

论著

# 乳腺癌组织中DNA甲基化转移酶与多药耐药基因ABCG2表达的关系

周建孟<sup>1,2</sup>, 袁建辉<sup>2</sup>, 姬娜娜<sup>2</sup>, 刘建军<sup>2</sup>, 庄志雄<sup>1,2</sup>,

1.中山大学公共卫生学院, 广东 广州 510080; 2.深圳市疾病预防控制中心, 广东

收稿日期 2008-10-20 修回日期 2009-1-20 网络版发布日期:

**摘要** 背景与目的: 研究乳腺癌组织中DNA甲基化转移酶(DNA methyltransferase, DNMT)与多药耐药基因ABCG2表达的关系, 以进一步探讨ABCG2表达的表观遗传学机制。材料与方法: 用实时定量RT-PCR法检测22例乳腺癌及其匹配的癌旁组织中DNMT1、DNMT3A、DNMT3B和ABCG2的表达, 并采用Spearman等级相关分析DNMTs与ABCG2基因表达的相关性。结果: 乳腺癌组织中ABCG2、DNMT1、DNMT3A、DNMT3B mRNA表达量显著高于癌旁组织(P<0.01), 并且DNMT3B表达量显著高于DNMT1和DNMT3A(P<0.01), 与ABCG2基因表达呈负相关性(r=-0.664, P<0.01)。结论: 乳腺癌组织中DNMT3B可能参与了ABCG2基因的表达调控, 这为寻找药物靶点并逆转其介导的药物耐受提供了新的科学依据。

**关键词** [乳腺癌](#); [甲基化转移酶](#); [ABCG2](#); [实时定量RT-PCR](#)

## The Relationship between the Expression of DNA Methyltransferase and Multidrug

ZHOU Jian-meng<sup>1,2</sup>, YUAN Jian-hui<sup>2</sup>, JI Na-na<sup>2</sup>, LIU Jian-jun<sup>2</sup>, ZHUANG Zhi-xiong<sup>1,2</sup>

1. School of Public Health, Sun Yat-Sen University, Guangzhou 510080; 2. Shenzhen Center for Disease Control and Prevention, Shenzhen 518020, China

**Abstract** BACKGROUND AND AIM: We investigated the relationship between the expression of DNA methyltransferase(DNMT) and multidrug resistance gene ABCG2 in breast cancer, in order to further study the epigenetic mechanism of ABCG2 expression. MATERIALS AND METHODS: Use real-time transcription-PCR(RT-PCR) to quantify DNMTs and ABCG2 mRNA expressions in 22 breast cancer and their matching adjacent tissues. We also used Spearman rank test to analyze the relationship between mRNA levels of the DNMTs and target gene ABCG2 involved in the DNMT pathway. RESULTS: Compared with adjacent tissues, the mRNA expressions of DNMTs and ABCG2 were markedly higher in breast cancer, especially DNMT3B, which was significantly higher than that of DNMT1 and DNMT3A. There was a negative relationship between DNMT3B and ABCG2(r=-0.664, P<0.01) in breast cancer. CONCLUSION: DNMT3B may play an important role in the epigenetic mechanism of ABCG2 expression in breast cancer, providing new scientific basis for searching the therapeutic target to reverse the multidrug resistance caused by ABCG2.

**Keywords** [breast cancer](#) [DNMT](#) [ABCG2](#) [real-time quantitative RT-PCR](#)

DOI

通讯作者 [zxzhuang2007@126.com](mailto:zxzhuang2007@126.com)

### 扩展功能

#### 本文信息

- ▶ [Supporting info](#)
- ▶ [\[PDF全文\]\(243k\)](#)
- ▶ [\[HTML全文\]\(43k\)](#)

#### 参考文献

#### 服务与反馈

- ▶ [把本文推荐给朋友](#)
- ▶ [加入我的书架](#)
- ▶ [Email Alert](#)

#### 相关信息

- ▶ [本刊中 包含“乳腺癌; 甲基化转移酶; ABCG2; 实时定量RT-PCR” 的相关文章](#)
- ▶ [本文作者相关文章](#)

· [周建孟](#)

· [袁建辉](#)

· [姬娜娜](#)

· [刘建军](#)

· [庄志雄](#)