



Effects of probucol on cultured human umbilical vein endothelial cells injured by hypoxia/reoxygenation

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ABSTRACT. There is increasing evidence suggesting that endoplasmic reticulum stress (ERS) plays an important role in the initiation and development of atherosclerosis. This study was designed to examine the effect of probucol on cultured human umbilical vein endothelial cells (HUVECs) injured by hypoxia/reoxygenation (H/R) and the potential mechanisms involving ERS. Injured HUVECs induced by $\text{Na}_2\text{S}_2\text{O}_4$ served as an H/R model *in vitro*. The concentration of probucol in this study ranged from 3 to 27 μM . Cell viability was analyzed using MTT and a lactate dehydrogenase (LDH) assay. The expression of GRP78, X-box-binding protein (XBP)-1, and CHOP (c/EBP-homologous protein) were quantified using western blot. Compared to cells with H/R injury alone, the results showed that the cell viability increased significantly with probucol, while the LDH leakage rate was significantly lower as analyzed by the LDH assay. Furthermore, the expression levels of GRP78, XBP-1, and CHOP were significantly downregulated. These results indicated that probucol effectively protected HUVEC from injury induced by H/R and that the mechanism might be related to attenuation of ERS.

Key words: Probuco; Endoplasmic reticulum stress; Hypoxia/reoxygenation