

Korea Red Ginseng inhibits TNF-alpha-induced endothelial cell activations.

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Abstracts

Objective: Vascular inflammation is an important step in the development of cardiovascular disorder. Since it has not been known whether Korean red ginseng has a role to play on the vascular inflammation, we investigated the effects of Korean red ginseng extract (KRGE) on monocyte adhesion and its underlying signal mechanism.

Materials and Methods: Monocyte adhesion assay and Western blot were conducted on the human umbilical vein endothelial cells (HUVEC) to study monocyte adhesion and the expression of adhesion molecules. Intracellular calcium was measured with Fura-2 fluorescent staining, and superoxide production was measured with lucigenin chemiluminescence in the endothelial cells.

Results : KRGE inhibit TNF-alpha-induced monocyte adhesion on the endothelial cells at the range of 0.03 ~ 1 mg/ml. TNF-alpha-induced vascular cell adhesion molecule and intercellular cell adhesion molecule expressions were inhibited by the pretreatment of KRGE in the endothelial cells. KRGE also inhibits TNF-alpha-induced intracellular calcium and the superoxide production in the endothelial cells.

Conclusion: This study demonstrated that KRGE inhibits TNF-alpha-induced monocyte adhesion by inhibiting the adhesion molecule expression, intracellular calcium and superoxide production in the endothelial cells. Therefore, the ability of KRGE to inhibit monocyte adhesion may be of help to protecting the endothelial function.