

New tools to study bioactive lipids

July 17 2020, by Leigh MacMillan



Credit: CC0 Public Domain

NAEs are bioactive lipid molecules that appear to play roles in energy balance, inflammation, stress responses and addiction. How NAE levels are regulated and their precise contributions to biological processes remain poorly understood.

To develop tools to explore NAE function, Sean Davies, Ph.D., and colleagues screened a library of experimental compounds for inhibitors of NAPE-PLD, the enzyme that catalyzes the final step in NAE biosynthesis.

The researchers identified 14 inhibitors and further studied the two most potent compounds. They demonstrated that the compounds, dichlorophenes, were selective for and inhibited the NAPE-PLD enzyme in cultured human cells. They also identified the key chemical parts of the compounds required for NAPE-PLD inhibition.

The findings, reported in the *Journal of Biological Chemistry*, identify tools for studying NAE function and lay the groundwork for the development of therapies for clinical conditions including obesity, inflammation, [chronic pain](#) and addiction.

More information: Geetika Aggarwal et al. Symmetrically substituted dichlorophenes inhibit N-acyl-phosphatidylethanolamine phospholipase D, *Journal of Biological Chemistry* (2020). [DOI: 10.1074/jbc.RA120.013362](#)

Provided by Vanderbilt University

Citation: New tools to study bioactive lipids (2020, July 17) retrieved 24 June 2024 from <https://phys.org/news/2020-07-tools-bioactive-lipids.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>
--