

**Supplement Table S1.** Control scramble sequences and shRNA primer sequences for virus package.

ShRNA/scramble	Sequences (5'-3')
shrna1	CCGGTGCACGACACCGGGAAGTTCCTCGAGTGAAGTTCCCGGTGT CGTGCATTTTGG AATTCAAAAATGCACGACACCGGGAAGTTCCTCGAGTGAAGTTCC CGGTGTCGTGCA
shrna2	CCGGCTGTTATCTAGCTGAGTTCATCTCGAGATGAAGTCAGCTAGAT AACAGTTTTTGG AATTCAAAAAGTGTATCTAGCTGAGTTCATCTCGAGATGAAGTCAG CTAGATAACAG
shrna3	CCGGGACGACCTGATACGCCACTGTCTCGAGACAGTGGCGTATCAG GTCGTCTTTTGG AATTCAAAAAGACGACCTGATACGCCACTGTCTCGAGACAGTGGC GTATCAGGTCGTC
Scramble	CCGGCCTAAGGTAAAGTCGCCCTCGCTCGAGCGAGGGCGACTTAAC CTTAGGTTTTTGG AATTCAAAAACCTAAGGTAAAGTCGCCCTCGCTCGAGCGAGGGCG ACTTAACCTTAGG

**Supplement Table S2.** Specific sequences of the target gene primers.

primers	Sequences (5'-3')
EGLN1	Forward: AGGCGATAAGATCACCTGGAT Backward: TTCGTCCGGCCATTGATTTTG
CXCR4	Forward: GCAGCAGGTAGCAAAGTGAC Backward: CCATGGTAACCGCTGGTTCT
HIF1A	Forward: GTCTGAGGGGACAGGAGGAT Backward: CTCCTCAGGTGGCTTGTGAG
VEGF-A	Forward: AGGCCAGCACATAGGAGAGA Backward: ACGCGAGTCTGTGTTTTTGC
TP53INP2	Forward: GCTGGTTTGTACCCCTCCC Backward: GGTGACGTAAACGGACATGCT
TP53I13	Forward: GAGCCCATTGTCCCGAGAG Backward: GAGGGAAGGGTTAGCCATACA
TP53I3	Forward: GGAGGACCGGAAAACCTCTAC Backward: CCTCAAGTCCCAAAATGTTGCT
TP53INP1	Forward: TTCCTCCAACCAAGAACCAGA Backward: GCTCAGTAGGTGACTCTTCACT

NOL6	Forward: GGATCGGATTGATGCCTTCCT Backward: GCTGCCCACAACAGTAACCT
WDR3	Forward: ACCAAGCAGTACCTACGCTAT Backward: TTCTCACCACGAAGTGTCA
POP1	Forward: TTTTCAGACTCTGCCACGG Backward: CGTCCGGTTCATGTGACATC
MDN1	Forward: GGAATGCCGAAGCCATTAAAGC Backward: TTGCTCATCGACACACATAGC