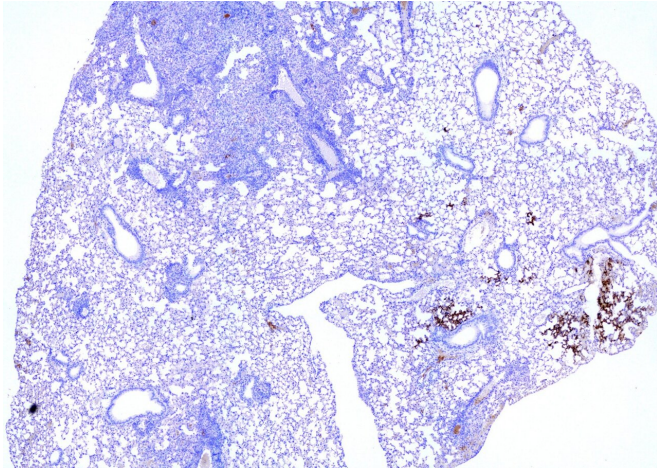


Tuberculosis infection protects mice from developing COVID-19

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Magnified image of a lung that is infected with the respiratory pathogens that cause tuberculosis (TB) and COVID. The dense blue area in the upper left is infected with *Mycobacterium tuberculosis* (the cause of TB), while the brown area in the lower right is infected with SARS-CoV-2 (the cause of COVID). Image taken by Dr. Erin S. Gloag. Credit: Erin S. Gloag, Rosas Mejia O et al., 2022, *PLOS Pathogens*, CC-BY 4.0 (creativecommons.org/licenses/by/4.0/)

In mice, the immune response mounted against tuberculosis prevents them from developing COVID-19, according to a new study by Richard Robinson at The Ohio State University, U.S. and colleagues publishing March 24th in the open-access journal *PLOS Pathogens*.

Currently, the bacterium that causes tuberculosis, *Mycobacterium tuberculosis*, and the virus that causes COVID-19, SARS-CoV-2, are the leading causes of death from infectious disease worldwide. Tuberculosis is widespread, and scientists have questioned whether the immune response triggered by this serious respiratory infection might protect people from developing COVID-19. To find out more, researchers worked with two different strains of mice and infected them with *M.*

tuberculosis. Then they exposed the mice to the COVID-19 virus and monitored them for signs of infection. They discovered that mice with tuberculosis showed no signs of COVID-19, likely because the pre-existing [immune response](#) to tuberculosis prevented the virus from proliferating in the lungs.

Altogether, the findings demonstrate that tuberculosis infection makes the lungs inhospitable to the COVID-19 virus in mice. If the same is true for humans, then this discovery may be one reason why there have been few reports of individuals with both tuberculosis and COVID-19 in the absence of other complications. The findings may also explain why countries tend to have high rates of infection of COVID-19 or tuberculosis, but not both. The researchers propose that future research should focus on the interaction between COVID-19 and [tuberculosis](#) infections in humans.

"TB and COVID are pandemics that affect every part of the world," Robinson adds. "Our study reflects the work of a diverse and talented group of OSU scientists to better understand how these two diseases influence one another, a surprising observation being that mice with TB are resistant to COVID in a lab setting."

More information: Rosas Mejia O, Gloag ES, Li J, Ruane-Foster M, Claeys TA, Farkas D, et al. (2022) Mice infected with *Mycobacterium tuberculosis* are resistant to acute disease caused by secondary infection with SARS-CoV-2. *PLoS Pathog* 18(3): e1010093. doi.org/10.1371/journal.ppat.1010093

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