



The relationship between histone deacetylases with colorectal cancer

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Abstract

Colorectal cancer is the third most common cancer in the world and is the fourth cause of death due to cancer. Epigenetic modifications that include post-translational processes on histone such as acetylation, methylation or phosphorylation, it may be effective in cancer progression. Since the control colorectal cancer prevalence in the country was required, it investigated the relationship between histone deacetylase enzymes with colorectal cancer in this review. It utilizes the latest electronic articles in journals "Science Direct, Springer, OVID" as well as information search database "Web of Science, Scopus, Google scholar" about the relationship between histone deacetylases with colorectal cancer and Data were investigated carefully.

Since histone acetylation and deacetylation affects the gene expression levels of many genes involved in oncogenesis, the activity of histone deacetylase enzymes causing cancer progression and angiogenesis stimulated. In addition, this enzyme is one of the factors in the cell cycle and it decrease cell differentiation and apoptosis rate.

Histone deacetylase inhibitors currently used to treat cancer as a research drug in clinical trials, can lead to block of proliferation and stimulation of differentiation, and induced apoptosis. HDAC3 expressed usually in proliferating crypt cells in normal intestinal. Silencing gene of this type of enzyme causes growth inhibition and increased apoptosis in colorectal cancer.

So HDAC3 inhibitors are remarkable as an agent against colorectal cancer.

Keywords: Histone deacetylase, Colorectal cancer, Apoptosis, Cell differentiation