155~159.青蒿琥酯逆转食管癌Eca109/ADM细胞对多柔比星的耐药[J].刘亮,左静,李金丫,郭建文,左连富,王静,刘江惠.中国肿瘤生物治疗杂志,2011,18(2)

# 青蒿琥酯逆转食管癌Eca109/ADM细胞对多柔比星的耐药 点此下载全文

刘亮 左静 李金丫 郭建文 左连富 王静 刘江惠

河北医科大学 第四医院 肿瘤研究所 流式细胞室，河北 石家庄 050011;河北医科大学 第四医院 肿瘤内科，河北 石家庄 050011;河北医科大学 第四医院 肿瘤研究所 流式细胞室，河北 石家庄 050011;河北医科大学 第四医院 肿瘤研究所 流式细胞室，河北 石家庄 050011;河北医科大学 第四医院 肿瘤研究所 流式细胞室，河北 石家庄 050011;河北医科大学 第四医院 肿瘤研究所 流式细胞室，河北 石家庄 050011

**基金项目：**河北省自然科学基金资助项目（No.C2007001060）；河北省普通高等学校强势特色学科肿瘤学基金资助项目（No.\[2005\]52）

DOI：

**摘要：**

目的：研究青蒿琥酯（artesunate, Art）逆转食管癌细胞Eca109/ADM对多柔比星（doxorubicin，ADM）的耐药作用及其机制。方法：实验分为生理盐水(normal saline, NS)对照组（NS组）、Art组（0.1 μmol/L）、ADM组（0. 2 μg/ml）和Art+ADM联合组。Art、ADM、Art+ADM作用Eca109/ADM细胞48 h后，流式细胞术检测细胞凋亡率、细胞内ADM的含量及细胞中三磷酸腺苷结合转运蛋白G超家族成员2（ATP-binding cassette transporter G2, ABCG2）蛋白的表达量，Western blotting检测细胞中ABCG2蛋白表达水平。结果：Art+ADM 作用Eca109/ADM细胞48 h后，细胞的凋亡率\[(12.89±0.87)%\]显著高于Art组\[(1.58±0.12)%\]、ADM组\[(6.55±0.90)%\]及NS组\[(1.44±0.10)%\] (P<0.05)，Art可提高Eca109/ADM细胞对ADM的敏感性。流式细胞术检测结果显示，Art+ADM组Eca109/ADM细胞中ABCG2 蛋白表达量（644.60±3.21）显著低于ADM组 (659.15±4.59)及NS组(658.14±6.88) (P<0.05)，但与Art组(644.31±3.96) 相比无显著差异(P>0.05)。Western blotting检测结果与流式细胞术结果一致，Art组Eca109/ADM细胞中ABCG2蛋白的表达水平为（0.70±0.02），与对照组的（0.80±0.03）相比显著降低（P<0.05），Art+ADM组的ABCG2蛋白（0.71±0.04）与单独应用ADM组的ABCG2蛋白（0.81±0.05）相比，ABCG2蛋白表达水平显著降低（P<0.05）。Art+ADM 组Eca109/ADM细胞内ADM的含量(848.02±5 04)显著高于单独应用Art组(763.29±4.02)、ADM组(800.25±3.84)及NS组(763.88±2.03) (P<0.01)。结论：Art可以降低食管癌Eca109/ADM细胞内ABCG2蛋白表达，增加ADM的含量，逆转肿瘤细胞对ADM的耐药。

**关键词：**青蒿琥酯 多柔比星 耐药逆转 三磷酸腺苷结合转运蛋白G超家族成员2(ABCG2)

## Role of artesunate in resistance-reversal of esophageal cancer Eca109/ADM cells to doxorubicin Download Fulltext

LIU Liang ZUO Jing LI Jin-ya GUO Jian-wen ZUO Lian-fu WANG Jing LIU Jiang-hui

Department of FCM Analysis, Tumor Institute, Forth Hospital of Hebei Medical University, Shijiazhuang 050011, Hebei, China;Department of Internal Oncology, Forth Hospital of Hebei Medical University, Shijiazhuang 050011, Hebei, China;Department of FCM Analysis, Tumor Institute, Forth Hospital of Hebei Medical University, Shijiazhuang 050011, Hebei, China;Department of FCM Analysis, Tumor Institute, Forth Hospital of Hebei Medical University, Shijiazhuang 050011, Hebei, China;Department of FCM Analysis, Tumor Institute, Forth Hospital of Hebei Medical University, Shijiazhuang 050011, Hebei, China;Department of FCM Analysis, Tumor Institute, Forth Hospital of Hebei Medical University, Shijiazhuang 050011, Hebei, China

Fund Project:Project supported by the Natural Science Foundation of Heibei Province (No. C2007001060), and the Key Specific Discipline Foundation of Higher Institutions of Hebei Province (No. \[2005\]52)

Abstract:

Objective:To explore the role of artesunate (Art) in resistance-reversal of Eca109/ADM cells and the related mechanism. Methods：The present study was divided into 4 groups: normal saline (NS) control group, Art (0.1 μmol/L) group, ADM (0.2 μg/ml) group, and Art (0.1 μmol/L)+ADM (0.2 μg/ml) group. The apoptosis rate, ADM content and ABCG2 (ATP-binding cassette transporter G2) protein expression in Eca109/ADM cells were detected by flow cytometry 48 h after treated with Art, ADM, and Art+ADM. ABCG2 protein expression in Eca109/ADM cells was further examined by Western blotting analysis. Results：The apoptosis rate of Eca109/ADM cells in Art+ADM group was (12.89±0.87)%, being significantly higher than that in the Art group (1.58±0.12)%, ADM group (6.55±0 90)% and NS group (1.44±0.10)% (P<0.05). Art increased the sensitivity of Eca109/ADM cells to ADM. Flow cytometry results showed that the ABCG2 protein expression in Eca109/ADM cells of Art+ADM group (644.60±3.21) was significantly lower than that in ADM group (659.15±4.59) and NS group (658.14±6.88) (P<0.05), but was similar to that in Art group (644.31±3.96) (P>0.05). Western blotting analysis results were consistent with those detected by flow cytometry. The ABCG2 protein expression of Eca109/ADM cells in Art group (0.70±0.02) was significantly decreased compared with NS group (0.80±0.03) (P<0.05), and that in Art+ADM group (0.71±0.04) was also decreased compared with ADM group (0.81±0.05) (P<0.05). The ADM content of Eca109/ADM cells in Art+ADM group was significantly higher than those in Art, ADM and NS groups (848.02±5.04 vs 763.29±4.02, 800.25±3.84, 763.88±2.03; P<0.01). Conclusion: Art can decrease ABCG2 protein expression and increase ADM content in Eca109/ADM cells, and it can also reverse the drug resistance of Eca109/ADM cells.

Keywords:artesunate doxorubicin resistance-reversal ATP-binding cassette transporter G2 (ABCG2)

主管单位：中国科学技术协会 主办单位：中国免疫学会、中国抗癌学会
地址：上海市杨浦区翔殷路800号 邮政编码：200433 京ICP备06011393号-2
本系统由北京勤云科技发展有限公司设计