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## IL-8 EXERTED ANTI-INFLAMMATORY EFFECTS BY INCREASING P-ERK IN 3-D CO-CULTURE MODEL CONSISTED OF VASCULAR ENDOTHELIAL CELLS AND SMOOTH MUSCLE CELLS

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**Objective** This study attempted to determine whether there existed crosstalk between vascular endothelia cells and smooth muscle cells and the role of IL-8 in the communication by the means of three-dimensional (3-D) co-cultured model.

**Methods** 3-D co-culture model was constructed by transwell and type I collagen gel. Umbilical artery smooth muscle cells (HUASMCs) were suspended with the gel and dropped to the upper compartment of the transwell. Umbilical vein endothelial cells (HUVECs) were then seeded on the gel surface. Growth of HUASMCs was tested by CFDA SE cell proliferation kit. Changes of IL-8 and other bioactive substances among different culture conditions were documented by Elisa and real-time PCR. Alterations of p-ERK influenced by IL-8 were also examined by western blotting. Results: Compared with single culture, the growth rate of HUASMCs in 3-D co-cultured model was 0.679±0.057. Secretion and transcription of VEGF, t-PA, NO (HUVECs) and VCAM-1 (HUASMCs) were varied with the way of culture. IL-8 released by HUVECs was nearly doubled (2.35±0.16) ($p<0.05$) when 3-D co-cultured and diminished the expression of VCAM-1 from HUASMCs (0.55±0.09). Increasing or blocking IL-8 changed the level of p-ERK and VCAM-1. Reduction of VCAM-1 result from IL-8 could be blocked by MEK inhibitor PD98059.

**Conclusion** HUVECs and HUASMCs functioned more similarly to normal arteries when 3-D co-cultured. Crosstalk between them existed and maybe mediated by IL-8, which exerted anti-inflammatory effects on SMCs by increasing the level of p-ERK.