

# Researcher and her students discover lesser-known gene associated with breast cancer

31 July 2018



Credit: Villanova University

Villanova University biology professor Janice Knepper, PhD, and her students have discovered that a gene, previously poorly characterized, can be associated with breast cancer. Over the last eight years, Knepper and her students have been working with the gene, ZC3H8, simply known as Fliz1. The findings were recently published in *BMC Cancer*, a peer-reviewed open-source medical journal.

Researchers and oncologists relentlessly study how [genes](#) affect cancer development and progression. When looking at individual genes in cancer, the genes either help promote it, which leads to more aggressive forms of cancer, or they help prevent it. The Villanova team discovered that Fliz1 can contribute to more aggressive behavior in cancer. However, this is just the start of the process.

"In terms of the impact on the medical field, this is step one," said Knepper. "There are more than 20,000 genes in the human body and 70 are currently used to assess prognosis for [breast](#)

[cancer](#). We're not oncologists, but we certainly can see how down the road clinicians would be able to better identify disruptive genes in a breast [cancer](#) diagnosis. This gene was certainly not on their radar before."

Fliz1 is an essential gene, one that cells cannot live without. The team is continuing additional tests and research to determine cellular effects as a result of alterations to the protein sequence. Similar to adjusting the volume on a speaker, they're looking to find out how much is too much or not enough that could damage the cell.

"We think this is the first major milestone and is just the tip of the iceberg," said John Schmidt, PhD, lead author and visiting assistant professor in Villanova's biology department. "We don't quite yet have a grip on the mechanism of this protein, but this is certainly the start of something more. It opens up a new pathway in molecular biology."

This new research involved former Villanova undergraduate students, five of whom are listed as co-authors on the research. They are: Emily R. Duffner, '17 College of Liberal Arts and Sciences (CLAS), Sara G. Radecki, '14 CLAS, Gerard T. Walker, '17 CLAS, Amber Shelton, '17 CLAS, '18 MS and Tianjiao Wang, '14 CLAS. The students began working in Dr. Knepper's lab during their sophomore or junior years. Former Villanova research associate professor Keith Danielson, PhD, was also involved in the research.

"It was a wonderful opportunity for our students, and they certainly rose to the occasion," said Knepper, noting that all five are currently working or doing postgraduate study in science or medical fields.

**More information:** John A. Schmidt et al.

Regulation of the oncogenic phenotype by the nuclear body protein ZC3H8, *BMC Cancer* (2018).  
[DOI: 10.1186/s12885-018-4674-1](https://doi.org/10.1186/s12885-018-4674-1)

Provided by Villanova University

APA citation: Researcher and her students discover lesser-known gene associated with breast cancer (2018, July 31) retrieved 12 October 2022 from <https://medicalxpress.com/news/2018-07-students-lesser-known-gene-breast-cancer.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.*