

Study identifies new pathway to combat primary cause of cardiovascular disease

November 3 2023, by Alex Smith



Credit: CC0 Public Domain

Research led by the University of Minnesota Medical School identified a new pathway to combat cardiovascular disease. The study was recently published in [Nature Cardiovascular Research](#).

The research team's work identifies a molecule called TREM2 as a unique and therapeutically relevant pathway for the treatment of atherosclerosis—a common condition that develops when plaque builds up inside arteries—in preclinical models. Atherosclerosis is a primary cause of cardiovascular diseases, which are the number one cause of death and disability globally, according to the Centers for Disease Control and Prevention.

"This is a highly impactful study that may inform future approaches to treat atherosclerosis," said Jesse Williams, Ph.D., an assistant professor at the U of M Medical School. "Current approaches almost exclusively target lowering LDL cholesterol, but we've known for decades that inflammation also contributes to atherosclerotic plaque build-up in the arteries. This study reveals a new pathway for the prevention of [cardiovascular disease](#)."

Using [preclinical models](#) of atherosclerosis, the research team found that the disease was dramatically inhibited when the TREM2 gene was deleted in macrophages—[white blood cells](#) that are integral to the immune system—during [disease progression](#). They also found that targeted deletion of the TREM2 pathways was effective at reducing pre-existing atherosclerotic disease. This shows TREM2 as a potential immunotherapeutic target for future studies of cardiovascular disease risk.

This research will continue through a collaboration with Alector, Inc—a pharmaceutical company—to perform preclinical testing of TREM2-targeted antibodies to combat the progression of atherosclerosis.

More information: Michael T. Patterson et al, Trem2 promotes foamy macrophage lipid uptake and survival in atherosclerosis, *Nature Cardiovascular Research* (2023). [DOI: 10.1038/s44161-023-00354-3](https://doi.org/10.1038/s44161-023-00354-3)

Provided by University of Minnesota Medical School

Citation: Study identifies new pathway to combat primary cause of cardiovascular disease (2023, November 3) retrieved 29 April 2024 from <https://medicalxpress.com/news/2023-11-pathway-combat-primary-cardiovascular-disease.html>

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.