

Researchers identify new stem cell population important in the growth of colon cancer

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Researchers at Lawson Health Research Institute have identified a new stem cell population in the colon linked to cancer growth. The findings, which were recently published in the prominent journal *Cell Stem Cell*, will significantly change the way we study and treat colon cancer.

Colon cancer is the second leading cause of [cancer death](#) in Canada. It is estimated that in 2015 that 25,100 Canadians will be diagnosed with colon cancer representing 13 percent of all new cancer cases.

Dr. Samuel Asfaha, a clinician-scientist at Lawson and an assistant professor of [medicine](#) at the Schulich School of Medicine & Dentistry, Western University, and his colleagues at Columbia University (New York), have identified a previously unknown, long-lived radiation-resistant stem cell population in the colon. Most importantly, they also found that these stem cells can give rise to colonic tumors and sustain their growth. Tissue stem cells are unique cells essential for normal tissue maintenance and regeneration. Their unique characteristic of longevity, however, makes them the most likely cell of origin for cancer. In this study, the researchers sought to identify whether more than one tissue stem cell population exists within the colon which could be a source of colon cancer.

According to Asfaha, the identification of the cellular origin of cancer, specifically [colorectal cancer](#), is critical to the understanding of how cancer arises, as well as for the identification of new targets for drug therapy.

"The identification of more than one stem cell pool in the colon has proven challenging," stresses Asfaha. "These findings are exciting as we have identified an important new target for cancer

therapy. It is also proof that more than one stem cell can give rise to and sustain tumors, telling us that our cancer therapy needs to target more than one stem cell pool."

Until now, the only stem cell population linked to [colon cancer](#) was radiation sensitive, leading physicians to believe that radiation therapy was effective. "With this new information, we now know this is not always true and we must find new forms of therapy to target the disease," says Asfaha.

More information: The study, 'Krt19+/Lgr5- cells are radioresistant cancer-initiating stem cells in the colon and intestine' is published in the June 4 issue of *Cell Stem Cell*.

Provided by Lawson Health Research Institute

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