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New Compound Developed to Treat Tuberculosis

A new anti-microbial compound which targets the bacteria responsible for tuberculosis

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IP Status

Patent application submitted

Seeking

Licensing

About **University of Warwick**

We are committed to ensuring that our research makes a distinctive, competitive impact on the world. We believe in a collaborative approach to research and education in addressing global challenges and opportunities.

Background

Tuberculosis is one of the world's deadliest diseases and has overtaken HIV for the number of deaths annually per infective agent.

Mycobacterium tuberculosis (Mtb), the bacteria which causes tuberculosis, relies on its unique cell envelope to infect and survive in host organisms. Currently, antibiotics target processes and proteins within *Mtb* cells and rely on entrance through complex cell wall structures. Resistant strains of *Mtb* have developed due to the current drugs targeting single proteins and patients failing to complete the full treatment course. Consequentially, no new *Mtb* drugs have been produced in the past 40 years.

Tech Overview

The School of Life Sciences and the Department of Chemistry at the University of Warwick have identified a new class of antibacterial drugs including a novel compound which is active against *Mtb*. The boronic acid containing compound binds to external receptors on the *Mtb* cell wall. This disrupts cell processes which are essential for functioning and survival.

Further Details

- The team's research has been published in Chemical Science: *Chem. Sci.* 2019 **10** 5935

Stage of Development

The lead compound has been demonstrated to be lethal to *Mtb* yet the mechanism of action is still to be proven. The compound is at a pre-clinical stage of development.

Benefits

- The novel compounds do not need to cross *Mtb*'s complicated and impenetrable cell wall
- New research shows the lead compound is specific to the *Mycobacterium* genus and preliminary results show no negative impacts on other bacterial species or mammalian cells
- The likelihood of resistance is low as the compound does not target single proteins
- The method of action differs to other *Mtb* drugs so the compound can be used alongside current treatments

Opportunity

The University of Warwick is now looking for commercial partners to license this technology and further its development.

Patents

- ANTI-MYCOBACTERIAL AGENTS GB1820829.8