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Runx3基因对HepG2细胞顺铂耐药性的影响 (PDF)

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Title: Runx3 improves chemosensitivity of hepatocellular carcinoma cells HepG2 to cisplatin

作者: [郭元红](#); [陈伟庆](#); [房殿亮](#)
重庆医科大学附属第二医院消化内科

Author(s): [Guo Yuanhong](#); [Chen Weiqing](#); [Fang Dianliang](#)
Department of Digestive Diseases, Second Affiliated Hospital, Chongqing Medical University, Chongqing, 400010, China

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摘要: 目的 探讨Runx3基因对HepG2细胞耐药性的影响及可能机制。 方法 取在1.6 μg/ml顺铂(CDDP)下生长良好的HepG2耐药细胞(HepG2/CDDP-1.6),建立耐药HepG2/CDDP的动态变化模型HepG2/CDDP/2.0,并予以甲基转移酶抑制剂5-氮-2'-脱氧胞苷(5-Aza-CdR)处理;将Runx3-shRNA表达载体转染HepG2/CDDP-1.6细胞,RT-PCR检测处理及转染前后细胞Runx3 mRNA的表达。MTT法检测细胞的增殖活性,流式细胞仪分析细胞周期,Hoechst 33258检测凋亡,Western blot检测P-gp表达的变化。 结果 在动态变化模型中随CDDP诱导时间的延长,Runx3 mRNA的表达逐渐降低。5-Aza-CdR处理后Runx3 mRNA的表达增加,细胞生长受到明显抑制,S期细胞逐渐增加,凋亡细胞明显增多,细胞内P-gp的表达减少。转染Runx3-shRNA载体后HepG2/CDDP-1.6细胞对CDDP的耐受性增强,G₁期细胞增加,P-gp的表达增加。 结论 Runx3基因的表达可抑制HepG2/CDDP耐药的形成,提高HepG2/CDDP细胞对化疗药物的敏感性。

Abstract: Objective To determine the effect of Runx3 in drug resistance against hepatocellular carcinoma cells. Methods HepG2/cisplatin(CDDP) kinetic anti-cancer drug resistance model was constructed using anti-cancer drug inducing method and treated with 5-Aza-2'-deoxycytidine (5-Aza-CdR) for different periods of time. Runx3-shRNA expression vectors were transfected into drug-resistant HepG2 cells. Reverse transcription-polymerase chain reaction (RT-PCR) was used to detect Runx3 mRNA expression before and after transfection. Cell viability was evaluated by MTT assay, and apoptosis was analyzed using Hoechst 33258. Flow cytometry (FCM) was used to detect the cell cycle distribution, and Western blotting was used to measure the expression levels of P-gp and Runx3. Results The expression of Runx3 mRNA was decreased with the increasing drug resistance against HepG2 cells.

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However, it was increased gradually after treated with 5-Aza-CdR, and cell proliferation was inhibited obviously. The cells at S phase and apoptotic cells were increased. Also, 5-Aza-CdR resulted in a decrease of P-gp. Down-regulation of Runx3 in drug-resistant HepG2 cells promoted the cell proliferation, the cell cycle arrested at G₁, and increased expression of P-gp, which indicated that it inhibited the drug sensitivity. Conclusion Runx3 may play an inhibitive role in drug resistance, and up-regulation of Runx3 might prove cancer cells more sensitive to chemotherapy.

参考文献/REFERENCES

郭元红, 陈伟庆, 房殿亮. Runx3基因对HepG2细胞顺铂耐药性的影响[J].第三军医大学学报,2012,34(9):813-816.

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