

# Component of I.V. drips may reduce acute injury to organs, including the heart

April 16 2014, by Helen Dodson

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Yale researchers have found that the lactate component of a common saline solution used in hospitals may have anti-inflammatory effects that can reduce injury to major organs. The finding has clinical implications for the treatment of pancreatitis, kidney injury, strokes, and even heart attacks. The study is published online in the journal *Gastroenterology*.

The researchers induced [acute pancreatitis](#) or hepatitis in various mouse models. They then injected a portion of the mice with sodium lactate, which is a component of fluids often given intravenously to patients in hospitals to maintain proper blood pH levels.

The sodium lactate reduced the activation of toll-like receptors, components of the innate immune system that recognize foreign pathogens and launch the immune system's inflammatory cascade of responses.

In reducing activation of this signaling pathway, the researchers found that the entire inflammatory cascade was limited, reducing tissue and organ injury in the mice.

"Because the lactate reduced inflammation and organ injury, we believe that it could provide an appealing therapeutic tool in the treatment of patients with acute organ injury, including those who have had heart attacks," said Rafaz Hoque, M.D., assistant professor of digestive diseases at Yale School of Medicine.

**More information:** Rafaz Hoque, Ahmad Farooq, Ayaz Ghani, Fred Gorelick, Wajahat Zafar Mehal, "Lactate Reduces Organ Injury in Toll-like Receptor- and Inflammasome-Mediated Inflammation via GPR81-mediated Suppression of Innate Immunity," *Gastroenterology*, Available online 20 March 2014, ISSN 0016-5085, [dx.doi.org/10.1053/j.gastro.2014.03.014](https://doi.org/10.1053/j.gastro.2014.03.014).

Provided by Yale University

Citation: Component of I.V. drips may reduce acute injury to organs, including the heart (2014, April 16) retrieved 2 May 2024 from <https://medicalxpress.com/news/2014-04-component-iv->

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