

Careless cancer cells may be susceptible to future drugs

March 11 2020



Credit: CC0 Public Domain

Could the ability of cancer cells to quickly alter their genome be used as a weapon against malignant tumors? Researchers at Uppsala University have developed a substance that has demonstrated promising results in experiments on both animal models and human cancer cells. The study is published in the journal *Nature Communications*.

It is typical of [cancer cells](#) that they can quickly alter their DNA; however, in their haste to acquire new mutations, they carelessly discard many of their inherited genetic variations. This may lead to cancer cells only retaining a defective allele of a gene from one parent, whereas [healthy cells](#) also have a functioning allele from the other parent. This characteristic of cancer cells may well be an Achilles heel that can be used in the development of new drugs.

"We searched for genes of which many people carry both a functioning and defective allele in their DNA. One such gene, NAT2, produces a protein that metabolizes a number of drugs and is of particular interest as one allele is often lost during the development of colon and rectal cancer," explains Tobias Sjöblom of Uppsala University's Department of Immunology, Genetics and Pathology.

Based on their discovery, the researchers developed a substance that kills cells lacking NAT2 and were also able to demonstrate that it can be used to treat animal models of cancer and tumor cells from patients.

"The conditions for treatment exist in 50,000 of the colorectal cancer patients diagnosed globally each year, and we will therefore continue working to identify [substances](#) with even better properties for pharmaceutical development," says Tobias Sjöblom.

More information: Exploiting loss of heterozygosity for allele-selective colorectal cancer chemotherapy, *Nature Communications* (2020). [DOI: 10.1038/s41467-020-15111-4](https://doi.org/10.1038/s41467-020-15111-4)

Provided by Uppsala University

Citation: Careless cancer cells may be susceptible to future drugs (2020, March 11) retrieved 22

May 2024 from <https://medicalxpress.com/news/2020-03-careless-cancer-cells-susceptible-future.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.