



***Sophorae radix* extract inhibit high glucose-induced vascular cell adhesion molecule-1 up-regulation on endothelial cell line**

Kang-Beom Kwon, Eun-Kyung Kim, Do-Gon Ryu

Department of Physiology, School of Oriental Medicine, Wonkwang University

Background: *Sophorae Radix* (SR) has been used for various diseases including atherosclerosis, arrhythmia. Atherosclerosis induced by hyperglycemia is an important factor in the promotion of diabetic complications. An early event in atherosclerosis is the adhesion of monocytes to endothelium via adhesion molecules. Among them, vascular cell adhesion molecule-1 (VCAM-1) expression mediates the binding of monocytes and lymphocytes to vascular endothelial cells.

Methods: The study was performed on vascular endothelial cells (ECV304 cells). ECV304 cells were pretreated with various concentrations of SR extract for 3 hours before exposure with high glucose (55.5 mM) for 48 hours. The protein expression of VCAM-1 was measured by enzyme linked immunosorbent assay (ELISA) and its mRNA expression was measured by reverse transcription polymerase chain reaction (RT-PCR).

Results: SR extract significantly inhibited high glucose-induced expression of VCAM-1 in a dose-dependent manner and reduced the level of VCAM-1 mRNA through interfering with translocation of nuclear factor- κ B (NF- κ B). Decreased VCAM-1 expression by SR extract was associated reduction of adherence between high glucose-stimulated ECV304 cells and human monocyte-like HL-60 cells.

Conclusions: These data suggest that SR extract inhibits high glucose-mediated monocytes-endothelial cells adhesions and expression of VCAM-1 via inhibition of NF- κ B translocation.

Keywords: *Sophorae radix*; atherosclerosis; vascular cell adhesion molecule-1; ECV304 cell; nuclear factor- κ B