

# Tuberculosis researchers discover potential new target for treatments

November 21 2011

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(PhysOrg.com) -- Colorado State University researchers have discovered an enzyme that is critical to the survival and replication of the bacterial pathogen that causes tuberculosis. The enzyme may become a key target for new drugs that could halt the manifestation of tuberculosis and potentially cut the current treatment strategy of multiple antibiotics given daily for at least six months.

The enzyme is an especially important discovery because it is present in both replicating and non-replicating strains of the bacteria, including [resistant strains](#). That's key because non-replicating bacteria are much more difficult to kill with antibiotics, which is one reason treatments for tuberculosis are so long-lasting.

“Another interesting observation that arose from our work is that this enzyme – known as FBA-tb – is on the surface of the bacterium. Because it is on the surface, it has the ability to interact with a human substance called plasminogen, which plays a key role in our immune response,” said Mary Jackson, an associate professor in CSU’s Department of Microbiology, Immunology and Pathology. Jackson works in the Mycobacteria Research Laboratories. “This finding suggests that the bacteria that cause tuberculosis may use this enzyme to manipulate our immune system and spread tuberculosis throughout our body. We’re looking into that theory now.”

Jackson’s laboratory also is already pursuing research to find ways to block this enzyme from helping the bacteria that causes tuberculosis

replicate. That research is being funded by two National Institutes of Health grants.

The research discovery is published in today's issue of the *Journal of Biological Chemistry*.

Tuberculosis is one of the world's deadliest diseases, with one-third of the entire global population being infected. In 2010, about 1.4 million people died of tuberculosis or illnesses related to the disease, and 9 million people became ill with tuberculosis, according to the Centers for Disease Control. While [tuberculosis](#) is more common in other countries, the CDC says more than 11,000 new cases were reported in the United States in 2010.

Provided by Colorado State University

Citation: Tuberculosis researchers discover potential new target for treatments (2011, November 21) retrieved 26 April 2024 from <https://phys.org/news/2011-11-tuberculosis-potential-treatments.html>

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