

论文

异亚丙基莽草酸对H₂O₂损伤血管内皮细胞的保护作用

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摘要:

目的研究异亚丙基莽草酸(ISA)对血管内皮细胞损伤的保护作用。方法倒置显微镜下观察细胞形态学改变,MTT比色法检测细胞活性,用硝酸还原酶法测定细胞培养液中NO的含量。放射免疫法测定细胞培养液中前列腺素代谢物6-酮-前列腺素F_{1α}(6-keto-PGF_{1α})含量,比色法测定培养液及细胞裂解液的乳酸脱氢酶(LDH)活性并计算LDH的释放率。

结果ISA可明显改善H₂O₂所致的内皮细胞变形、皱缩等损伤表现。1~100 μmol·L⁻¹ ISA可浓度依赖性的减轻H₂O₂引起的细胞活性降低和LDH释放,并促进H₂O₂诱导的血管内皮细胞释放NO和前列腺素。结论异亚丙基莽草酸对H₂O₂损伤血管内皮细胞具有保护作用。

关键词: 异亚丙基莽草酸 内皮细胞 细胞损伤 过氧化氢

Protective effect of 3,4-oxo-isopropylidene-shikimic acid on vascular endothelial cell injured by hydrogen peroxide

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Abstract:

AimTo study the effect of 3,4-oxo-isopropylidene-shikimic acid (ISA) on H₂O₂ (200 mol·L⁻¹, 4 h) injured human umbilical vein endothelial cells (HUVEC). MethodsMorphological change was observed under microscop. Cell viability was assessed by MTT assay. The release of intracellular lactate dehydrogenase (LDH) and NO was assessed by colorimetry. Radioimmunoassay was used to assess 6-keto-prostaglandin F1α(6-keto-PGF1α). ResultsPretreatment with ISA for 6 h alleviated the morphological damage of H₂O₂ induced HUVECs. At the concentration of 1-100 μmol·L⁻¹, ISA prevented the inhibitory effect on cell viability induced by H₂O₂ in dose-dependent manner, but increased the ratio of cell viability from 60.4% to 84.3%. ISA reduced LDH release and increased the level of NO and 6-keto-PGF_{1α}in H₂O₂ induced HUVECs. ConclusionISA exerted protective effect on H₂O₂ injured HUVEC.

Keywords: endothelial cell cell injury hydrogen peroxide 3,4-oxo-isopropylidene-shikimic acid

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