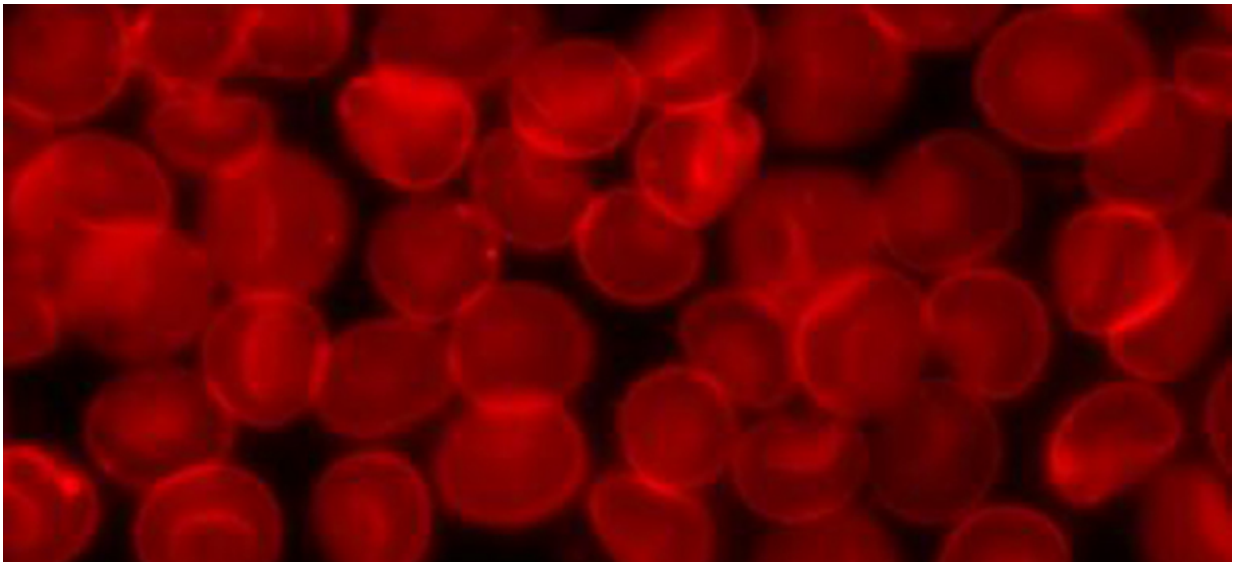


New targets uncovered for treating hypertension-related fibrosis

April 21 2022



Credit: Wikimedia Commons

Elevated blood pressure can cause a condition known as perivascular fibrosis, where the outside wall of a blood vessel thickens due to connective tissue build-up. Although recent data has suggested that the thickening is due to the activation of T-cells, the defenders of our immune system, the underlying mechanisms are not well known. To further investigate how fibrosis develops, researchers at the Brigham profiled the peripheral blood mononuclear immune cells from patients with high blood pressure. In doing so, they discovered two relevant

mediators of fibrosis and potential therapeutic targets: a transcription factor, KLF10, and a cytokine, IL-9. When researchers injected mice with IL-9 neutralizing antibodies, they observed a reversal of the fibrosis and prevention of organ dysfunction, building a stronger case for targeting this pathway.

"Given that hypertension contributes to a considerable number of cardiovascular-related deaths globally, we wanted to look into the depths of perivascular fibrosis for potential drug targets," said senior author Mark W. Feinberg, MD, of the Division of Cardiovascular Medicine. "We are eager to continue investigating KLF10-IL-9 signaling to hopefully create effective treatments for vascular diseases."

The research was published in *Circulation Research*.

More information: Rulin Zhuang et al, Perivascular Fibrosis Is Mediated by a KLF10-IL-9 Signaling Axis in CD4+ T Cells, *Circulation Research* (2022). [DOI: 10.1161/CIRCRESAHA.121.320420](https://doi.org/10.1161/CIRCRESAHA.121.320420)

Provided by Brigham and Women's Hospital

Citation: New targets uncovered for treating hypertension-related fibrosis (2022, April 21) retrieved 24 April 2024 from <https://medicalxpress.com/news/2022-04-uncovered-hypertension-related-fibrosis.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.