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Nano-composite Microparticles with Ivacaftor and Colistin

An innovative inhaled dry powder formulation utilizing polymyxins offers a powerful and less toxic therapeutic option 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 formulation developed by Purdue researchers creates a powerful therapeutic option with better antibacterial killing and much-reduced toxicity than the polymyxins alone. The Purdue dry powder formulation shows promise as an inhaled therapy, with satisfactory stability and high aerosolization performance. This innovative inhalation formulation promises 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

-Decreased toxicity

Potential Applications:

-Pharmaceuticals

-Biomedical

-Medicine

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Category

Pharmaceuticals/Drug Discovery & Development
Pharmaceuticals/Pharmaceutical Packaging & Delivery Systems
Pharmaceuticals/Computational Drug Delivery & Nanomedicine
Pharmaceuticals/Small Molecule Therapeutics
Pharmaceuticals/Drug Delivery & Formulations

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Related Publication:

Inhalable Nanocomposite Microparticles with Enhanced Dissolution and Superior Aerosol Performance

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