Indian Journal of Experimental Biology
Vol. 56, September 2018, pp. 629-637

Different Bak and Bax expression in tumor and normal colon tissue

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Received 06 November 2015; revised 24 February 2017

Apoptosis is genetically programmed mechanism of cellular death, triggered by various physiological and pathophysiological conditions. It plays a significant role in prevention of cancer development in the body. In this study, we determined the expression of apoptotic proteins: Bak, Bax, Bcl-2, Bcl-xl and procaspase-3 in colorectal tumor and adjacent normal mucosa, and also investigated the correlation between them and with clinicopathological parameters. Expression of the examined proteins was evaluated on tumor and corresponding healthy tissue specimens using immunohistochemical study. Statistical analysis of the results did not show significant differences in the expression of Bcl-2, Bcl-xl, Bak, Bax and procaspase 3 in colon cancer cells comparing to control. Comparison of its expressions between cancerous and normal tissue on the basis of clinicopathological parameters was found statistically significant for Bak and/or Bax proteins. We also found significant correlation between two proteins: Bak and Bax in healthy mucosa of CRC patients. The differences in Bak and/or Bax expression between tumor and control healthy tissue indicate physiological mechanisms of cell death in healthy mucosa.

Keywords: Apoptosis, Bcl-2, Colorectal cancer, Procaspase-3