-CAGAAGTCAAGGTCAATTAATGAAAAGACAGGA	5'-GACCTTGACTTCTGGGGTCTTCCCATTGTGTA
LAPTM5	5'-CGCGGATCCATGGACCCCCGCTTGTCCAC	5'-ACGCGTCGACTCACACCTCTGAGTATGGGG
LAPTM5 Del	5'-CGCGGATCCATGGACCCCCGCTTGTCCAC	5'-ACGCGTCGACTCACACCTCTGATGCTGGGC