

论著

## 乳腺癌细胞株MCF-7/ADM中肿瘤干细胞的研究

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**摘要** 目的: 通过对阿霉素耐药乳腺癌细胞系MCF-7/ADM中乳腺癌干细胞(breast cancer stem cells, BCSCs)成分分析, 观察化疗耐药处理的MCF-7乳腺癌细胞株是否可高效富集乳腺癌干细胞, 为研究乳腺癌的发病机制提供思路。

方法: MTT法分别测定阿霉素耐药乳腺癌细胞系MCF-7/ADM及其亲本细胞株MCF-7对阿霉素的IC<sub>50</sub>, 计算其耐药倍数。通过细胞侧群(side population, SP)分析、球囊培养、流式细胞仪检测MCF-7/ADM及MCF-7中CD<sup>+</sup>44CD<sup>-</sup>24细胞比例三方面鉴定MCF-7/ADM和MCF-7中乳腺癌干细胞比例。

结果: 阿霉素耐药乳腺癌细胞系MCF-7/ADM相对于MCF-7对阿霉素的耐药倍数为37.1; MCF-7/ADM中SP细胞比例为(9.60±0.66)%, MCF-7细胞的SP细胞比例为(0.39±0.11)%; 两者球囊形成率分别为(10.27±0.64)%和(1.03±0.15)%; 两者的CD<sup>+</sup>44CD<sup>-</sup>24细胞比例分别为(64.87±3.87)%和(3.70±0.53)%, 差异显著(P<0.05)。

结论: 阿霉素耐药乳腺癌细胞系MCF-7/ADM中乳腺癌干细胞比例明显高于MCF-7细胞。化疗耐药处理的MCF-7乳腺癌细胞株可高效富集乳腺癌干细胞, 这对于乳腺癌发病机制的研究具有重要意义。

**关键词** [乳腺癌肿瘤](#) [肿瘤干细胞](#) [药物耐受](#)

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## Analysis of cancer stem cells in breast cancer cell line MCF-7/ADM

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### Abstract

<FONT face=Verdana>AIM: This study is designed to demonstrate the drug resistance breast cancer cell line MCF-7/ADM has a higher proportion of cancer stem cells than its original parent cell line MCF-7 in vitro.<BR>METHODS: Firstly, the drug resistance of MCF-7/ADM was estimated by MTT method, and then higher proportion of cancer stem cells in MCF-7/ADM than that in MCF-7 was demonstrated by three aspects: side population analysis, sphere culture and cell surface markers of breast cancer stem cells.<BR>RESULTS: The drug resistance index of MCF-7/ADM compared to MCF-7 was 37.1. The proportion of side population in MCF-7/ADM and MCF-7 was 9.60%±0.66% versus 0.39%±0.11%; The proportion of sphere-initiating cells in MCF-7/ADM and MCF-7 was 10.27%±0.64% versus 1.03%±0.15%, and the proportion of CD<sup>+</sup>44CD<sup>-</sup>24 cells in these two cell lines was 64.87%±3.87% versus 3.70%±0.53%, all are statistically significant.<BR>CONCLUSION: ADM resistance breast cancer cell line MCF-7/ADM has a higher proportion of cancer stem cells than that in its original cell line MCF-7.</FONT>

**Key words** [Breast neoplasms](#) [Tumor stem cells](#) [Drug resistance](#)

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