

[gw22-e0079]

OXIDATIVELY MODIFIED LOW DENSITY LIPOPROTEIN PROMOTE PROLIFERATION AND OSTEODIFFERENTIATION OF BONE MARROW MESENCHYMAL STEM CELLS THAT CO-CULTURED WITH VASCULAR SMOOTH MUSCLE CELLS BY OSTEOGENIC INDUCTORChen Xiaochun, Ding Feng *Ge Zhiping Hospital*

10.1136/heartjnl-2011-300867.139

Objective To investigate the differentiation action of BMSCs into osteocytes by ox-LDL and osteogenic inductor in indirect co-culture system.

Methods The proliferation of BMSCs was determined by MTT assay. Expression of OPN mRNA was tested in real time. Disodium phenyl phosphate method was used to determine the AKP activity of each group at 10 days. Immunofluorescent staining and alkaline phosphatase (AKP) activity were utilised in expression testing of OPN and AKP at 14 days.

Results (1) The ox-LDL (5 mg/l) showed a significant ability of BMSCs proliferation promoting along the time, and to the maximum extent at 10 days compared with the control group ($p < 0.05$). An inhibition effect on proliferation of BMSCs was found in the osteogenic inductor group, but not statistically significant compared with the control group ($p > 0.05$). The inhibition effect of cell proliferation was more significant in combine group at 10 days compared with the osteogenic

inductor group ($p < 0.05$). (2) Expression of OPN mRNA was detected in all groups at 7d, but the combine group was the highest. There was an interaction between the two factors ($p < 0.01$). (3) Expression of AKP was detected in all groups at 10d, and the combine group was the highest as well. There was also interaction between the two factors ($p < 0.01$). (4) The expression of OPN mRNA and AKP in combine group were increasing even at 14 days.

Conclusions These results showed that ox-LDL can promote the proliferation of BMSCs, but the combined effect of ox-LDL and osteogenic Inductor to BMSCs were inhibiting proliferation and promoting the osteogenic differentiation.