

**TableS1****Primer sequences used in this study**

P75FP AAATAGATCTTGCCCAACAAAGCAGAGACC  
P-1.0RP AATAAAGCTTGGCCTTAGCCTGTTGAAGC  
P150FP AAATAGATCTTTAGCGGCCACTGGATTTT  
P150\_ALL MUT\_FP  
AAATAGATCTTTAGCGGCCACTGGATGTCAAGTCAAAGAAAAAAAAAAGTCAAGGTCAAGAGGTCGAGTCAATTTTCAGATAATGC  
CCAACAAAGC  
P150\_MUT\_GAR\_FP  
AAATAGATCTTTAGCGGCCACTGGATTTTCCAAAAAGAAAAAAAAAAAAATTCAGTCAAGAGGTCGAGTCAATTTTCAGATAATGC  
CCAACAAAGC  
P150\_MUT\_NS\_FP AAATAGATCTTTAGCGGCCACTGGATGTCAAGTCAAAGAAAAAAAAAAAAATTCAGATGAGTAAAGATG  
P150\_MUT\_GA\_FP  
AAATAGATCTTTAGCGGCCACTGGATTTTCCAAAAAGAAAAAAAAAAAAATTCAGTCAAGAGGTCGATGTGGTTTTTCAGATAATGC  
CCCA  
P150\_MUT\_NFAT\_FP AAATAGATCTTTAGCGGCCACTGGATGTCAAAGAAAAAAAAAAAAATTCAGATGAGTAAAGATG  
P150\_MUT\_STAT5\_FP AAATAGATCTTTAGCGGCCACTGGATTTTCCGTCAAAGAAAAAAAAAAAAATTCAGATGAGTAAAGATG  
P150\_MUT\_HOXA5\_FP  
AAATAGATCTTTAGCGGCCACTGGATTTTCCAAAAAGAAAAAAAAAAGTCAAGAGATGAGTAAAGATGTGGTTTTTCAGATAA  
P150\_MUT\_GATA2\_FP  
AAATAGATCTTTAGCGGCCACTGGATTTTCCAAAAAGAAAAAAAAAAAAATTCAGTCAAGGTAAAGATGTGGTTTTTCAGATAATGC  
CCC  
P150\_MUT\_AP1\_FP  
AAATAGATCTTTAGCGGCCACTGGATTTTCCAAAAAGAAAAAAAAAAAAATTCAGGTCAAGGTGATGTGGTTTTTCAGATAATGC  
CCCA  
P150\_MUT\_RUNX1\_FP  
AAATAGATCTTTAGCGGCCACTGGATTTTCCAAAAAGAAAAAAAAAAAAATTCAGATGAGTAAAGAGTCAATTTTCAGATAATGCC  
CAACAAAGC  
E+8.9FP AAATGCTAGCTGATCATGGTTCCTTATCTGGACC  
E+8.9RP AAATCTCGAGTGGCATTGGCACATTAGAAAAAATATGTAAG  
E+6.5(+6534)FP AATAGAGCTCAAGGAGGTCTCTCTCCAGTCC  
E+6.5(+8153)RP AAATGCTAGCAGAGAAACCCTGTCTCGAAACAAAA  
E+6.5\_6534FP AATAGAGCTCAAGGAGGTCTCTCTCCAGTCC  
E+6.5\_6770FP AATAGAGCTCAAGCCGCTAAAGCTGACAGCAA  
E+6.5\_6970FP AATAGAGCTCCTGAGAGCCTGTGGTGAGTG  
E+6.5\_7170FP AATAGAGCTCAAACACAGTCACTTCAGGGTTTC  
E+6.5\_7370FP AATAGAGCTCTCCTCTGAGATGGTGCCAGG  
E+6.5\_7570FP AATAGAGCTCCCACCCAAAAGCGACAGAGC  
E+6.5\_7770FP AATAGAGCTCGCCTAAGAACTCCCCCAGC  
E+6.5\_7970FP AATAGAGCTCTGATTCTGGCTGATTCTAGCC  
E+6.5\_7370FP AATAGAGCTCTCCTCTGAGATGGTGCCAGG  
E+6.5\_7420FP AATAGAGCTCTCCTGACCATGGGGAACCCC  
E+6.5\_7470FP AATAGAGCTCGCCTAGAGCTGTGTCCATAGC  
E+6.5\_7520FP AATAGAGCTCGTGAAGAACTAAAAGTCACGAGGCCTC  
E+6.5\_570RP AAATCTCGAGGCCGAGAAATGAATGAAGA  
E+6.5\_7470-570\_MUT\_STREFFP  
AATAGGTACCGCCTAGAGCTGTGTCCATAGCCACCTTCCCCACAGTGAGAACGGCGAAGGTGA  
E+6.5\_7470-570\_MUT\_EGR2FP AATAGGTACCGCCTAGAGCTGTGTCCATAGCAGAACGGCGAAGAACTGCC  
E+6.5\_7470-570\_MUT\_FOXA2FP AATAGGTACCGCCTAGAAGAACGGCGAAGGCCACCTTCCCCCA  
E+6.5\_7470-570\_MUT\_EFSFP  
AATAGGTACCGCCTAGAAGAACGGCGAAGGCAGAACGGCGAAGAACTGAGAACGGCGAAGGTGAAAA  
E+2.5FPAATGGTACCGTTTCACAGGTCTCCAGCC  
E+2.5RP AAATCTCGAGAAACAACAACAAAAGCAAAAACCAACA  
E+0.2FP AATAGGTACCAAGAGGTCATGAGCAGGCT  
E+0.2RP AAATCTCGAGAGACCGTGAGTAGACCGGTAG  
E-1.0FP AAATGCTAGCAGGAGAGAGGTGAGGAGGA  
E-1.0RP AAATCTCGAGTGCCATTGGGTAGTGATGTCAAG  
E-1.0\_E+0.2FP  
AAATGCTAGCCTGGCCTGAGGGAGGAAGTGGGTGAGGGTGCATCTTGACATCACTACCCAATAGGCAAAGAGGTCATGAGCA  
GGCTGG  
E+0.2RP AGACCGTGAGTAGACCGGTAG  
E+6.5\_E+0.2OLF\_P\_CTACCGGTCTACTCACGGTCTTCTCTGAGATGGTGCCAGG  
E+6.5\_FP AAATGCTAGCTCCTCTGAGATGGTGCCAGG  
E+6.5\_RP AGCCGAGAAATGAATGAAGA  
P150\_OLF\_P\_TCTTCATTCAATTTCTCGGCTCCTTTAGCGGCCACTGGATTTT  
P75\_E+0.2OLF\_P\_CTACCGGTCTACTCACGGTCTTCCCCAACAAGCAGAGACC  
P-1.0BglIIIRP AAATAGATCTGGCCTTAGCCTGTTGAAGC