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Australian scientists develop new vaccine for TB

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Pre-clinical trials on mice show promising results



Australian medical researchers from the Centenary Institute and the University of Sydney have successfully developed and tested on mice a new type of vaccine targeting tuberculosis (TB), the world's top infectious disease killer in humans.

Reported in the *Journal of Medicinal Chemistry*, the early-stage vaccine was shown to provide substantial protection against TB in a pre-clinical laboratory setting when tested on the rodents.

The research program targeting the deadly disease has currently taken over five years of effort to implement. During that time, the team of scientists have created the advanced synthetic TB vaccine and have now demonstrated its effectiveness using mouse models.

"Two peptides [small proteins] which are normally found in tuberculosis bacteria were synthesized and then bound extremely tightly to an adjuvant [a stimulant} that was able to kick-start the immune response in the lungs," said Dr Anneliese Ashhurst, co-lead author of the reported study and affiliated with both the Centenary Institute and the University of Sydney.

"We were then able to show that when this vaccine was inhaled into the lungs, it stimulated the type of T cells known to protect against TB. Importantly, we then demonstrated that this type of vaccine could successfully protect against experimental airborne TB infection," she said.