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Novel inhalation formulations of polymyxins

Novel inhaled polymyxin formulations offer enhanced efficacy and improved safety for treating multi-drug resistant bacterial lung infections.

Intravenous and oral antibiotics are not always effective for lung infections due to limited drug exposure at the infection site and bacterial resistance.

Researchers at Purdue University have developed a novel combination therapy of polymyxins for treating bacterial lung infections. Polymyxins have often been used as the last-line resort for infections caused by multi-drug resistant Gram-negative 'superbugs'; but inhaled polymyxins can cause toxicity in the lungs. The novel formulations developed by Purdue researchers create a powerful therapeutic option with better antibacterial killing and much-reduced toxicity than the currently used inhaled polymyxin B and colistin. Furthermore, the Purdue dry powder formulation shows promise as an inhaled therapy, with satisfactory stability and high aerosolization performance. These innovative inhalation formulations promise a life-saving option for patients suffering from bacterial lung infections, including people infected by multidrug-resistant Pseudomonas aeruginosa, Acinetobacter baumannii and Enterobacterales.

Advantages:

-Enhanced efficacy

-Decreased drug resistance

-Improved safety

Potential Applications:

-Pharmaceuticals

-Biomedical

-Medicine

TRL: 4

Technology ID
2020-ZHOU-68990

Category
Pharmaceuticals/Pharmaceutical Packaging & Delivery Systems
Pharmaceuticals/Computational Drug Delivery & Nanomedicine
Pharmaceuticals/Drug Delivery & Formulations

Authors
Maizbha Ahmed
Mohammad Azad
Jian Li
Qi Zhou

Further information
Joe Kasper
JRKasper@prf.org

Nathan Smith
nesmith@prf.org

View online

Intellectual Property:

Provisional-Gov. Funding, 2020-07-02, United States | PCT-Gov. Funding, 2021-05-03, WO | NATL-Patent, 2021-05-03, China | NATL-Patent, 2022-12-16, United States | CON-Patent, 2025-10-17, United States

Keywords: Novel combination therapy, polymyxins, bacterial lung infections, multi-drug resistant, Gram-negative superbugs, inhaled polymyxins, decreased drug resistance, dry powder formulation, inhalation formulations, improved safety