



Technology Commercialization Opportunity

Methods for Producing and Using Polymyxins (Colistins A and B)

UGARF Case: 1337

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School: Department of Microbiology

Intellectual Property Status: Patent pending.

Introduction

Increasing antibiotic resistance in bacteria presents a critical problem for public health. Limited therapeutic options have forced infectious disease clinicians and microbiologists to reappraise the clinical application of relatively old polymyxin antibiotics, thus creating an increased need for this class of compounds. Resistance to polymyxin (aka Colistin) is currently very rare, rendering attractive their use against certain bacterial strains. Nevertheless, in vitro, polymyxin has had excellent activity against a variety of gram-negative bacteria, including those that are resistant to other classes of antimicrobials (e.g., penicillin and amino glycosides).

Outside the medical and veterinary arenas, the use of antibiotics by biotech/biopharma as additives to biofermentation mixtures is a ubiquitous means to eliminate contamination of broth by extraneous microorganisms.

Technology Summary

UGA investigators have developed a technique that provides a novel source for antibiotics with broad spectrum activity against both Gram-positive and -negative bacteria.

Additionally five isolates of the organism used to produce colistins inhibited growth of both *E. coli* and *S. aureus*.

Advantages

- Efficient three-step purification protocol
- produces antibacterials identical to commercial antibiotics as well as additional antibacterial compounds with activity against Gram-positive bacteria
- High yield

Potential Applications

- production and purification of antimicrobials in large scale from simple culture media
- in the competitive exclusion (CE) of organisms such as food pathogens
- as an additive to probiotics for farm animals

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