



The 3rd International Gastrointestinal Cancer Congress



Evaluation of *PLXNA1* expression in Iranian patients with colorectal cancer using Real Time RT-PCR

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Abstract

Introduction and Aims: Colorectal cancer (CRC), one of the most common malignant disorders, is a major cause of death worldwide. Although the rate of incidence of CRC increases with age, beginning age of its incidence has overwhelmingly decreased lately. CRC survival is dependent upon the state of disease at diagnosis, therefore finding early stage molecular indicators results in the higher chance of survival. We aimed to determine the level of *PLXNA1* expression in cancerous and noncancerous tissues of patients at different stages of cancer to develop our molecular insight of CRC.

Methods: In this study, tissue samples from 50 individuals with CRC were collected. Proper primer sequences were designed for both *PLXNA1* and Beta-Actin (internal control gene) genes. RNA was extracted from FFPE samples and cDNA synthesis was done and followed by Real time RT-PCR.

Results: Different results due to different stages of diagnosis were obtained. No change in the expression of *PLXNA1* gene was observed in a few numbers of tissues and the majority of cancerous tissues showed a significant altered expression of *PLXNA1*.

Conclusion: Considering these results it seems *PLXNA1* expression could be a proper indicator for classifying CRC stages. Further study on blood samples is suggested to confirm its probable application.

Keywords: *PLXNA1* gene, colorectal cancer, expression, Real Time RT-PCR.