

Researchers discover new way to halt excessive inflammation

March 5 2021



Dr Claire McCoy, Senior Lecturer in Immunology at RCSI University of Medicine and Health Sciences. Credit: Patrick Bolger

RCSI researchers have discovered a new way to 'put the brakes' on excessive inflammation by regulating a type of white blood cell that is

critical for our immune system.

The discovery has the potential to protect the body from unchecked damage caused by inflammatory diseases.

The paper, led by researchers at RCSI University of Medicine and Health Sciences, is published in *Nature Communications*.

When [immune cells](#) ([white blood cells](#)) in our body called macrophages are exposed to potent infectious agents, powerful inflammatory proteins known as cytokines are produced to fight the invading infection. However, if these cytokine levels get out of control, significant tissue damage can occur.

The researchers have found that a protein called Arginase-2 works through the energy source of macrophage [cells](#), known as mitochondria, to limit inflammation. Specifically they have shown for the first time that Arginase-2 is critical for decreasing a potent inflammatory cytokine called IL-1.

This discovery could allow researchers to develop new treatments that target the Arginase-2 protein and protect the body from unchecked damage caused by [inflammatory diseases](#).

"Excessive inflammation is a prominent feature of many diseases such as multiple sclerosis, arthritis and inflammatory bowel diseases. Through our discovery, we may be able to develop novel therapeutics for the treatment of inflammatory [disease](#) and ultimately improve the quality of life for people with these conditions," commented senior author on the paper Dr. Claire McCoy, Senior Lecturer in Immunology at RCSI.

The study was led by researchers at the School of Pharmacy and Biomolecular Sciences, RCSI (Dr. Claire McCoy, Dr. Jennifer Dowling

and Ms Remsha Afzal) in collaboration with a network of international researchers from Australia, Germany, and Switzerland.

The research was funded by Science Foundation Ireland, with initial stages of the research originating from a grant from the National Health Medical Research Council, Australia.

More information: *Nature Communications* (2021). [DOI: 10.1038/s41467-021-21617-2](https://doi.org/10.1038/s41467-021-21617-2)

Provided by RCSI

Citation: Researchers discover new way to halt excessive inflammation (2021, March 5)
retrieved 10 April 2024 from
<https://medicalxpress.com/news/2021-03-halt-excessive-inflammation.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>
--