EVŌQ nano

EVQ-218: The first and only non-ionic silver nanoparticle.

By reinventing silver in an ion-free nanoparticulate form, EVŌQ Nano has opened possibilities for effective antimicrobial action devoid of cytotoxicity.

Engineered by EVŌQ Nano, EVQ-218 represents a pivotal innovation, unlocking the full therapeutic potential of silver without its detrimental trade-offs.

EVŌQ Nano has discovered that silver's antimicrobial power does not reside solely in its ionic action. Extensive lab studies demonstrate that EVQ-218 delivers high antimicrobial efficacy without ionic emissions, opening possibilities for widespread therapeutic use.[1,2]

Silver's Healing Legacy

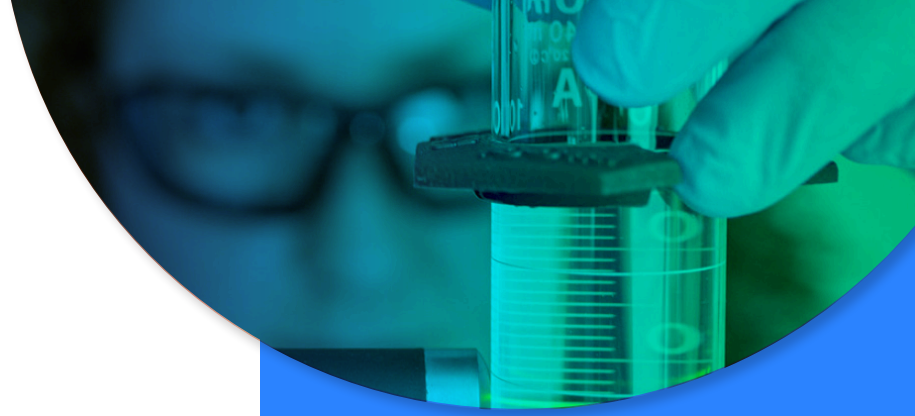
Silver has been used throughout history, with ancient civilizations from the Greeks to the Egyptians harnessing its antimicrobial properties for wound treatment and water purification. Silver vessels were used to keep water fresh during the time of Alexander the Great, and Hippocrates, the "father of modern medicine," wrote of using silver to improve wound care circa 400 BC.

While silver's antimicrobial properties were known for centuries, colloidal silver's mechanism of action was only discovered in the last 25 years.[3,4]

Historically, silver ions' antimicrobial mechanism has centered on protein binding, enzyme inhibition, membrane damage, oxidative stress, and DNA interactions that disrupt multiple cell processes, ultimately leading to growth inhibition and cell death.[4,5] Yet, silver ions have faced challenges in broader therapeutic applications, resulting in increased scrutiny regarding the safety and regulation of nanosilver ions:

- **Cytotoxicity**
- **Limited stability**

Despite efforts to develop nanosilver formulations that can provide controlled, sustained release of silver ions at the site of action, or coatings that seek to lower human cell toxicity, **one obstacle remains: THE IONS.**



The challenge with silver's therapeutic potential is that its efficacy and toxicity are presumed to stem from the same source: silver ions.

EVQ-218 changes this.

EVQ-218 has been differentiated as a new form of silver with distinct attributes:[6]

- **Uniform Sub-10 nm:** Enables effective cell interaction and offers a high surface-area-to-volume ratio with repeatable results.
- **Non-Ionic:** Efficacy without the risks and limitations linked to ion emission.
- **Non-Oxidative:** Mitigates need for added stabilizers and surface coatings.
- **Non-Toxic/Environmentally Friendly:** No toxic byproducts created in the manufacturing process.

These attributes come from EVQ-218's unique surface structure:

- **Bond Strength:** Short bonds create a strong structure preventing ionic emissions.
- **Stability:** Maintains properties and structure indefinitely, despite varying conditions, mitigating the need for added stabilizers and surface coatings.
- **Smooth:** Allows uniform dispersion and non-agglomeration while maintaining individual and group stability, without the need for surfactants or capping agents.
- **High Zeta Potential:** Greater than -40 mV supports electrostatic stability without stabilizing agents, resulting in perpetual uniform distribution.

Compared to traditional nanosilvers, EVQ-218 is differentiated as the first stable, nonemissive, pure silver nanoparticle that meets the highest standards set by the National Institute of Standards and Technology (NIST), making it a superior candidate for biomedical and consumer product use.[6]

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 antimicrobial resistance (AMR).
- In contrast, nanosilvers with ions rupture cell walls, triggering activation of AMR pathways.

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).

About EVŌQ Nano

EVŌQ Nano is a nanoscience company that engineers novel nanoparticles for the life science, materials science, and textile science industries. The company's multi-patented, high-volume laser nanofabrication process creates uniform, sub-10 nm nanoparticles with distinct surface chemistry for a wide range of applications.

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References

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