

New research shows effectiveness of ointment that kills antibiotic-resistant bacteria

December 1 2021, by Bill Bangert



Credit: Pixabay/CC0 Public Domain

Research from the University of Cincinnati College of Medicine shows that use of a topical drug called AB569, a combination of acidified

nitrite and EDTA (or ethylenediaminetetraacetic acid) promotes killing of antibiotic-resistant bacteria while enhancing the healing of wounds in a variety of burn injuries. The study was published in the journal *Infection and Immunity*.

AB569 was patented in the United States in 2018 by Daniel Hassett, Ph.D., professor in the Department of Molecular Genetics, Biochemistry and Microbiology at the UC College of Medicine. Hassett's research has found that AB569 kills virtually all pathogenic bacteria tested with no observed acquired resistance. These bacteria, including multidrug resistant *Pseudomonas aeruginosa* (MDR-PA), are some of the most serious [pathogens](#) exhibiting multidrug resistance and enhanced virulence properties, according to the Centers for Disease Control and Prevention.

"Multidrug resistant bacteria, often called 'superbugs,' are an ever-burgeoning global health problem," says Hassett. "As a result, there is a critical need to develop novel and effective antimicrobials for the prevention, treatment and eradication and healing of such [wounds](#) that are complicated by the most formidable pathogen of burn patients, known as MDR-PA. Injury severity is predominantly due to potentially lethal sepsis caused by MDR-PA."

Hassett, who is the co-corresponding author on this study with Latha Satish, Ph.D., director of clinical lab operations at Cincinnati Children's Hospital Medical Center, says the research shows AB569 acts synergistically to kill all human burn wound strains of the pathogen in vitro.

"AB569 not only kills the bug, it also enhances the wound-healing process," says Hassett. "At the same time, AB569 topical application significantly increases the anti-inflammatory mediators ... that allow improved epidermal restoration and the healing process to occur more

rapidly and efficiently."

AB569 was initially seen as a potential treatment for many antibiotic-resistant organisms that cause pulmonary infections in patients with [cystic fibrosis](#) and [chronic obstructive pulmonary disease](#) (COPD) and many other opportunistic infections. In addition to tackling COPD and cystic fibrosis, AB569 may also be effective in addressing infections related to severe burns, urinary tract disorders, endocarditis and diabetes, said Hassett.

"This study provides solid foundational evidence that AB569 can be used topically to treat highly problematic dermal [injuries] including wound, burn, blast and likely diabetic infections in civilian and military populations and help relieve the economical burden that MDR organisms have on the global health care system," says Hassett.

More information: Amanda Barry et al, AB569, a Novel, Topical Bactericidal Gel Formulation, Kills *Pseudomonas aeruginosa* and Promotes Wound Healing in a Murine Model of Burn Wound Infection, *Infection and Immunity* (2021). [DOI: 10.1128/IAI.00336-21](https://doi.org/10.1128/IAI.00336-21)

Provided by University of Cincinnati

Citation: New research shows effectiveness of ointment that kills antibiotic-resistant bacteria (2021, December 1) retrieved 18 April 2024 from <https://medicalxpress.com/news/2021-12-effectiveness-ointment-antibiotic-resistant-bacteria.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--