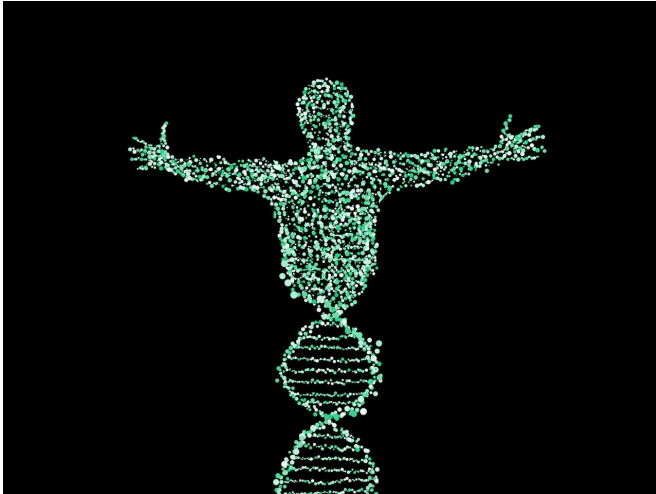


New inflammation inhibitor discovered

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A multidisciplinary team of researchers led from Karolinska Institutet in Sweden have developed an anti-inflammatory drug molecule with a new mechanism of action. By inhibiting a certain protein, the researchers were able to reduce the signals that trigger an inflammation. The study is published in *Science* and was done in collaboration with the University of Texas Medical Branch, Uppsala University and Stockholm University.

"We've developed a new drug molecule that inhibits [inflammation](#)," says Professor Thomas Helleday at the Department of Oncology-Pathology, Karolinska Institutet, Sweden, who co-lead the study with Dr. Torkild Visnes and Dr. Armando Cázares-Körner. "It acts on a protein that we believe is a general mechanism for how inflammation arises in cells."

The [discovery](#) is the result of many years of research by Thomas Helleday's group on how DNA is repaired by the body. One of the objectives has been to fight cancer by targeting damage to the tumour cells' DNA. Several breakthroughs

have already been reported, which have led, amongst other things, to a new treatment for congenital breast and [ovarian cancer](#) using so-called PARP inhibitors, which has been available for some years.

It was when developing a new molecule for inhibiting the enzyme that repairs oxygen damage to DNA that the [researchers](#) found, to their surprise, that it also dampened inflammation. It turned out that the enzyme OGG1, apart from repairing DNA, also triggers inflammation.

The inhibitor blocks the release of inflammatory proteins, such as TNF alpha. In trials on mice with acute pulmonary disease, the researchers succeeded in dampening the inflammation.

"This discovery could give rise to a new treatment for a very serious condition," says Professor Helleday. "We'll now be developing our OGG1 inhibitor and examining whether it can lead to new treatments for inflammatory diseases in order to cure or relieve diseases such as sepsis, COPD and severe asthma."

More information: "Small-molecule inhibitor of OGG1 suppresses proinflammatory gene expression and inflammation" *Science* (2018). science.sciencemag.org/cgi/doi/10.1126/science.aar8048

Provided by Karolinska Institutet

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