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Targeted Antimicrobial Photodynamic Therapy using GaPpIX Conjugates

A new drug utilizing the highly potent photosensitizer GaPpIX offers a targeted approach for treating multidrug-resistant bacterial strains, including MRSA, with potential applications for anthrax and skin infections.

Methicillin-resistant Staphylococcus aureus (MRSA) is a common bacteria in the nose and on the skin of people and animals. Is it often resistant to many common antibiotics and normally stays in the infected person's body. It is becoming increasingly difficult to cure MRSA completely. Current solutions use photosensitizers that cross cell membranes. This way in ineffective and still leaves the MRSA bacteria in the infected person's body. There is a need for a new technology that could potentially improve on the treatment of MRSA.

Researchers at Purdue University have developed a drug that can be used against multidrug-resistant strains of MRSA. This is done by using GaPpIX as a photosensitizer that can be targeted to CSHR-expressing bacteria for aPDI. This IC50 of GaPpIX is well above 10 uM. This GaPpIX is also much more potent than TMPyP in a head to head comparison. This new drug could open the door for how treating MRSA is approached in the future.

Advantages:

-More potent than TMPyP

-Anti microbial activity 60 uM or 0.06 uM

Potential Applications:

-Anthrax

-Skin Infections

TRL: 3

Intellectual Property:

Technology ID
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Category
Pharmaceuticals/Small Molecule Therapeutics
Pharmaceuticals/Drug Delivery & Formulations

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