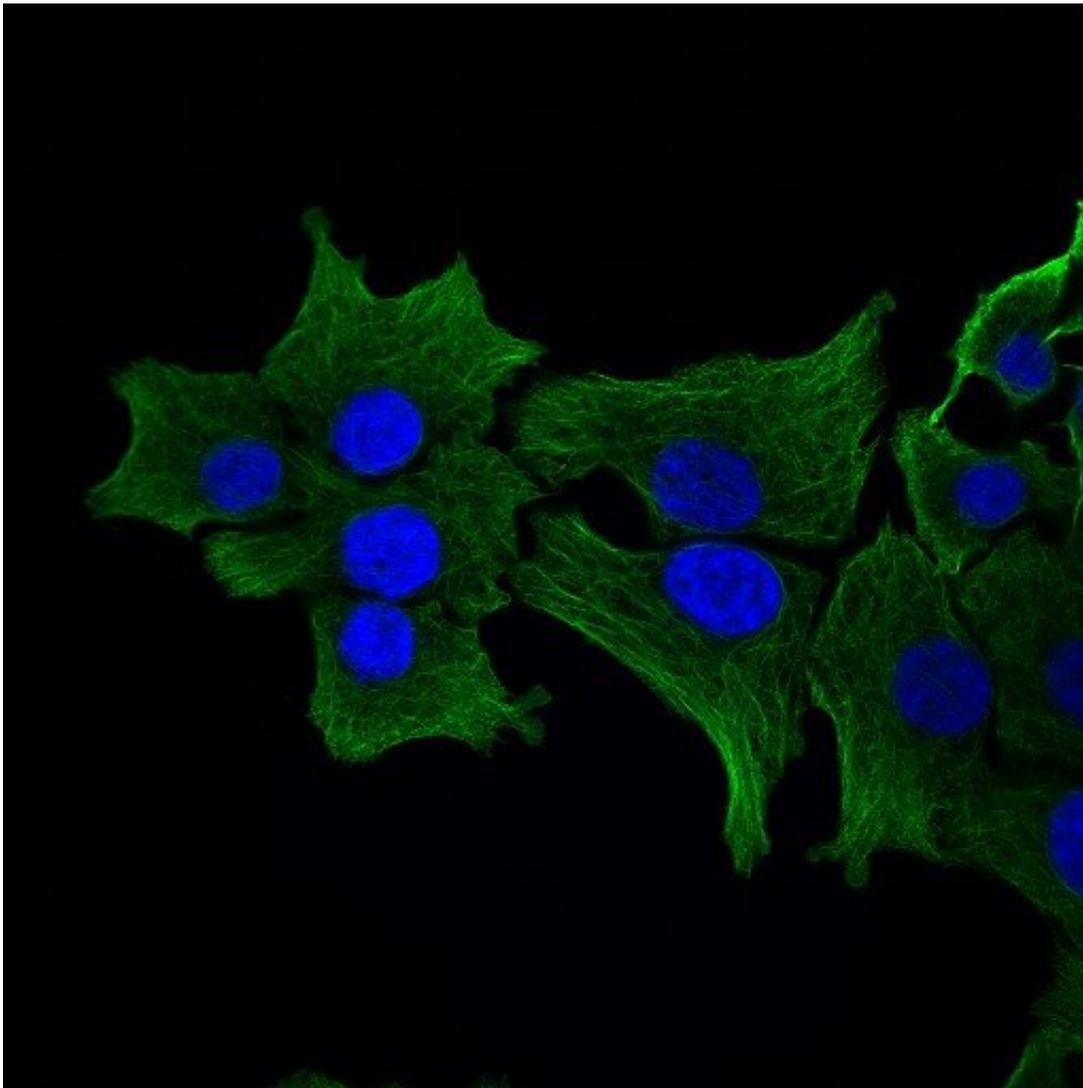


New drugs may kill and limit reproduction of bowel cancer cells

June 17 2021



Credit: Dr Ruby Dawson

Drugs that are being trialed to treat leukemia could also be used to fight bowel cancer after a breakthrough by Hudson Institute of Medical Research scientists.

In a world-first, researchers found that the drugs could potentially be used to fight [bowel cancer](#), using Nobel Prize-winning genetic screening technology CRISPR.

The researchers were using CRISPR to identify new targets for bowel cancer tumors when they realized that the gene KMT2A—usually associated with Acute Myeloid Leukemia—promotes bowel cancer. It does this by fuelling uncontrolled growth of the tumor, and encouraging the [cancer cells](#) ability to 'self-renew,' preventing the tumor from regression or differentiation.

They then trialed two agents that inhibit KMT2A and found that these block bowel cancer growth and self-renewal, with very little damage to normal cells. These inhibitors are very similar to others which are currently in clinical trials to treat leukemia.

"Targeting this gene, KMT2A, reverses the aggressiveness of bowel cancer cells, and re-educates them to become [normal cells](#)," said Dr. Chunhua Wan, first author of the paper published in *Science Advances*.

How targeted therapy works against bowel cancer

Targeted therapy is a relatively new way of treating bowel cancer. It has many advantages over conventional therapies such as chemotherapy and radiotherapy, as it only affects cancer cells, is better tolerated by patients and has fewer side effects.

"Due to limited therapeutic options, bowel cancer patients, especially those diagnosed at late stages, have very poor outcomes. Our findings

may pave the way to developing new targeted therapies and benefit the treatment of bowel cancer patients," said Associate Professor Ron Firestein.

About bowel cancer

- Bowel cancer is the second deadliest cancer in the Australian general population
- About 300 Australians are diagnosed with bowel cancer every week and more than 100 Australians die from the disease
- Australian women have an eight percent risk and men have a 10 percent risk of developing bowel cancer.

More information: Chunhua Wan et al, Genome-scale CRISPR-Cas9 screen of Wnt/ β -catenin signaling identifies therapeutic targets for colorectal cancer, *Science Advances* (2021). [DOI: 10.1126/sciadv.abf2567](https://doi.org/10.1126/sciadv.abf2567)

Provided by Hudson Institute of Medical Research

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