New Broad-Spectrum Antibiotics

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WARF: P140321US02

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The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing small molecule compounds that interfere with bacterial membranes.

OVERVIEW

The rise of antibiotic-resistant bacteria represents a potential health crisis. Some antibiotics (e.g., quinolones and fluoroquinolones) are losing their effectiveness while others simply don’t work against Gram-negative bacteria. This class of bacteria includes strains responsible for food poisoning, urinary tract infections, pneumonia, cystic fibrosis and sepsis.

THE INVENTION

A UW–Madison researcher and collaborators have identified an antibiotic compound effective against many drug-resistant, Gram-negative and Gram-positive bacteria. The compound (5-nonyloxytryptamine) and its analogs are small molecule inhibitors that interfere with the bacterial membrane and prevent replication.

The compound has been reported as an anticancer drug but was not previously shown to have antimicrobial properties. It was identified by searching for compounds that cause *E. coli* bacteria to lack a copy of the chromosome following cell division.

APPLICATIONS

- Antibiotic to treat infections and inhibit bacterial growth
- Bacteria targets include *Escherichia coli*, *Salmonella*, *Shigella*, *Bacillus*, *Listeria*, *Staphylococcus* and *Streptococcus* species.
- Topical and potentially systemic usage

KEY BENEFITS

- Broad-spectrum weapon against Gram-negative, Gram-positive and antibiotic-resistant bacteria

The University of Wisconsin and WARF – A Single Location to Accelerate Translational Development of New Drugs

UW–Madison has the integrative capabilities to complete many key components of the drug development cycle, from discovery through clinical trials. As one of the top research universities in the world, and one of the two best-funded universities for research in the country, UW–Madison offers state-of-the-art facilities unmatched by most public universities.

These include the Small Molecule Screening Facility at the UW Comprehensive Cancer Center; the Zeeh Pharmaceutical Experiment Station, which provides consulting and laboratory services for developing formulations and studying solubility, stability and more; the Waisman Clinical Biomaterials Facility; the Wisconsin Institute for Medical Research, which provides UW–Madison with a complete translational research facility; and the innovative, interdisciplinary Wisconsin Institutes for Discovery, home to the private, nonprofit Morgridge Institute for Research and its public twin, WID, part of the university’s graduate school. The highly qualified experts at these facilities are ready to work with you to create a library of candidates for drug development.
resistant bacteria

STAGE OF DEVELOPMENT

The compound has been tested against a broad panel of human pathogens with promising results.

ADDITIONAL INFORMATION

Related Technologies
WARF reference number P120204US02 describes a class of antimicrobial compounds that specifically target the membranes both of Gram-positive and Gram-negative bacteria.
WARF reference number P110268US02 describes a novel class of antibiotic compounds targeting bacterial cell division.

Tech Fields
Pharmaceuticals & Vitamin D - Antibacterials

CONTACT INFORMATION

For current licensing status, please contact John Nagel at jnagel@warf.org or 608-960-9848.