

Researchers identify molecule with anti-inflammatory properties in maple syrup

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Arthritis and other inflammatory diseases could someday be treated with medication containing a molecule from maple syrup. Université Laval researchers demonstrated in a recent study that quebecol, a molecule found in maple syrup, has interesting properties for fighting the body's inflammatory response.

Provided by Laval University

Discovered in 2011, quebecol is the result of chemical reactions during the syrup-making process that transform the naturally occurring polyphenols in [maple sap](#). After successfully synthesizing quebecol and its derivatives, Université Laval researchers under the supervision of Normand Voyer, a chemist with the Faculty of Science and Engineering, evaluated its anti-inflammatory properties. They called on colleague Daniel Grenier of the Faculty of Dentistry, who developed an in vitro model for determining the anti-inflammatory potential of natural molecules. "We take blood cells called macrophages and put them with bacterial toxins," explained Professor Grenier. "Macrophages usually react by triggering an inflammatory response. But if the culture medium contains an anti-inflammatory molecule, this response is blocked."

The researchers carried out tests that showed quebecol curbs the [inflammatory response](#) of [macrophages](#), and some derivatives are even more effective than the original molecule. "The most powerful derivative has a simpler structure and is easier to synthesize than quebecol," said Normand Voyer. "This paves the way for a whole new class of anti-inflammatory agents, inspired by quebecol, that could compensate for the low efficacy of certain treatments while reducing the risk of side effects."

The study, coauthored by Sébastien Cardinal, Jabrane Azelmat, Daniel Grenier, and Normand Voyer, was published in a recent issue of the journal *Bioorganic & Medicinal Chemistry Letters*.

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