New Antibacterial Leads

Tech ID: 23440 / UC Case 2013-319-0

TECHNOLOGY DESCRIPTION

The lipopolysaccharide anchor in the outer membrane of Gram-negative bacteria, lipoprotein A (LPA), acts as an endotoxin in infected individuals, often leading to septic shock with a poor prognosis. It also provides protection to those inner membrane proteins that can be more susceptible to typical anti-bacterial compounds. Essential to the synthesis of LPA, LpxC is a zinc-dependent deacetylase required by these bacteria and interruption of LPA synthesis by inhibiting LpxC introduces a lethal defect.

LpxC has been identified as an attractive target for the development therapeutics for multi-drug resistant Gram-negative infections. Inhibitors of LpxC are usually hydroxamate-based but can be limited in their potential as drug compounds due to their relatively high plasma clearance rates.

Investigators at UCSD have developed a series of non-hydroxamate LpxC inhibitors that may represent a new ‘first-in-class’ category.

STATE OF DEVELOPMENT

Potential inhibitors were identified by computational methods and screened in a minimum inhibitory concentration assay. Those compounds demonstrating activity were used to design next generation derivatives, which are being tested in both cellular and LpxC enzymatic assays.

INTELLECTUAL PROPERTY INFO

A provisional patent application has been authorized and filing is anticipated in the near future.

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Stimulus-Triggered Metalloenzyme Inhibitors
- Novel Matrix Metalloproteinase Inhibitors

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OTHER INFORMATION

CATEGORIZED AS

- **Medical**
  - Disease: Infectious Diseases

RELATED CASES

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