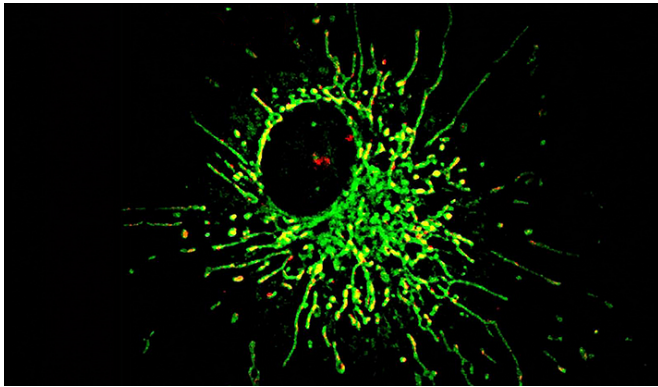


Study pinpoints key pathway in inflammation and aging

9 May 2017, by Ziba Kashef



preventing or treating degenerative diseases that result from cell damage and often occur with aging.

More information: W. K. Eddie Ip et al. Anti-inflammatory effect of IL-10 mediated by metabolic reprogramming of macrophages, *Science* (2017).

[DOI: 10.1126/science.aal3535](https://doi.org/10.1126/science.aal3535)

Provided by Yale University

Microscopic image of mitochondrial ROS, which indicates damage, in immune cells lacking the IL-10 signal. Credit: Yale University

In patients with colitis, a serious condition affecting the gut, the immune system turns against the body's own microbes, causing inflammation. To combat this inflammation, scientists have focused in on a chemical signal known as IL-10. While it's understood that IL-10 plays a critical role in controlling inflammation and preventing colitis, it's not clear how.

In a new study published in *Science*, immunobiologist and senior author Ruslan Medzhitov led a research team that examined the inflammatory response in mice and people lacking the IL-10 signal. They found that IL-10 works by blocking the metabolism of [immune cells](#) that are part of the [inflammatory response](#). They also noted that IL-10 clears damaged mitochondria—the power generators within cells. The accumulation of this cellular damage in turn promotes inflammation.

The finding deepens understanding of a key process in inflammation, and could lead to therapies that target this pathway in colitis, said the researchers, and it also has implications for

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