Primer list for qPCR

gene	Forward	Reverse
Pou5f1(Oct4)	CGTGGAGACTTTGCAGCCT	GCTTGGCAAACTGTTCTAGCTC
Sox2	GAGTGGAAACTTTTGTCCGAGA	GAAGCGTGTACTTATCCTTCTTCAT
Klf4	CGAACTCACACAGGCGAGAA	CGGAGCGGGCGAATTT
Nanog	AACCAAAGGATGAAGTGCAAGTG	TCCAAGTTGGGTTGGTCCAA
Nodal	GCTCCTGGATCATCTACCCC	ACCCTGCCATTGTCCACATA
T	CTGGGAGCTCAGTTCTTTCGA	GAGGACGTGGCAGCTGAGA
Gata6	TGCTTGCGGGCTCTATATGA	AGGTGGTCGCTTGTGTAGAA
Foxa2	TTTTGTTTGGGGAGACAAGG	GTGGGATGACTTCAGGAGGA
Pax6	ATCTGCTACTTCCCCCCGAG	CTCACACATCTGCTCACCGC
Nestin	TCCCTTAGTCTGGAAGTGGCTA	GGTGTCTGCAAGCGAGAGTT
Sma	GCTATTCAGGCTGTGCTGTC	GGTAGTCGGTGAGATCTCGG
Gata4	TCCTACTCCAGCCCCTACC	GTAGTGTCCCGTCCCATCTC
Sox17	GTGCCAGGCTTCTAGTCCAG	CGAGCTCACGACGTTATCAA
Tet1	GCTGGATTGAAGGAACAGGA	GTCTCCATGAGCTCCCTGAC
Tet2	AACCTGGCTACTGTCATTGCTCCA	ATGTTCTGCTGGTCTCTGTGGGAA
Tet3	TCCGGATTGAGAAGGTCATC	CCAGGCCAGGATCAAGATAA
Tdg	CAAGAGGACGCAAAGAAGATGG	TTGAAGCAATGCCACAAGGTT
Lefty1	TCGATTCTAGGCTCGTGTCC	ACGAACCAACTTGTGTGAGC
Lefty2	CACAAGTTGGTCCGTTTCG	GGTACCTCGGGGTCACAAT
GAPDH	GTGTTCCTACCCCCAATGTGT	ATTGTCATACCAGGAAATGAGCTT
U6	CTCGCTTCGGCAGCACA	AACGCTTCACGAATTTGCGT

shRNA sequence

gene	Forward
Tet1	GATCCCCCAACTTGCATCCACGATTATTCAAGAGATAATCGTGGATGCAAGTTGTTTTTC
Tet2	GATCCCCACTACTAACTCCACCCTAATTCAAGAGATTAGGGTGGAGTTAGTAGTTTTTTC
	Reverse
Tet1	TCGAGAAAAACAACTTGCATCCACGATTATCTCTTGAATAATCGTGGATGCAAGTTGGGG
Tet2	TCGAGAAAAAACTACTAACTCCACCCTAATCTCTTGAATTAGGGTGGAGTTAGTAGTGGG

Primer for GLIP-PCR

	Forward	Reverse
Lefty1 1#	GCTGCAGACTTCATTCCAGG	TAAGACTCGTCCCTGGTGTG
Lefty1 2#	CTTCTGTTCCCATTGCAGTGT	TTTCTTGGCTCGAGACCAGT
Lefty1 3#	GCCTCACTCTTATCAGCCCT	GAGGTCTCACGTTCTCTGCT
Lefty1 4#	ACCCACCTTCCATCCCATG	TGGTCACCGCTGTCTGTTAG
Lefty2 1#	CTGTGGCCATTGTTCACCTC	GGTCAGCTCACTACAGGACA
Lefty2 2#	CGATGGATGTCTGCTGAGGA	CCCAGTTTACAACAGCTGGG
Lefty2 3#	AGAGAGACATGCGCAGTCTT	TACCCCGGAGTCAAAGGAAC
Lefty2 4#	AAGAATTCAGCCCAGCCATG	GGAAGACACACGGACTGAGA

Figure S1. MiR-29b expression level after miR-29b mimic transfection 48h in mESCs by qPCR.

Figure S2. Tet1 and Tet2 siRNA KD efficiency validation by qPCR.

Figure S3. (A) Bioinformatics software prediction results show top 10 potential miRNAs that targets all three Tet family members. (B) qRT-PCR results of Oct4, Sox2, Nanog and Klf4 expression level in mESCs, EB abd MEF. Each bar represents the mean ± SEM of triplicates. (C) The expression patterns of other miRNAs (potential miRNA that may targets Tet family) during ESCs differerntiation.

Figure S4. Validation of Tet1 and Tet2 KD mESCs by qPCR.

Figure S5. (A) ALP activity detection in Tet2 KD mESCs. (B) Oct4, Sox2 and Nanong weren't affected in Tet2 KD mESCs. (C) Different germ layer markers expression level in Tet2 KD mESCs.

Figure S6. Schematic picture to show the role of miR-29/Tet1 axis in mESCs.

Figure S1

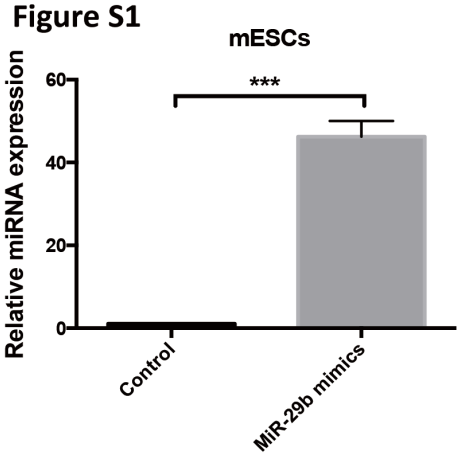


Figure S2

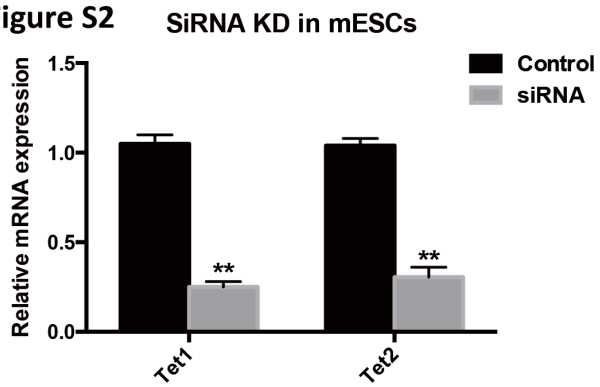
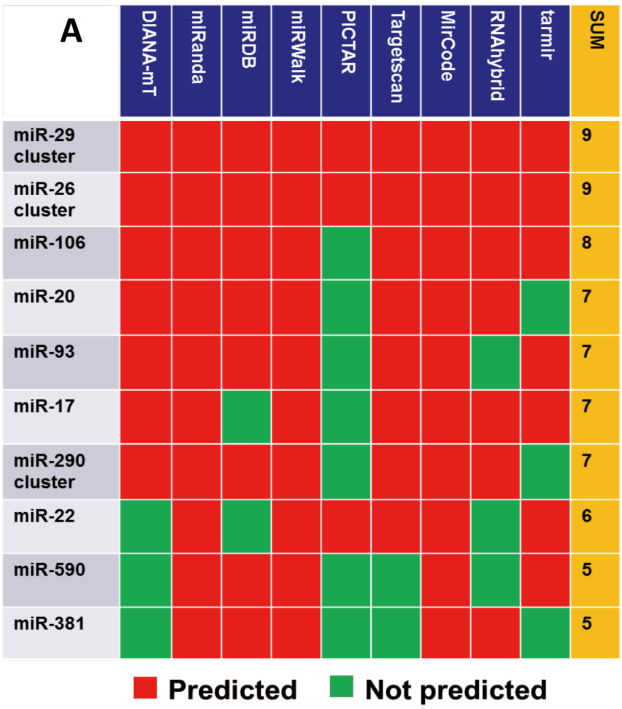
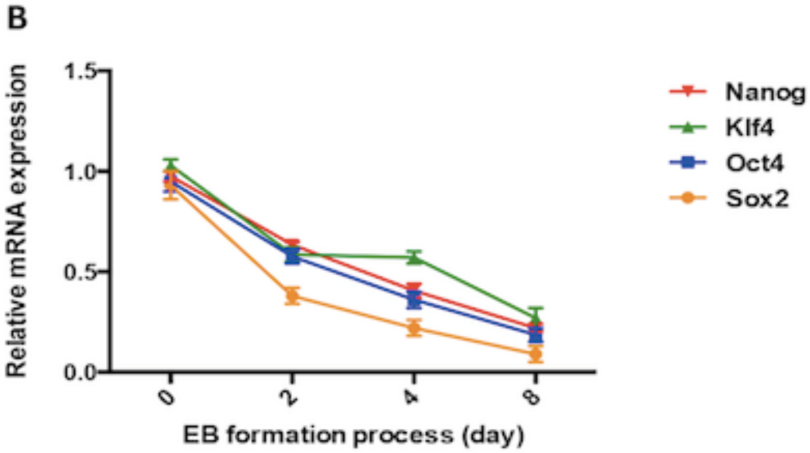


Figure S3





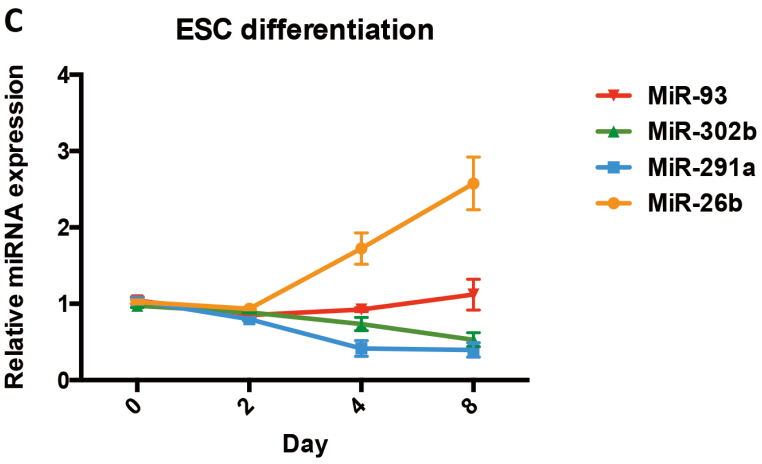


Figure S4 shRNA KD in mESCs

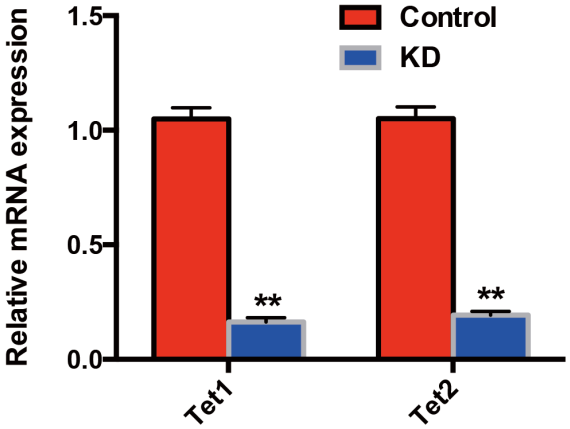


Figure S5

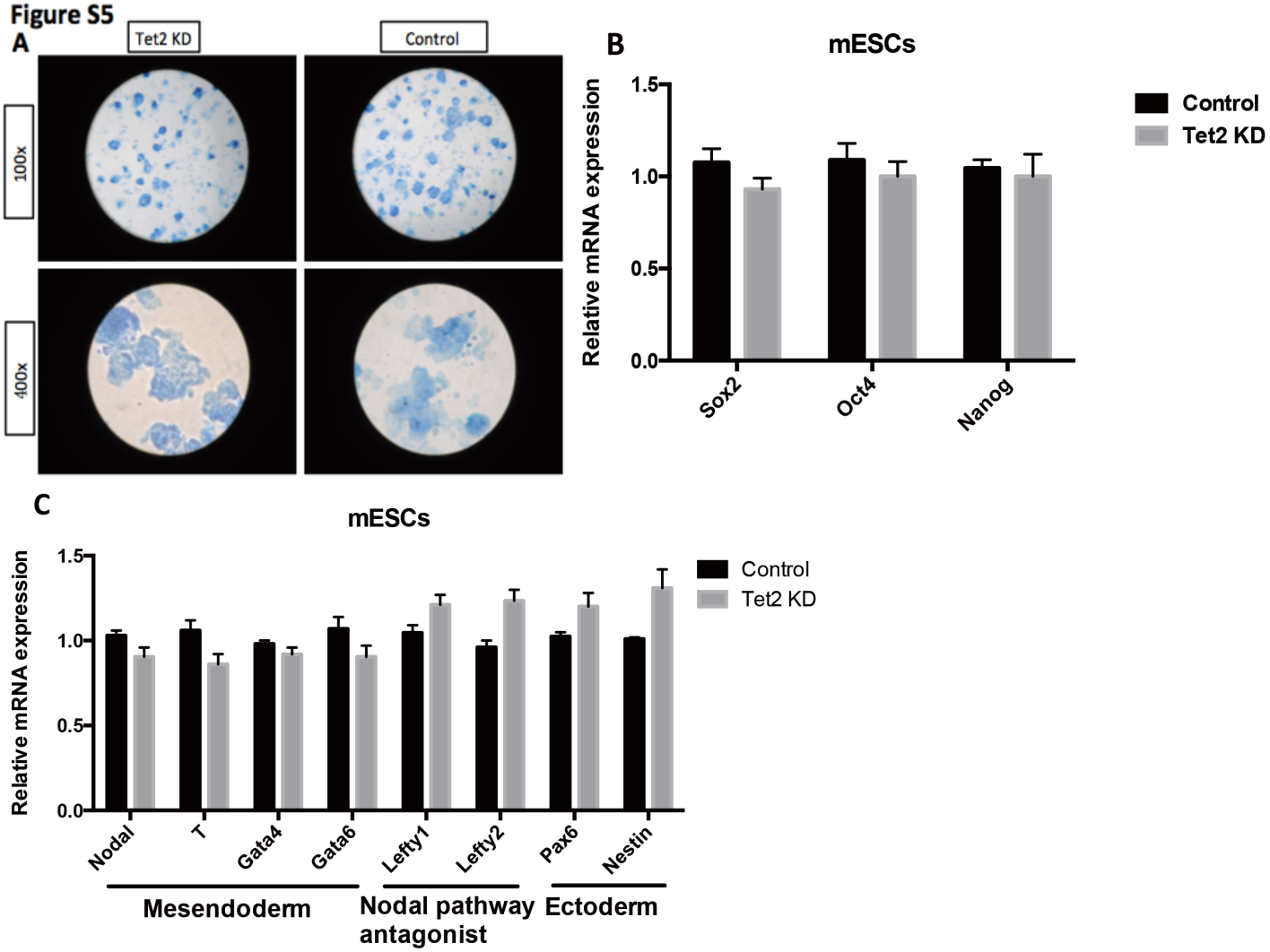


Figure S6