

EVÖQ Nano's EVQ-218 nanoparticle addresses critical gap in fight against antibiotic-resistant bacteria

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Non-ionic EVQ-218 demonstrates success in combating leading pathogens without triggering antimicrobial resistance (AMR)

SALT LAKE CITY, Utah, (July 16, 2024) — The World Health Organization (WHO) last month called for urgent innovation in antibacterial agents to combat serious infections and replace those becoming ineffective due to widespread use. EVÖQ Nano's groundbreaking nanoparticle, EVQ-218, is intended to address this critical need, demonstrating effectiveness against the WHO's top six antibiotic-resistant strains, without triggering resistance.

The WHO has identified antimicrobial resistance (AMR) as a top 10 global public health threat. AMR develops when pathogens evolve to withstand existing medicines, resulting in more severe illnesses and increased mortality rates. "Antimicrobial resistance is only getting worse, yet we're not developing new trail-blazing products fast enough to combat the most dangerous and deadly bacteria," said Dr. Yukiko Nakatani, WHO's assistant director-general for antimicrobial resistance ad interim. The WHO's report summarizes: "Overall, antibacterial agents in the clinical pipeline combined with those approved in the last six years are still insufficient to tackle the ever-growing threat of the emergence and spread of drug-resistant infections."¹

Novel mechanism of action

EVQ-218's efficacy is rooted in its ability to disrupt bacteria's metabolic processes without triggering AMR:

- EVQ-218 stops bacterial growth by sequestering sulfur.
- The sequestration of sulfur inhibits metabolic activity within the bacterial cell without compromising cell structures or lysing the cell wall. This blocks activation of bacterial mutations that contribute to AMR.
- In contrast, nanosilvers with ions rupture cell walls, triggering activation of AMR pathways.

"EVQ-218 represents the kind of innovation the WHO is calling for in the fight against antibiotic-resistant bacteria," said EVÖQ Nano CEO Shaun Rothwell. "While WHO reports only 12 out of 32 antibiotics in development can be considered innovative, our nanotechnology offers a truly novel approach to eliminating bacteria without contributing to the growing crisis of antimicrobial resistance."

Characterized as a new form of silver, EVQ-218 is the first and only non-ionic silver nanoparticle with effective antimicrobial action devoid of cytotoxicity.² EVQ-218 opens possibilities for widespread therapeutic use, as the ions in traditional nanosilvers have hindered its medical applications due to toxicity risks and limited stability.²⁻⁴ In vitro studies found EVQ-218 demonstrated efficacy against a range of pathogens, including the top six antibiotic-resistant strains identified by WHO:⁵

- *Acinetobacter baumannii*, CR
 - *Pseudomonas aeruginosa*, CR
 - *Escherichia coli*, 3GCR
 - *Klebsiella* spp., 3GCR
 - *Klebsiella* spp., CR
 - *Enterobacter* spp., SGCR
- EVQ Nano is currently using its lead asset in three core industries.

Advancing therapeutic antimicrobial solutions

EVQ Bio has developed an inhaled therapeutic using EVQ-218 for the treatment of pulmonary bacterial infections in patients with cystic fibrosis, in partnership with the Cystic Fibrosis Foundation. The company recently completed a successful Pre-Investigational New Drug (pre-IND) meeting with the U.S. Food and Drug Administration and is confidently advancing toward Phase I clinical trials.

Arming medical devices with antimicrobial properties

EVQ MedTech integrates EVQ-218's antimicrobial capabilities into medical devices to defend against a broad spectrum of contaminants like bacteria and fungi. The team is collaborating with leading catheter manufacturers with the aim of curbing healthcare-associated infections (HAIs), impacting more than 1 million hospital patients annually.⁶

Safe, sustainable antimicrobial treatment for textiles & surfaces

FUZE Technologies serves the textile, hospitality, fitness, and workspace industries. Its antimicrobial technology approved by the Environmental Protection Agency is free of chemicals, toxicity, and environmental waste. FUZE is

working with some of the world's most notable brands, including Nike, Adidas, the New England Patriots, Marriott, and Hilton.

About EVÖQ Nano

EVÖQ Nano is a nanoscience company that engineers novel nanoparticles for the life, materials, and textile science industries. The company's multi-patented, high-volume laser nanofabrication process creates uniform, sub-10 nm nanoparticles with distinct surface chemistry. These properties represent a significant advancement in nanoscience with the potential for a wide range of applications. To learn more, visit evoqnano.com.

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