Calling All Colorectal Cancers!

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Colorectal cancer (CRC) is a type of cancer that starts in the colon or rectum. According to the CDC, CRC represents the 3rd leading cause of cancer deaths and the 3rd most commonly diagnosed cancer type among men and women in the United States.

There are many genetic changes (mutations) that can lead to the development of CRC. The most common involve mutations in the adenomatous polyposis coli (APC) gene. Approximately 80% of human CRC begins with mutations in the APC gene. APC mutations can lead to other genetic changes and frequently to cancer.

In order for CRC to develop and progress, cancer cells need to communicate with each other. To do this, cancer cells hijack the signaling systems (or pathways) normal cells use. A commonly hijacked signaling pathway in CRC development and progression is the Wnt signaling pathway. Throughout the years, researchers have identified many ways by which the Wnt signaling pathway affects cancer development and progression.

A recent study explored how the chemicals glutamine and a-ketoglutarate (aKG), affect the Wnt signaling pathway and subsequent cancer development. Their findings help explain why glutamine, a nutrient that is essential for cancer cell survival, may result in cancer cell adaptations that allow them to live when glutamine is in short supply. The study also found that aKG, which produced from glutamine, has a role in preventing Wnt signaling pathways that are hijacked by cancer cells.

These findings point to new potential CRC treatment approaches.

Source
https://www.nature.com/articles/s43018-020-0035-5
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