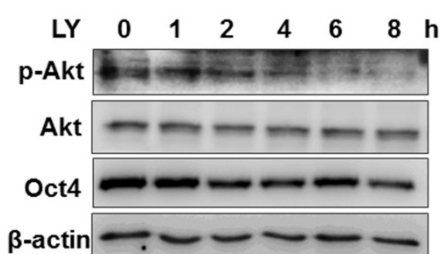


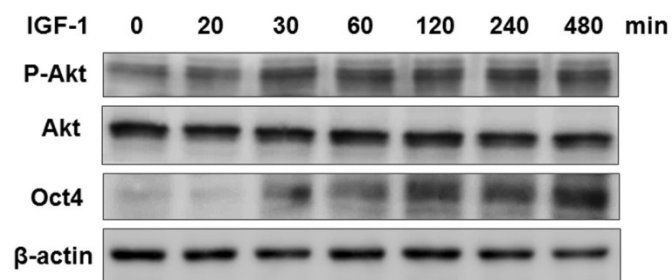
Supplementary Information

Genes	GenBank number	Primer sequence	Annealing Temp
β -actin	NM_007393	F:AAATCGTGCGTGACATCAAAGAGAA R:ACCCAAGAAGGAAGGCTGGAAAA	60°C
Pdx1	NM_00814	F:AAAACCGTCGCATGAAGTGG R:CCCGCTACTACGTTTCTTATCTTCC	60°C
GATA4	NM_008092	F:CTGGCCTGTCATCTCACTACG R:TGTCCTCTCGGCCCTGAAGC	60°C
Runx1	NM_001111022	F:GGCACTCTGGTCACCGTCAT R:CGTTGAATCTCGCTACCTGGTT	60°C
α -SMA	NM_007392.2	F:CCCCTGAAGAGCATCCGACA R:TCTCCAGAGTCCAGCACAAATAC	60°C
Sox1	NM_009233	F: GAGATGATCAGCATGTACCTGCC R: GTAGTGCTGTGGCAGCGAGT	60°C
Nestin-FP	NM_016701.3	F:GAGTGGAAACTGAGGATAAGGC R:TCCCGTCTGCTCTGGTTGT	60°C

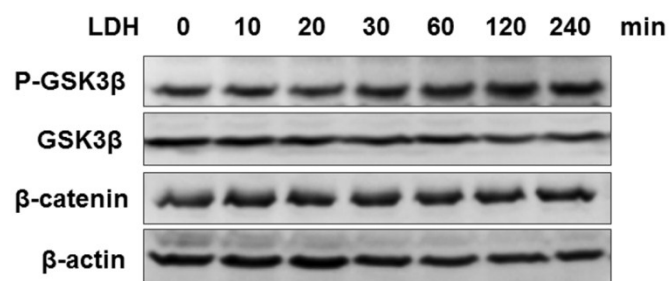
Supplementary Table 1. Primer sequences for real-time PCR of target genes.



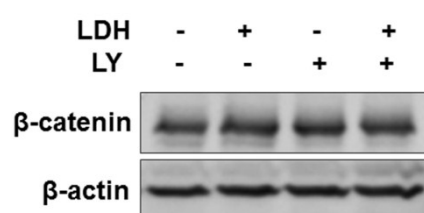
Supplementary Figure 1. Expression of phospho-Akt and Oct4 in mESCs after the treatment of PI3K inhibitor LY294002 within 8h. Total Akt and β -actin were used as loading control.



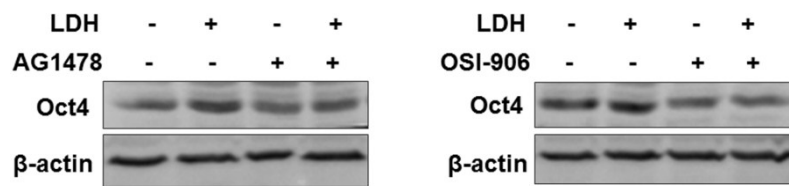
Supplementary Figure 2. Western blot analysis of the expression of phospho-Akt and Oct4 in mESCs at different time points after the addition of 50ng/ml IGF-1. Total Akt and β -actin were used as loading control.



Supplementary Figure 3. Western analysis of the expression of phosphorylated GSK3 β and β -catenin in the presence of LDH NPs within 240min. Total GSK3 β and β -actin were used as loading control.



Supplementary Figure 4. Effect of PI3 kinase inhibitor LY294002 (LY) on β -catenin expression. β -actin was used as loading control.



Supplementary Figure 5. Influence of membrane-receptor inhibitors on LDH-treated mESCs. Western blot investigated the effect of EGF receptor inhibitor AG1478 and IGF-1 receptor inhibitor OSI-906 on LDH-induced Oct4 in mESCs. β -actin was used as loading control.