TECHNOLOGY OFFER

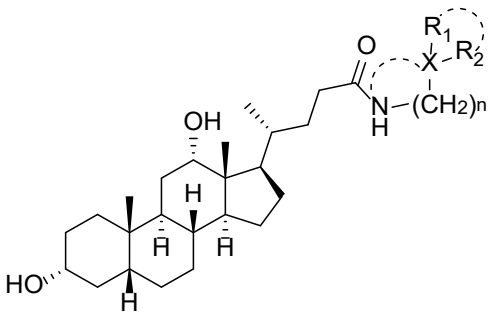
NEW CATIONIC STEROIDS WITH ANTIMICROBIAL PROPERTIES

Background

Currently, multidrug-resistant (MDR) infections are one of the most worrisome threats, driving the search for new antimicrobials compounds. Therapeutic choices for fungal diseases are also limited, particularly for invasive infections, and resistance has been described for all antifungal agents, including for *Candida* species.

Technology

The present invention provides an amphiphilic small-molecule with bactericidal and fungicidal activity. The compound is synthetized in scalable conditions from readily available and cheap building blocks.
The molecule shows significant biocidal activity against multidrug-resistant bacteria, including the ESKAPE pathogens, and fungi. Notably, the compound acts synergistically with amphotericin B and fluconazole against the reference *Candida albicans* strain. Significant dose-dependent disruption of bacterial membranes is observed upon treatment with the new cationic steroid. Polymeric coatings containing up to 1.5 % w/v cationic steroid sustain effective reduction of the formation of *Escherichia coli* biofilms in ureteral stents, in relevant hydrodynamic conditions.



Advantages

- One-step scalable synthesis starting from low-cost commercial building blocks;
- Antibacterial and antifungal activity with minimal inhibitory concentrations between 16 and 128 µg/mL;
- Retains antibiofilm activity when incorporated in polymeric coatings.

PATENT STATUS

International Patent Application via PCT WO2023105494
Priority date: 10.12.2021
Pending in Europe, US and Brazil

DEVELOPMENT STAGE

TRL 3 – Experimental proof of concept

APPLICATIONS

Antimicrobial therapeutics against veterinary and/or human pathogens;
Antimicrobial coating or disinfection of medical devices;
Mild detergent for emulsification of lipids;
Aquaculture feed formulations for infectious disease control.

COOPERATION

Licensing agreement;
R&D partnership.

KEYWORDS

Antibiotic
Antimicotic
Bioflim
Cathether
Surfactant

DEVELOPED BY

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