

## NANOPARTICLES FOR ANTIMICROBIAL PHOTODYNAMIC THERAPY

### The Need

Alternative treatments for microbial infections, due to increasing antimicrobial resistance to conventional therapies.

### The Solution

The technology describes nanoparticles which allows light induced release of its photosensitizer cargo used in photodynamic therapy.

The nanosystem showed antimicrobial effect against planktonic cultures of *Staphylococcus aureus* and *Pseudomona aeruginosa*.

### Innovative Aspects

The main advantage of this system is the controlled release of the cargo under light irradiation.

In addition, the modification of the external surface of nanoparticles by the use of a molecular gate, which acts as a protector barrier for the cargo until it reaches the microbial cells, avoiding its degradation.

Therefore, this system offers a spatial-temporal, controlled release of the loaded drug.

**Stage of Development:** Research and Development. Tested in *in vitro*.

### Intellectual Property

**Spanish patent application** (Priority date: November 3, 2023)

**PCT application:** October 31, 2024 (WO2025/093798A1)

Available for:

- Licensing
- Further development

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