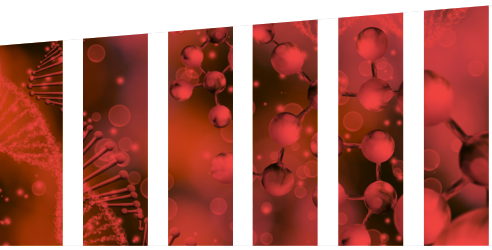
ULB TTO
KNOWLEDGE TRANSFER OFFICE

TECHNOLOGY OFFER | LIFE SCIENCES & HEALTH



COMPOSITIONS AND METHODS FOR TREATING MYCOBACTERIAL INFECTIONS

KEYWORDS

- Mycobacterial infections treatment
- MDR and XDR-Tuberculosis treatment
- MDR-TB
- XDR-TB

Collaboration type
Collaborative research & development (preclinical, early-phase clinical)
Licensing

IP Status
EA 034983 B1
granted April 14th 2020
EP3237011
claims considered allowable

The inventor
Prof. Véronique FONTAINE

CONTACT

Technology Transfer Office
ULB Research Department

Fred Pierard
IP Manager
+32 (0)2 650 32 26
frederic.pierard@ulb.be

www.ulbtto.be

THE TECHNOLOGY IN A NUTSHELL

New drug combination of Vancomycin and Orlistat to treat *Mycobacterium tuberculosis* including multi-drug-resistant (MDR) and extensively drug-resistant (XDR) tuberculosis.

STATE OF THE ART

Tuberculosis (TB) is a highly contagious disease condition caused by droplet-transmitted infection with Mycobacterium tuberculosis (Mtb). According to the World Health Organization (WHO), more than 2 billion people worldwide are infected with Mycobacterium tuberculosis. In 2014, 9.6 million people fell ill with TB and 1.5 million died from the disease.

Unfortunately, Mycobacterium tuberculosis has a high intrinsic resistance to the majority of clinically applied antibiotics, which severely limits treatment options. This intrinsic resistance has been attributed, in part, to its impermeable, hydrophobic cell envelope that acts as a barrier to entry of certain molecules.

Since M. tuberculosis is not susceptible to most antibiotics, and the available selection of effective antibiotics is further restricted by the evolution of drug resistance, there is an urgent and unmet need to develop new treatments for TB.

THE INVENTION

We have surprisingly discovered that new specific combinations of a first agent preferably selected from glycopeptides and a second agent preferably selected from lipase inhibitors display significant mycobacteriostatic and/or mycobactericidal properties, and thus allows mycobacterial infections to be treated.

The present inventors have also surprisingly discovered that such specific combinations display significant mycobacteriostatic and/or mycobactericidal properties towards multidrug-resistant or extensively drug-resistant mycobacterial strains and thus allow multidrug-resistant or extensively drug-resistant mycobacterial infections to be treated, and provides a new array of combination treatments that can be used as an alternative to established therapies.

We have also surprisingly discovered that such specific combinations can be used for screening new compounds useful for the treatment of mycobacterial infections or for treating MDR or XDR mycobacterial infections.

KEY ADVANTAGES OF THE TECHNOLOGY

- New strategies against all mycobacteria including MDR and XDR-TB ;
- Successful in vitro antimycobacterial activity.

LIEU LIAISON ENTREPRISES-UNIVERSITÉS
www.enmieux.be
FEDER–FSE UNION EUROPÉENNE Wallonie
L'UNION EUROPÉENNE ET LA WALLONIE INVESTISSENT DANS VOTRE AVENIR

TECHNOLOGY READINESS LEVEL: 1 2 **3** 4 5 6 7 8 9

LABORATORY: PHARMACEUTICAL MICROBIOLOGY AND HYGIENE LAB

The research activities of this unit are related to the study of microorganisms and antimicrobial defenses, among others on the study of microbial invasion and the development of new therapeutics against bacteria, viruses or cancers induced by microorganisms. In virology, our studies are mainly focusing on human papillomaviruses (HPV). On the opposite, in bacteriology, we are focusing our research on mycobacteria

RELEVANT PUBLICATIONS

> Increased Vancomycin Susceptibility in Mycobacteria: a New Approach To Identify Synergistic Activity against Multidrug-Resistant Mycobacteria. Soetaert K., Rens C., Wang X. M., De Bruyn, J., Laneelle, M. A., Laval, F., Lemassu, A., Daffe, M., Bifani, P., Fontaine, V., & Lefèvre, P. (2015). Antimicrob Agents Chemother. 2015;59(8):5057-5060.

> Effects of Lipid-Lowering Drugs on Vancomycin Susceptibility of Mycobacteria. Rens C., Laval F., Daffé M., Denis O., Frita R., Baulard A., Wattiez R., Lefèvre P., & Fontaine V. (2016). Antimicrobial agents and chemotherapy, 60(10), 6193–6199.