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论著

同时稳定抑制X连锁凋亡抑制蛋白和生存素表达对胰腺癌细胞上皮-间质转化及侵袭性的影响

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摘要: 目的: 探讨同时抑制X 连锁凋亡抑制蛋白(XIAP) 和生存素(survivin) 后, 对胰腺癌Panc-1 细胞上皮-间质转化(EMT) 及侵袭性的影响, 并初步探讨其机制。方法: 在前期实验构建的胰腺癌Panc-1-XS 细胞(XIAP 和survivin 同时稳定抑制)中, 运用Transwell 小室实验及划痕实验分别检测细胞侵袭和迁移能力;半定量Western 印迹分别检测钙黏蛋白-E (E-cadherin, 上皮标志物)、锌指转录因子(Slug) 蛋白(间质标志物) 及第10 号染色体同源丢失性磷酸酶——张力蛋白基因(PTEN) 和磷酸化蛋白激酶B(P-Akt) 蛋白的表达情况。结果: Panc-1-XS 细胞侵袭和迁移能力显著下降, 同时伴随E-cadherin 蛋白表达显著上调及Slug 蛋白显著下调, 即出现间质- 上皮转化(MET);PTEN蛋白表达上调、P-Akt 蛋白表达下调。结论: 同时抑制XIAP 和survivin 表达, 能部分逆转胰腺癌Panc-1 细胞EMT 表型, 显著减弱其侵袭和迁移能力;此调控过程可能通过PTEN/PI3K/Akt 途径实现。

关键词: 胰腺癌 凋亡抑制蛋白 上皮-间质转化 侵袭性 PTEN/PI3K/Akt

Simultaneous inhibition of XIAP and survivin expression on EMT and invasion of human pancreatic cancer cells

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Abstract: Objective: To investigate the simultaneous inhibition of X-linked inhibitor of apoptosis protein (XIAP) and survivin expression on epithelial-mesenchymal transition (EMT) and invasiion of pancreatic cancer cells Panc-1, and its mechanism.
Methods: On the established human pancreatic cancer cells Panc-1-XS, the expression of XIAP and survivin was inhibited simultaneously. Cell invasion and migration were detected by Transwell chamber experiments and scratch test, and the expression of epithelial marker E-cadherin, mesenchymal markers Slug, phosphatase and tensin homolog deleted on chromosome ten (PTEN) and P-Akt protein was determined by Western blot.
Results: Cell invasion and migration of Panc-1-XS cells decreased significantly, accompanied by significantly upregulated protein expression of E-cadherin, and significantly declined protein expression of the Slug, indicating increased mesenchymal-epithelial conversion (MET); and increased protein expression of PTEN, and declined protein expression of P-Akt.
Conclusion: Simultaneously inhibiting the expression of XIAP and survivin can partially reverse EMT phenotype of pancreatic cancer Panc-1 cells, which then significantly reduces the cell invasion and migration of Panc-1 cell lines. This process may be regulated by PTEN/PI3K/Akt signaling pathway.

Keywords: pancreatic cancer inhibitor of apoptosis proteins (IAPs) epithelial-mesenchymal transition (EMT) invasive PTEN/PI3K/Akt

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