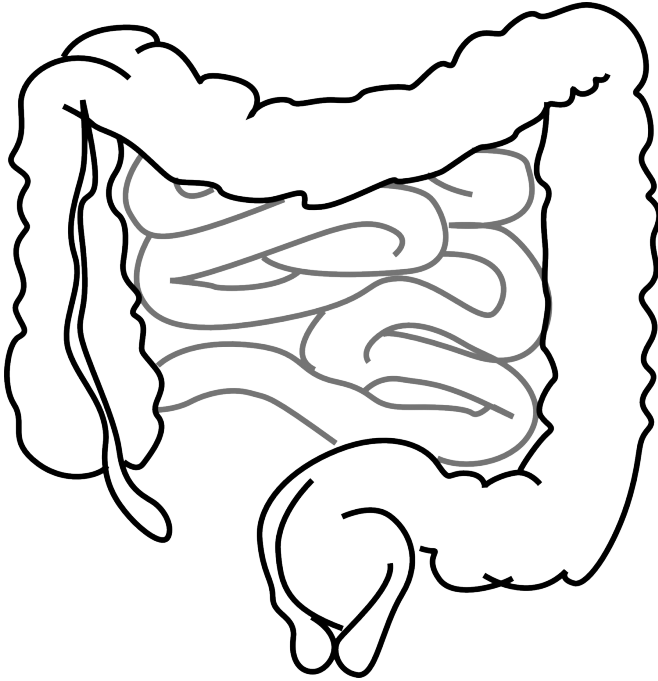


Protein produced in gut could stave off deadly bone marrow transplant complication

24 September 2018



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Researchers at Mount Sinai have discovered that an antimicrobial protein found in the gut can stave off a common and highly lethal side effect of bone marrow transplants, according to a study published in the *Journal of Clinical Investigation* in September.

The protein, regenerating islet-derived 3-alpha (REG3 α), is made by cells in the lining of the gastrointestinal tract. It plays a role in a complication of [bone marrow transplants](#) called graft-versus-host-disease (GVHD), in which the donated bone marrow's [immune cells](#) attack the patient's gastrointestinal tract.

This study shows that GVHD causes increased

serum levels of REG3 α throughout the body while, paradoxically, decreasing the production of the protein in the gastrointestinal tract as GVHD worsens.

The Mount Sinai researchers showed that mice that could not make the protein did not survive GVHD, but also found that adding REG3 α to human gastrointestinal cell lines prolonged their survival, confirming its unexpected function. These findings demonstrated that REG3 α , previously only considered a biomarker for GVHD, can have a role in saving patients from the disease.

While patients suffering from GVHD are normally given immune suppressants, this research suggested that enhancing the immune system with REG3 α is a better strategy and may also be helpful for illnesses such as [inflammatory bowel disease](#) that also involve the immune system in the gastrointestinal tract.

"There is a way to treat [immune disorders](#) of the gastrointestinal tract by enhancing the immune system rather than suppressing it, as we do now," said lead researcher James Ferrara, MD, Ward-Coleman Chair of Cancer Medicine and Director of the Hematologic Malignancies Translational Research Center at The Tisch Cancer Institute at the Icahn School of Medicine at Mount Sinai and Co-Director of the Mount Sinai Acute GVHD International Consortium (MAGIC). "These results show a new function for the lining of the [gastrointestinal tract](#) protecting itself, leading to a new class of drugs."

Provided by The Mount Sinai Hospital

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