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Snail促进乳腺癌MCF-7细胞移植瘤对多柔比星的耐药及其机制 [点此下载全文](#)

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摘要:

目的: 探讨Snail在乳腺癌MCF-7细胞移植瘤对多柔比星耐药中的作用及其可能的机制。方法: 构建 Snail 基因真核表达载体 pcDNA3.1-Snail, 转染至MCF-7细胞, 筛选稳定表达Snail的MCF-7/Snail细胞, 以转染空质粒pcDNA3.1的MCF-7细胞(MCF-7/pcDNA)为对照。构建小鼠MCF-7/Snail及MCF-7/pcDNA细胞移植瘤模型, 注射多柔比星, 观测移植瘤生长, 计算抑瘤率。免疫组织化学方法检测移植瘤组织中Snail、多药耐药基因-1(multidrug resistance-1, MDR-1)和基质金属蛋白酶-9(matrix metalloproteinase-9, MMP-9)的表达。结果: 成功构建pcDNA3.1-Snail表达载体, 转染MCF-7细胞后获得MCF-7/Snail和MCF-7/pcDNA细胞, 并制备小鼠移植瘤。多柔比星治疗后, MCF-7/Snail细胞移植瘤的瘤重明显高于MCF-7/pcDNA细胞移植瘤[(1.413±0.674)g vs (1.257±0.576)g, P < 0.05], 多柔比星对MCF-7/Snail移植瘤抑瘤率明显低于MCF-7/pcDNA移植瘤(18.42% vs 30.18%, P < 0.05), MCF-7/Snail细胞移植瘤的组织中Snail、MDR-1、MMP-9的表达均显著高于MCF-7/pcDNA移植瘤(408.08±20.39 vs 67.67±16.56, 363.50±26.56 vs 55.08±12.23, 396.25±16.03 vs 56.92±7.35; 均 P < 0.01), 且Snail与MDR-1和MMP-9的表达均呈正相关($r_1=0.89$, P < 0.01; $r_2=0.81$, P < 0.01)。结论: Snail促进乳腺癌MCF-7细胞移植瘤对多柔比星的耐药, 其机制与增强MDR-1和MMP-9表达有关。

关键词: [乳腺肿瘤](#) [多柔比星](#) [Snail](#) [MDR-1](#) [MMP-9](#)

Snail increases resistance of breast cancer MCF-7 cell transplanted tumors to doxorubicin and its mechanism [Download Fulltext](#)

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Abstract:

Objective: To study the effect of Snail on resistance of breast cancer MCF-7 cell transplanted tumors to doxorubicin and its possible mechanism. Methods: Snail eukaryotic expression vector pcDNA3.1-Snail was constructed and transfected into MCF-7 cells, and MCF-7 cells with stable Snail expression (MCF-7/Snail cells) were screened. MCF-7 cells transfected with blank pcDNA3.1 (MCF-7/pcDNA cells) were used as control. MCF-7/Snail- and MCF-7/pcDNA-cell transplanted tumor models were established. After doxorubicin injection, the growth of transplanted tumors was observed, and the inhibitory rate of doxorubicin was calculated. The expressions of Snail, MDR-1 and MMP-9 in transplanted tumor tissues were examined by immunohistochemistry. Results: pcDNA3.1-Snail expression vector was successfully constructed, and MCF-7/Snail and MCF-7/pcDNA cells were obtained. After doxorubicin therapy, the transplanted tumor weight in MCF-7/Snail group was significantly higher than that in the MCF-7/pcDNA group ([1.413±0.674]g vs [1.257±0.576]g, P < 0.05), and the inhibitory rate of doxorubicin was significantly lower (18.42% vs 30.18%, P < 0.05). The expressions of Snail, MDR-1 and MMP-9 in transplanted tumor tissues were significantly higher than those in MCF-7/pcDNA group (408.08±20.39 vs 67.67±16.56, 363.50±26.56 vs 55.08±12.23, 396.25±16.03 vs 56.92±7.35, all P < 0.05), and the expression of Snail was positively correlated with that of MDR-1 and MMP-9 ($r_1=0.89$, P < 0.01; $r_2=0.81$, P < 0.01). Conclusion: Snail can increase resistance of breast cancer MCF-7 cell transplanted tumors to doxorubicin, which might be related with the increased expressions of MDR-1 and MMP-9 in breast cancer MCF-7 transplanted tumors.

Keywords: [breast neoplasms](#) [doxorubicin](#) [Snail](#) [MDR-1](#) [MMP-9](#)

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