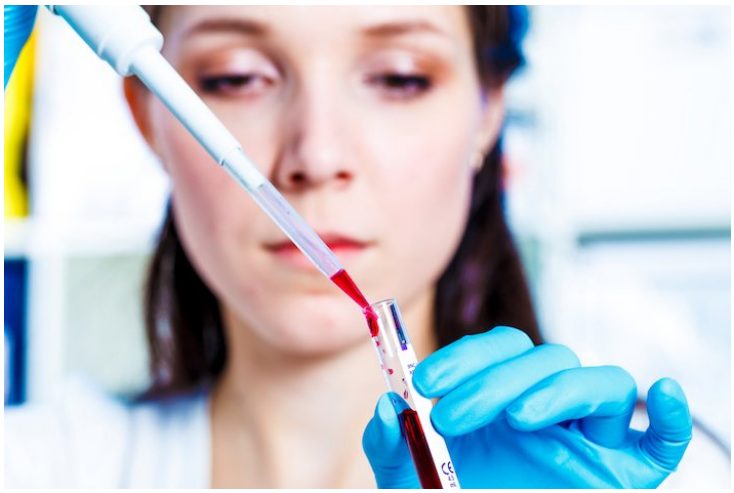
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ASIA EDITION

TB research in NZ to make Ã¢â?¬Ë?enormous global health impact'

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To design highly specific drugs for acting on a protein called bd oxidase



New Zealand's University of Otago researchers are behind a major scientific breakthrough which could lead to elimination of the world’s biggest infectious diseases killer, tuberculosis (TB).

Professor Kurt Krause and Professor Greg Cook are part of an international collaboration with Nobel Prize winner Professor Hartmut Michel, of Germany’s Max Planck Institute of Biophysics, that has determined the atomic structure of a protein called bd oxidase.

That development will serve as an important template for drug discovery and for producing fast acting drugs – ideally a four-week course, instead of the current side effect-heavy, six-month protocol, Professor Krause says.

The bd oxidase protein lives in the cell membrane of the TB bacterium and helps it breathe under very low oxygen conditions that often occur in infected lungs during a TB infection.

“Knowing the structure of this protein will speed up the process of designing and discovering small molecules that can block bd oxidase function and help to rapidly kill TB germs,” Professor Krause says.

Professor Krause says the plan now is to start building on the bd oxidase structure to understand its mechanism, identify tight inhibitors and refine these inhibitors into a multi-drug cocktail to rapidly cure TB.