

New research indicates key protein may directly impact development of colon cancer

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Researchers have discovered a new role of a protein that, if manipulated, may help suppress Colorectal Cancer (CRC) growth. The discovery, published online by *Oncotarget* journal, may lead to new therapies in managing patients with CRC.

CRC is a complex disease caused by several [genetic mutations](#) and their consequences. In more than 80-percent of CRC patients, some of these mutations can lead to an increase in b-catenin, a vital protein, leading to cancer initiation.

Researchers from Boston University School of Medicine (BUSM), led by Vipul Chitalia, MD, PhD, assistant professor of Medicine, have identified a new role of the protein, c-Cbl that it may be capable of degrading b-catenin in CRC patients.

"We believe these findings could have clinical implications in managing patients with CRC," explains Chitalia. "For example, c-Cbl could be used as a biomarker of patient survival. The discovery may also lead to new strategies to suppress CRC growth."

According to Chitalia, another aspect of this study is related to the method by which researchers analyze human biopsy samples. Until now, the information within biopsies, such as the amount of a specific protein, used to be determined on a semi-quantitative basis. Accurate estimation of relevant content within these images is critical for prognostic and therapeutic purposes.

BUSM researchers, led by Vijaya Kolachalama, PhD, principal investigator at the Whitaker Cardiovascular Institute at BUSM, developed a more accurate, automated and high-throughput image processing technique that was capable of uncovering hidden relationships between important proteins in cancer.

"We are excited about this discovery and the treatments that could improve the quality of life for CRC patients," says Chitalia and his collaborators Kevan Hartshorn, MD, professor of Medicine, and Nader Rahimi, PhD, associate professor of Pathology and Laboratory Medicine "c-Cbl targeted therapy may provide a means to suppress the growth of CRC and possibly with lower side effects."

Every year about 150,000 new cases of [colorectal cancer](#) are diagnosed in the United States. Despite surgery and new therapies, about one third of patients with the disease die from CRC annually, making it the second most common cause of cancer death.

More information: c-Cbl mediates the degradation of tumorigenic nuclear β -catenin contributing to the heterogeneity in Wnt activity in colorectal tumors. [DOI: 10.18632/oncotarget.12107](https://doi.org/10.18632/oncotarget.12107)

Provided by Boston University

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