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论著

Rho在二氧化硅诱导的人支气管上皮细胞α平滑肌肌动蛋白表达中的作用

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摘要：

目的：探讨Rho在二氧化硅（SiO2）诱导人支气管上皮细胞（HBECs）α-平滑肌肌动蛋白（α-SMA）表达中的作用。方法：以SiO2处理的HBE细胞为研究对象，免疫细胞化学及Western印迹检测α－SMA表达；GST pull down分析Rho的活化情况；干预实验中用Rho抑制剂Y27632处理细胞后，Western印迹检测SiO2对α-SMA表达的影响。结果：SiO2 (0，50，100，200，300 μg/mL)分别作用HBECs细胞72 h后，α-SMA表达增强，其中以200 μg/mL SiO2组α-SMA表达最强，为对照组的（5.09±1.98）倍（P＜0.01）；用200 μg/mL SiO2分别作用HBECs细胞1，2，6，12，24 h后，Rho明显活化（P＜0.01）；Rho抑制剂Y27632明显抑制了SiO2诱导的α-SMA表达，20和30 μmol/L的Y27632抑制率分别为68%和75%（P＜0.01）。结论：Rho参与介导SiO2诱导的HBECs中α-SMA的表达。

关键词： 二氧化硅 Rho &alpha -平滑肌肌动蛋白 人支气管上皮细胞

Effect of Rho signaling pathway on SiO2 induced α-SMA expression in human bronchial epithelial cells

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Abstract:

ObjectiveTo investigate the role of Rho in SiO2 induced α-SMA expression in human bronchial epithelial cells (HBECs). MethodsHBECs were cultured and stimulated with SiO2. Immunocytochemistry and Western blot were used to detect the expression of α-SMA. The activity of Rho was determined by GST pull down assay. In the prevention experiment, SiO2-stimulated HBECs were incubated with Rho inhibitor Y27632, and the expression of α-SMA was examined by Western blot. ResultsWith SiO2 (0-300 μg/mL) treatment, the expression of α-SMA increased gradually, and 200 μg/mL of SiO2 led to the highest expression of α-SMA which was （5.09±1.98） times of the expression of α-SMA in the control group（P＜0.01）. HBECs treated with SiO2 (200 μg/mL) for indicated time （1,2,6,12, and 24 h）showed an obvious increase of Rho activity （P＜0.01）. Y27632 inhibited SiO2-induced α-SMA expression significantly, and the inhibition rate of 20 and 30 μmol/L Y27632 was 68% and 75%, respectively （P＜0.01）.ConclusionRho signaling pathway may mediate SiO2 induced α-SMA expression in HBECs.

Keywords: SiO2;Rho;α-SMA;human bronchial epithelial cell

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