

Some breast cancer tumors may be resistant to a common chemotherapy treatment

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Some breast cancer tumours may be resistant to a common chemotherapy treatment, suggests recent medical research at the University of Alberta.

Principal investigator Ing Swie Goping and her team discovered some breast [cancer tumours](#) had low levels of certain [genes](#), and that those tumours didn't respond well to taxane [chemotherapy](#), a common treatment used in breast cancer.

"These tumours didn't shrink and were resistant to a common [chemotherapy treatment](#). These results give us a strong incentive to continue our research," she said.

Goping and her team looked at tumour samples from 24 patients who had breast cancer. These patients were treated with chemotherapy before surgery. The team discovered four genes in the 'survival' system of tumour cells weren't functioning well in some of the samples. When parts of this system don't work the way they are supposed to, the tumour survival system gets weaker.

Researchers expected that because this survival system was weaker in some tumours, that chemotherapy treatment would be more effective at shrinking these tumours. But the opposite happened.

Instead, they found that the stronger the tumours' survival system was, the better the chemotherapy worked.

"This discovery was a bit of a surprise," said Goping, a researcher in both the Department of Biochemistry and the Department of Oncology.

"One would expect that [tumour cells](#) with strong survival systems would be more chemotherapy-resistant, but that's not what we discovered."

Goping noted this research was purely curiosity-driven, and the finding underscores the importance of basic research.

"It was a question we were asking at a very basic level and it turns out the discovery could be clinically relevant. At the moment there is no tool to determine which women would be good candidates for taxane chemotherapy. And chemotherapy resistance is a major clinical problem."

Goping hopes to continue this research by examining tumour samples from thousands of patients over a span of at least three years, in hopes of confirming what the team discovered is indeed a 'marker' that will predict which breast cancer patients will respond well to taxane chemotherapy.

She noted it would be years before doctors would be able to actually start testing [breast cancer](#) patients for this marker.

More information: The study was published in the peer-reviewed journal *Oncogene*.

Provided by University of Alberta

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