沉默HOXB7基因表达在电离辐射诱导肺腺癌细胞上皮间质转化和迁移中的作用

《现代肿瘤医学》[ISSN:1672-4992/CN:61-1415/R] 期数: 2019年20期 页码: 3547-3551 栏目: 论著（基础研究） 出版日期: 2019-09-08

Title: **Role of silencing HOXB7 expression in EMT and migration of lung adenocarcinoma cells induced by ionizing radiation**

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关键词: 肺腺癌; 电离辐射; HOXB7; 上皮间质转化; 迁移

Keywords: lung adenocarcinoma; ionizing irradiation; HOXB7; epithelial-mesenchymal transformation; migration

分类号: R734.2

DOI: 10.3969/j.issn.1672-4992.2019.20.001

文献标识码: A

摘要: 目的：探讨HOXB7对电离辐射诱导的肺腺癌细胞上皮间质转化和迁移能力的影响。方法：采用Western blot 检测蛋白表达变化，划痕实验和 Transwell迁移实验检测电离辐射对肺腺癌A549细胞迁移能力的影响。结果：用不同剂量X-射线辐照A549细胞，发现2 Gy X-射线辐照HOXB7表达量最高；用2 Gy X-射线辐照A549细胞，发现辐照后第3天HOXB7表达量最高；Western blot 检测发现电离辐射明显上调上皮间质转化标志蛋白的表达；划痕实验及Transwell迁移实验证明电离辐射增强A549细胞迁移能力。沉默HOXB7 后，电离辐射诱导的A549细胞上皮间质转化及迁移能力明显减弱。结论：HOXB7是电离辐射诱导肺腺癌细胞上皮间质转化和迁移的关键蛋白。

Abstract: Objective:To investigate the effect of HOXB7 on ionizing irradiation(IR)-induced EMT and migration in lung adenocarcinoma(LAC) A549 cells.Methods:The expression of proteins was detected by Western blot.The transfected and non-transfected A549 cells were exposed to 2 Gy X-ray,the migration of A549 cells were anlalyzed by Transwell migration assay and scratch wound healing.Results:The protein level of HOXB7 in A549 cells was the highest after treatment with 2 Gy X-ray.The protein level of HOXB7 in A549 cells was the highest after 3 d of exposure with 2 Gy X-ray.Western blot resules identified that ionizing irradiation up-regulated the expression of epithelial to mesenchymal market protein.Transwell migration assay and scratch wound healing identified that ionizing irradiation increase the migratory capacity of A549 cells.The epithelial to mesenchymal and migratory capacity was remarkably decreased of A549 cells after down-regulation of HOXB7 in A549 cells.Conclusion:HOXB7 is the key protein in ionizing irradiation-induced epithelial to mesenchymal and migration of lung adenocarcinoma A549 cells.

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备注/Memo: National Natural Science Foundation of China(No.81602687）；国家自然科学基金项目（编号：81602687）;四川省科技计划项目（编号：2016JY0029）;四川省卫计委科研课题（编号：16PJ026）

更新日期/Last Update: 1900-01-01