

Tracking lung macrophages with lipophilic fluorescent dyes

May 5 2023, by Leigh MacMillan



Credit: CC0 Public Domain

Pulmonary macrophages are a heterogeneous population of immune cells that patrol the lungs, ingesting particulates and microbes, and activating inflammation when necessary. During homeostasis, two main subsets of

macrophages coexist: resident alveolar macrophages (AMs) and bone marrow (BM)-derived macrophages. Identifying and characterizing these subsets during lung inflammation is challenging due to altered expression of cell surface markers.

Timothy Blackwell, MD, and colleagues have now developed a technique to separately label AMs (via intratracheal injection) and BM-derived macrophages (via tibial injection) with lipophilic fluorescent dyes that insert into cell membranes. They used the approach to track the macrophage subsets and characterize [gene expression profiles](#) at different time points after intratracheal injection of the bacterial toxin LPS.

The study, reported in the *Journal of Immunology*, shows that the new method accurately distinguishes AMs and BM-derived macrophages during LPS-induced inflammation. It should be useful for studying macrophage subsets during lung inflammation, infection and injury, the authors note.

More information: Wei Han et al, Identification and Characterization of Alveolar and Recruited Lung Macrophages during Acute Lung Inflammation, *The Journal of Immunology* (2023). [DOI: 10.4049/jimmunol.2200694](#)

Provided by Vanderbilt University

Citation: Tracking lung macrophages with lipophilic fluorescent dyes (2023, May 5) retrieved 2 May 2024 from <https://medicalxpress.com/news/2023-05-tracking-lung-macrophages-lipophilic-fluorescent.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.