

# Potential new treatment for gastrointestinal cancers discovered

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Associate Professor Matthias Ernst and colleagues have identified a potential new treatment for certain types of colon and gastric cancers.

(Medical Xpress)—Researchers have identified a complex of proteins that promotes the growth of some types of colon and gastric cancers, and shown that medications that block the function of this complex have the potential to be developed into a new treatment for these diseases.

The complex of proteins, known as mTorc1 (mammalian target of rapamycin complex 1), has previously been implicated in the development of some other cancers but this is the first time it has been shown to promote the growth of colon and gastric cancers that are associated with inflammation. Their findings are published online today in the [Journal of Clinical Investigation](#).

Cancers of the digestive system are a significant cause of death in Australia. Colon (or bowel) cancer causes more than 4000 deaths annually – more than any other cancer except lung cancer – while more than 1000 Australians die from gastric (or stomach) cancer each year.

Associate Professor Ernst said many types of colon and [gastric cancer](#) were associated with [chronic inflammation](#). "We have previously shown that the immune system's inflammatory response can promote the growth of tumours," he said. "In the digestive system, persistent [inflammatory conditions](#) have been linked with tumour growth: patients who have [stomach ulcers](#) or gastritis (inflammation of the stomach lining) are more susceptible to gastric cancer, while inflammation of the colon, called colitis, is associated with an increased risk of developing [colon cancer](#)."

The research team found that inflammation-associated gastric and colon cancers showed activation of mTorc1, an aggregate of proteins that signals inside cells to promote growth. Many [cancer types](#) depend on mTorc1 activity to grow, and there is considerable interest in the use of mTorc1 inhibitors to treat cancer.

The growth of inflammation-associated colon and gastric cancers could be treated with mTorc1 inhibitors, Associate Professor Ernst said. "We were excited to discover that the growth of these cancers in laboratory models could be prevented by treatment with mTorc1 inhibitors that are already in clinical trials for other types of cancer," he said. "In the future, we hope that this finding might lead to better treatment options for colon and gastric cancers that are associated with inflammation. Since there are also other types of cancer that are associated with inflammation, we suspect that these could also be susceptible to treatment with mTorc1 inhibitors."

Provided by Walter and Eliza Hall Institute of Medical Research

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