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论著

氯化高铁血红素对血管内皮细胞Erk1/2磷酸化的诱导及维持作用研究

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摘要 目的： 探讨氯化高铁血红素（hemin）是否可诱导人脐静脉内皮细胞Erk1/2的磷酸化，以及对磷酸化Erk1/2的维持时间。 方法： 人脐静脉内皮细胞（HUVECs）分别给予不同浓度的氯化高铁血红素或100 μmol/L H_2O_2刺激，收集不同时段的细胞，采用Western blotting测定细胞中总Erk1/2和磷酸化Erk1/2的表达。 结果： 氯化高铁血红素在1-10 μmol/L浓度范围内可诱导HUVECs Erk1/2的磷酸化，且可长时间维持Erk1/2的磷酸化，然而当氯化高铁血红素浓度≥25 μmol/L时，对HUVECs Erk1/2的磷酸化作用减弱甚至消失。H_2O_2对照组作用于HUVECs时仅引起Erk1/2短暂的磷酸化。 结论： 氯化高铁血红素可诱导并维持HUVECs Erk1/2长时间的磷酸化，提示对 Erk1/2 的磷酸化可能是氯化高铁血红素的作用机制之一。

关键词 脐静脉内皮细胞； 氯化血红素； 有丝分裂素激活蛋白激酶类； 磷酸化

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Hemin induces and sustains the phosphorylation of Erk1/2 in hum an umbilical vascular endothelial cells

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Abstract

<FONT face=Verdana>AIM: To investigate the relationship between hemin and Erk1/2 activation in human umbilical vascular endothelial cells (HUVECs). METHODS: Cultured HUVECs were separately incubated with hemin or H₂O₂ for different times. Subsequently Erk1/2 phosphorylation and total Erk1/2 were determined by Western blotting assay. Flow cytometry was employed to determine the cell cycle distribution.
RESULTS: Hemin at the concentration of 1-10 μmol/L induced the phosphorylation of Erk1/2 in HUVECs, and sustained the phosphorylation of Erk1/2 for three hours. The duration of phospho-Erk1/2 induced by hemin was much longer than that in H₂O₂ control (3 h vs 30 min). CONCLUSION: Hemin induces and sustains the phosphorylation of Erk1/2 in HUVECs, which indicates that the effect of hemin on the Erk1/2 activation may be one of pharmacological target of hemin.</FONT>

Key words Umbilical vascular endothelial cells Hemin Mitogen-activated protein kinases Phosphorylation

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