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蛇毒精氨酸酯酶Agkhipin抑制人肝癌SMMC-7721细胞株MRP1表达

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The Inhibition of Venin Arginine Esterase Agkhipin in the Expression of MRP1 in the SMMC-7721 Cell Strain

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摘要 探讨蛇毒精氨酸酯酶Agkhipin对人肝癌细胞株SMMC-7721中多药耐药相关蛋白1 (multidrug resistance associated protein 1, MRP1) 表达的影响, 并阐明Agkhipin抑制人肝癌SMMC-7721细胞活力的机制。方法: 采用不同浓度的Agkhipin处理SMMC-7721细胞72 h后, 应用免疫细胞化学、Western blot和RT-PCR等方法检测MRP1在SMMC-7721细胞中的转录和表达。结果: 不同浓度Agkhipin作用SMMC-7721细胞72 h后MRP1表达均降低, 显示Agkhipin可显著下调SMMC-7721细胞中MRP1转录和表达 ($P < 0.05$), 并呈现出一定的浓度依赖效应。结论: Agkhipin能抑制人低分化肝癌细胞株SMMC-7721中MRP1的表达, 并呈一定程度的浓度依赖效应, 提示Agkhipin在一定程度上可用于提高肝癌细胞对化疗药物的敏感性。

关键词: 多药耐药相关蛋白1 精氨酸酯酶 肝癌细胞

Abstract: To explore the effects of Agkhipin on the expression of multidrug resistance-associated protein 1 (MRP1) in the SMMC-7721 cell line and to describe the mechanism of SMMC-7721 inhibition by Agkhipin. Methods: The cultured cells were treated with different concentrations of Agkhipin for 72 h. The transcription and expression levels of MRP1 in SMMC-7721 were assayed using immunocytochemistry, Western blot, and reverse transcription-polymerase chain reaction. Results: Compared with the control group, both the transcription and the expression levels of MRP1 in SMMC-7721 were significantly reduced after treatment with different concentrations of Agkhipin ($P < 0.05$) in a concentration-dependent manner. Conclusion: Agkhipin can inhibit the transcription and expression of MRP1 in SMMC-7721 cells, which is likely responsible for the inhibition of cellular vitality and, to some extent, the enhancement of the sensitivity of the hepatocellular carcinoma cells to chemotherapeutics.

Key words: Multidrug resistance-associated protein-1 Arginine esterase Hepatocellular carcinoma cell

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