New molecular target in battle against colorectal cancer

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Video Byte

Keywords: colorectal cancer, CSC, cancer stem cell, beta-catenin, RAS, oncogene, Cell Communication and Signaling

Posted Date: October 28th, 2020

DOI: <https://doi.org/10.21203/rs.3.rs-99178/v1>

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Abstract

Colorectal cancer is the third most common form of cancer in the world and one of the most lethal. Fortunately, researchers are beginning to find weaknesses in how it operates. One team from Korea is focusing on specialized cells known as cancer stem cells, or CSCs. Like normal stem cells, CSCs possess the ability to self-renew and differentiate into multiple cell types, making them an engine for the spread or recurrence of colorectal cancer. Disrupting CSC activity, therefore, could be one way to shut down colorectal cancer. To do that, the Korean team targeted the Wnt/ β -catenin and RAS/MAPK signaling pathways. These pathways control CSC properties and tend to be over activated in patients with colorectal cancer. Administering KYA1797K, a small molecule that destabilizes β -catenin and RAS proved effective in mice and in lab-grown human cells. KYA1797K suppressed CSCs' capacity to regenerate and therefore limited tumor growth. While this approach isn't quite ready for the clinic, it reveals one effective way of combating the deadly effects of colorectal cancer.