

Promoter CpG Methylation of Caveolin-1 in Sporadic Colorectal Cancer

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摘要

Abstract

BACKGROUND: Caveolin-1 has been shown to be down-regulated in human colon cancer and involved in colon tumorigenesis. We investigated the mechanism. MATERIALS AND METHODS: Cancerous and nearby non-cancerous tissues of 185 sporadic colorectal cancer samples were enrolled in this study. Methylation-specific PCR was performed to explore the mechanism of regulation of caveolin-1 gene expression. RESULTS: Aberrant promoter methylation in the caveolin-1 gene was 3.8% and 5.9% for cancerous and nearby non-cancerous tissues, respectively. All the cancerous and non-cancerous tissue contained unmethylated promoters in the caveolin-1 gene. The methylation status of caveolin-1 had no clear relationship with age, cell grade, location of tumor or lymph node metastasis. However, female gender showed statistically significant difference ($p=0.045$). The immunohistochemistry study demonstrated that expression of caveolin-1 correlated with aberrant promoter methylation status in sporadic colorectal cancer tissues. CONCLUSION: Our findings suggested that aberrant promoter methylation of the caveolin-1 gene may occur at the precancerous stage, regulated by gender-related factors and is associated with gene silencing of caveolin-1 in the development of colorectal cancer.