

# New research finds pathogenic connection between autoimmune disorders and cancer

July 22 2014

---

Autoimmune disorders may share certain pathogenic mechanisms with cancer, according to a new report by George Washington University (GW) researcher Linda Kusner, Ph.D., published in *PLOS ONE* on July 22.

This paradigm shifting work shows that the very same inhibitors of apoptosis, or cell destruction, in tumors are also expressed in cells that produce [autoimmune diseases](#). Henry Kaminski, M.D., chair of the Department of Neurology at the GW School of Medicine and Health Sciences (SMHS), as well as colleagues from the Roswell Park Cancer Institute, collaborated with Kusner's laboratory on this research.

Together they discovered that survivin, an inhibitor of apoptosis, is also expressed in the [white blood cells](#), called lymphocytes, of patients with the autoimmune disease myasthenia gravis, but not in normal individuals. This was also the case in animal models of myasthenia gravis. Myasthenia gravis is a severe muscle disease that can lead to such weakness that patients must be placed on breathing machines.

"We found that humans with myasthenia gravis also express survivin in autoreactive lymphocytes," said Kusner, assistant research professor in the Department of Pharmacology and Physiology at SMHS. "We found these cells to be part of the dysfunction underlying the autoimmune disease."

Using a vaccine technique, the research team was able to eliminate the survivin-expressing cells and demonstrate improvement in the animal

models with myasthenia gravis. Kusner's laboratory will continue to work to improve the inhibition of survivin as a treatment and one day bring survivin targeted treatment to patients.

"This study opens a new therapeutic approach for [myasthenia gravis](#), as well as other [autoimmune disorders](#)," said Kaminski. "Conventional therapies may improve the disease, but have numerous complications. This discovery may lead to a viable treatment option for the millions of American suffering from these disorders."

**More information:** The article, "Survivin as a Potential Mediator to Support Autoreactive Cell Survival in Myasthenia Gravis: A Human and Animal Model Study," is available at [dx.plos.org/10.1371/journal.pone.0102231](https://doi.org/10.1371/journal.pone.0102231)

Provided by George Washington University

Citation: New research finds pathogenic connection between autoimmune disorders and cancer (2014, July 22) retrieved 9 April 2024 from <https://medicalxpress.com/news/2014-07-pathogenic-autoimmune-disorders-cancer.html>

<p>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.</p>
--