

PYK-2在PGE₂诱导大肠癌细胞侵袭转移中的作用

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Role of PYK-2 in Invasion and Migration of Human Colorectal Cancer Cells Induced by PGE₂

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- 摘要
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全文: PDF (461 KB) HTML (0 KB) 输出: BibTeX | EndNote (RIS) 背景资料

摘要 目的 研究富含脯氨酸的酪氨酸激酶 2(proline rich tyrosine kinase 2, PYK 2)在前列腺素E2(PGE2)诱导大肠癌 SW480细胞侵袭转移中的作用。方法 实验分为A、B、C、D四组,分别为未处理组, PGE2组, PGE2+SC19220(EP1抑制剂)组, PGE2+BAPTA AM(胞内Ca²⁺螯合剂)组。通过 RT-PCR检测SW480中PGE2四种EP(EP1,EP2,EP3,EP4)受体的表达,应用 Western blotting检测SW480细胞中PYK 2蛋白的表达,应用Transwell实验观察各组SW480细胞侵袭转移能力的改变。结果 SW480表达PGE2的三种EP受体, EP1, EP2和EP4, PGE2可促进EP1的表达;经PGE2作用后, 10分钟内PYK 2磷酸化水平逐渐增加, 0分钟、5分钟、10分钟检测结果相比差异均有统计学意义(P<0.05), 30分钟与0分钟检测结果相比差异无统计学意义(P>0.05);C组、D组与B组相比PYK 2磷酸化水平明显下降(P<0.05), 大肠癌细胞侵袭转移能力显著降低(P<0.05)。结论 PGE2可能通过Ca²⁺, EP1促进PYK 2的磷酸化,从而进一步诱导大肠癌细胞的侵袭转移过程。

关键词: 大肠癌 PGE₂ PYK-2 EP1 侵袭 转移

Abstract: Objective To study the role of proline rich tyrosine kinase 2(PYK 2) in the invasion and migration of Human Colorectal Cancer SW480 Cells induced by PGE2. Methods The cells were divided into A、B、C and D group,including control group,PGE2 group, PGE2+SC19220(the antagonist of EP1)group and PGE2+BAPTA AM (Ca²⁺ chelator)group.The mRNA levels of the four types of EP receptors(EP1,EP2,EP3,EP4) of PGE2 in SW480 were analyzed by RT-PCR. Western blotting was used to detect the protein level of PYK 2,the invasive and migrative ability of SW480 cells was examined by transwell assay. Results EP1,EP2 and EP4 expressed in SW480 cells, and the mRNA level of EP1 elevated after being treated with PGE2. The phosphorylation level of PYK 2 increased gradually within ten minutes after the treatment of PGE2, and the statistically significant differences were observed among the PYK 2 phosphorylation at different time points including 0 min,5 min and 10 min (P<0.05), and there was no difference between the level at 30 and 0 min(P>0.05); the PYK 2 phosphorylation of C group and D group degraded,compared with that of B group (P<0.05), the ability of invasion and migration of SW480 cells degraded accordingly(P<0.05). Conclusion PGE2 may promote the phosphorylation of PYK 2 via Ca²⁺ and EP1,then induce the invasion and migration of human colorectal cancer cells.

Key words: Colorectal cancer PGE₂ PYK 2 EP1 Invasion Migration

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