

## Colorectal Cancer: The Epigenetic Role of Microbiome



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Publish Year: 2015

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**Epigenetic** changes during the development of **colorectal cancer** (CRC) play a significant **role**. Along with factors such as diet, lifestyle, and genetics, oncogenic infection, bacteria alone or whole **microbiome**, has been associated with this tumor type.

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Author: Lulu Farhana, Hirendra Nath Banerjee, M...

Publish Year: 2018

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Introduction

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Cancer is a leading cause of death that is associated with tremendous social and economic burdens. In the USA, the number of cancer survivors is projected to increase from 13.8 to 18.1 million over this decade and to cost \$125 and \$158 billion in healthcare expenses, respectively ( 1 ). In many developing countries, cancer incidence is increasing as a result of demographics (population aging) and the adoption of cancer-associated lifestyle choices such as smoking, 'westernized' diets and phys...

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### Colorectal cancer: The epigenetic role of microbiome

Sabit H *et al.* Microbiome is the second brain

Hussein Sabit, Emre Cevik, and Huseyin Tombuloglu

#### Abstract

Colorectal cancer (CRC) is the third most common cancer in men (746000 cases per year) and the second most common cancer in women globally (614000 cases per year). The incidence rate of CRC in developed countries (737000 cases per year) is higher than in less developed countries (624000 cases per year). CRC could arise from genetic causes such as chromosomal instability and microsatellite instability. Several etiologic factors underlie CRC including age, diet, and lifestyle. Gut microbiota represents a proven cause of the disease, where it plays a pivotal role in modulating and reshaping the host epigenome. Several active microbial metabolites were found to drive carcinogenesis, invasion, and metastasis *via* modifying both the methylation landscape along with histone structure in the gut's cells. Gut microbiota, in response to diet, can

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**Abstract. Epigenetic changes during the development of colorectal cancer (CRC) play a significant role.** Along with factors such as diet, lifestyle, and genetics, oncogenic infection, bacteria alone or whole microbiome, has been associated with this tumor type. How gut microbiome contributes to CRC pathogenesis in the host is not fully understood.

[Role of Microbiome in Carcinogenesis Process and Epigeneti...](#)

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Epigenetic changes during the development of colorectal cancer (CRC) play a significant role. Along with factors such as diet, lifestyle, and genetics, oncogenic infection, bacteria alone or whole microbiome, has been associated with this tumor type.

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Author: Lulu Farhana, Hirendra Nath Banerjee, M...

Publish Year: 2018

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Influence of Epigenetics on Colorectal Cancer. Tumorigenesis is driven not only by mutations but also by dysregulated epigenomic alterations that cause the transcriptome profile of a cancer cell to diverge from the cell of origin. This process includes the inappropriate addition or removal of acetyl and methyl marks at specific histone residues.