

Cytotoxicity of a Short Chain Fatty Acid Histone Deacetylase Inhibitor on HCT116 Human Colorectal Carcinoma Cell Line

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Abstract : Colorectal cancer metastases result in a significant number of cancer related deaths. Histone deacetylase (HDAC) inhibitors induce growth arrest and apoptosis in a variety of human cancer cells. Sodium butyrate (SB) is a short chain fatty acid, belongs to HDAC inhibitors which is released in the colonic lumen as a consequence of fiber fermentation. In this study, we are about to assess the effect of sodium butyrate on HCT116 human colorectal carcinoma cell line. The viability of cells was measured by microscopic morphologic study and MTT assay. After 48 hours, treatments more than 10 mM lead to cell injury in HCT116 by increasing cell granulation and decreasing cell adhesion ($p > 0.05$). After 72 hours, treatments at 10 mM and more lead to significant cell injury ($p < 0.05$). Our results may suggest that the gene expression which is contributed in cell proliferation and apoptosis has been changed under pressure of HDAC inhibition.

Keywords : colorectal cancer, sodium butyrate, cytotoxicity, MTT

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