

Scavengers "protect" HDL

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High-density lipoprotein (HDL) is widely thought to protect against the development of atherosclerosis, yet drugs that raise levels of HDL cholesterol (HDL-C) have failed to reduce the risk of heart disease.

Recent evidence suggests that HDL function is more important than HDL-C levels in lowering risk. Isolevuglandins (IsoLGs) are lipid molecules generated indirectly by the oxidative enzyme MPO that can bind irreversibly with proteins to modify their functions.

Now Linda May-Zhang, Ph.D., Sean Davies, Ph.D., and colleagues have shown that levels of IsoLG bound to HDL are higher in patients with high cholesterol compared to healthy controls and that binding of IsoLG degrades HDL function.

They also show that PPM, a small molecule "scavenger" they developed can block MPO-induced modification of HDL.

Their findings, published this month in the *Journal of Biological Chemistry*, suggest that modification of HDL proteins plays a major role in the development of atherosclerosis, and that scavengers such as PPM potentially could lower disease risk by preventing HDL dysfunction.

More information: Linda S. May-Zhang et al. Modification by isolevuglandins, highly reactive γ -ketoaldehydes, deleteriously alters high-density lipoprotein structure and function, *Journal of Biological Chemistry* (2018). [DOI: 10.1074/jbc.RA117.001099](https://doi.org/10.1074/jbc.RA117.001099)

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