

Researchers uncovering how ovarian cancer resists chemotherapy

March 2 2011

York University researchers have zeroed in on a genetic process that may allow ovarian cancer to resist chemotherapy.

Researchers in the university's Faculty of Science & Engineering studied a tiny strand of our genetic makeup known as a MicroRNA, involved in the regulation of gene expression. Cancer occurs when gene regulation goes haywire.

"Ovarian cancer is a very deadly disease because it's hard to detect," says biology professor Chun Peng, who co-authored the study. By the time it's diagnosed, usually it is in its late stages. And by that point there's really no way to treat the disease. Even when the disease is discovered in its early stages, [chemotherapy](#) doesn't always work," she says.

Peng was among a team of researchers that discovered a receptor, ALK7, that induces cell-death in epithelial ovarian [cancer cells](#). They have now discerned that microRNA 376c targets this crucial receptor, inhibiting its expression and allowing ovarian cancer cells to thrive.

"Our evidence suggests that microRNA 376c is crucial to determining how a patient will respond to a chemotherapeutic agent," says Peng. "It allows cancer cells to survive by targeting the very process that kills them off," she says.

In examining tumours taken from patients who were non-responsive to chemotherapy, researchers found a higher expression of microRNA

376c and a much lower expression of ALK7.

Peng believes that this research is a step towards being able to make chemotherapy drugs more effective in the treatment of the disease.

"Further study is needed, but ultimately if we can introduce anti-microRNAs that would lower the level of those microRNAs that make cancer cells resistant to chemotherapeutic drugs, we will be able to make chemotherapy more effective against ovarian cancer," Peng says.

She urges women to educate themselves about the risk factors and symptoms of the disease. For more information, visit <http://www.ovariancanada.org> .

Peng is a world expert in the area of ovarian cancer and the molecular basis of complications in pregnancy. Her research on chemo-resistance has also contributed to knowledge and prediction of pre-eclampsia, a pregnancy disorder that is a leading cause of maternal and perinatal complications and death.

The article, "MicroRNA 376c enhances [ovarian cancer](#) cell survival by targeting activin receptor-like kinase 7: implications for chemoresistance," was published in the *Journal of Cell Science*.

Provided by New York University

Citation: Researchers uncovering how ovarian cancer resists chemotherapy (2011, March 2) retrieved 26 April 2024 from <https://medicalxpress.com/news/2011-03-uncovering-ovarian-cancer-resists-chemotherapy.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.