EVŌQ bio

Antimicrobial efficacy against the world's worst superbugs.

EVŌQ Bio is a preclinical-stage nanotherapeutics company pioneering a nanomedicine platform with demonstrated antimicrobial efficacy.

The company's lead asset, EVQ-218, has demonstrated efficacy against a range of pathogens, including the top 6 antibiotic-resistant strains identified by the World Health Organization.[1]

- *Acinetobacter baumannii, CR*
- *Escherichia coli, 3GCR*
- *Klebsiella spp., CR*
- *Pseudomonas aeruginosa, CR*
- *Klebsiella spp., 3GCR*
- *Enterobacter spp., SGCR*

Silver's Efficacy Transformed for Therapeutic Use

EVQ-218 is the first and only non-ionic silver nanoparticle, opening possibilities for widespread therapeutic use.[2,3] The ions in traditional silver have hindered its medical applications due to toxicity risks and limited stability. With its non-ionic properties, EVQ-218 delivers effective antimicrobial action devoid of cytotoxicity.

"Antimicrobial resistance, I do believe, is the existential threat of this century."

Admiral Brett P. Giroir, U.S. assistant secretary for health; Pew online, July 27, 2020

Novel Mechanism of Action

The antimicrobial efficacy of EVQ-218 is rooted in its ability to disrupt bacteria's metabolic processes, without triggering antimicrobial resistance (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 avoids activation of bacterial mutations that enable AMR.**
- **In contrast, nanoparticles with silver ions rupture cell walls, triggering resistance pathways to open.**

Combating Chronic Lung Disease

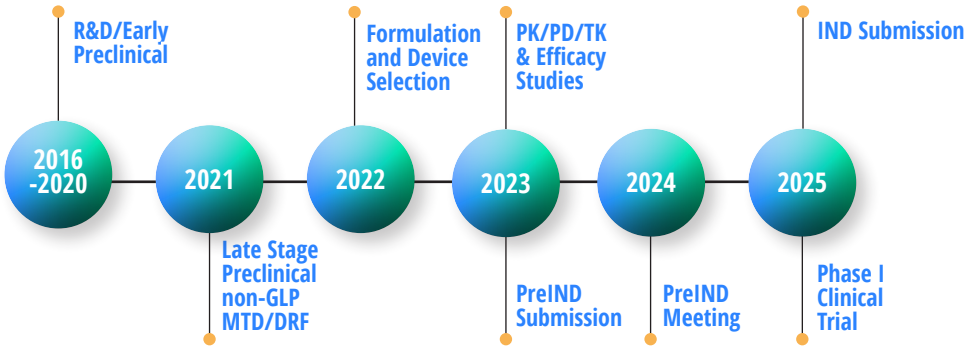
The first therapeutic in development is for the treatment of pulmonary bacterial infections in patients with cystic fibrosis.

Supported by 2 grants from the Cystic Fibrosis Foundation, research found an inhaled therapeutic using EVQ-218 demonstrated efficacy against pathogens linked to pulmonary infections:

- Killed 64 strains from 9 known drug-resistant bacteria, including:
  - *Pseudomonas, Burkholderia, MSSA, MRSA, NTM, Achromobacter, Stenotrophomonas, Candida, and Scedosporium.*
- Showed efficacy against 14 biofilms tested.
- Eradicated multiple yeast and filamentous fungi.
- Exhibited no toxicity in lung epithelial cells.
- Developed no bacterial resistance during 28-day testing assay. Resistance to other antibiotics typically occurs in 4-5 days.[4-8]

CYSTIC FIBROSIS FOUNDATION
ADDING TOMORROWS

PRODUCT DEVELOPMENT TIMELINE



NANOTHERAPEUTICS PIPELINE

EVŌQ Bio's novel platform has the potential to enable therapeutic development for a broad spectrum of diseases.

DISEASE INDICATION	TARGET	R&D / IND ENABLING
Pulmonary Infection (Cystic Fibrosis)	Pseudomonas aeruginosa Burkholderia cepacia Stenotrophomonas	EVQ-218
Pulmonary Infection (Bacterial Pneumonia)	Streptococcus pneumoiae Streptococcus aureus Streptococcus pyogenes Klebsiella pneumoniae Haemophilus influenzae	EVQ-218
Pulmonary Infection (Fungal)	Candida albicans Aspergillus	EVQ-218
Tuberculosis	Mycobacterium tuberculosis	EVQ-218
Cellulitis	Group A ß-hemolytic streptococcus Streptococcus pneumoiae	EVQ-221
Staph MRSA (Skin)	Methicillin-resistant Staphylococcus aureus	EVQ-221
Diabetic Foot Ulcer	Staphylococcus aureus Streptococcus aureus Pseudomonas aeruginosa	EVQ-221
Seasonal Flu	Influenza A	EVQ-222-VIA
COVID-19	SARS-CoV2	EVQ-222-VIA

To learn more, visit evoqnano.com.

Media Contact

Capwell Communications
media@capwellcomm.com

References

1. World Health Organization, "Prioritization of Pathogens to Guide Discovery, Research and Development of New Antibiotics for Drug-Resistant Bacterial Infections, including Tuberculosis," 2017, 77. (Survey of world health experts) **2.** Dimpka, C.O. Calder, A. Gajjar, P. Merugu, S. Huang, W. Britt, D.W. McLean, J.E. Johnson, W.P. Anderson, A.J. Interaction of silver nanoparticles with an environmentally beneficial bacterium, *Pseudomonas chlororaphis. J. Haz. Mat.* 2011; 188:428-435. DOI: 10.1016/j.jhazmat.2011.01.118 **3.** Niedermeyer, W. Method and apparatus for production of uniformly sized nanoparticles. US 9 849 512, 2017. **4.** Cakic M., Glisic S., Nikolic G. Synthesis, characterization and antimicrobial activity of dextran sulphate stabilized silver nanoparticles. *J. Mol. Struct.* 2016;1110:156–161. doi: 10.1016/j.molstruc.2016.01.040 **5.** Yan X., He B., Liu L., Qu G., Shi J., Hu L., Jiang G. Antibacterial mechanism of silver nanoparticles in Pseudomonas aeruginosa: Proteomics approach. *Metallomics.* 2018;10:557–564. doi: 10.1039/C7MT00328E **6.** Gamboa S.M., Rojas E.R., Martínez V.V., Vega-Baudrit J. Synthesis and characterization of silver nanoparticles and their application as an antibacterial agent. *Int. J. Biosen. Bioelectron*