

Novel synthetic peptide shows antimicrobial activity and inhibitory effect on biofilm formation by a biofilm-producing microorganism. We are seeking a company partner to commercialize this licensing opportunity.

BACKGROUND

Nosocomial infections caused by Gram negative bacteria are the most challenged infections to treat successfully. Biofilm formation makes difficult to fight them with current treatments. Our approach is to develop new synthetic peptides with both, high antimicrobial and antibiofilm formation properties, for the eradication of gram negative bacteria highly resistant, causing infections in hospitals and care centers. The new antimicrobial peptide has been developed jointly with UAB.

THE TECHNOLOGY

Peptidic engineering of peptides from RNase family leads to a peptidic derivative that combines the antimicrobial, agglutination, lipopolysaccharide binding and antibiofilm properties highly increased. The combination of those properties provides it the best key features to be a promising drug to treat nosocomial infections. The antimicrobial property comes from its ability to interact and disrupt negatively charged membranes through a carpet-like mechanism, triggering lipid vesicles aggregation before inducing their content release. Additionally, that antibacterial action against the gram-negative bacteria is modulated by its outer membrane binding capacity and high ability to aggregate cells.

ADVANTAGES

- Antimicrobial, bacterial agglutination, LPS binding and antibiofilm properties all in one.
- High antimicrobial and agglutination activities (MIC and MAC < 1 mM). Efficient *P. aeruginosa* biofilm eradication (IC50 < 5 mM).
- Very low toxicity showed in hemolytic studies (HC50 > 200 mM).

STATE OF DEVELOPMENT

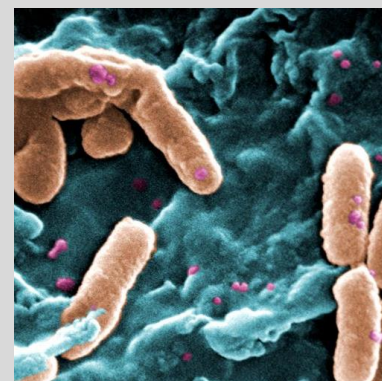
Efficacy was demonstrated in Gram negative strains from lab, *Pseudomonas aeruginosa* PA01, and from clinic patients' tissues infected of *E.coli* NDM (BETA lactamase), *Klebsiella pneumoniae* (3 different resistances), *Acinetobacter* multiresistance, and *Pseudomonas Aeruginosa* multiresistance.

INTELLECTUAL PROPERTY

European patent application, July 30th, 2015
PCT application July 28th, 2016

MARKET OPPORTUNITY

Worldwide, the rate of nosocomial infections is between 3.5% and 12% of admissions in developed regions. Nosocomial infections market is estimated to growth at a high rate in the next five years.



COMMERCIAL OPPORTUNITY

We are looking for an industrial partner for co-development or out-licensing the technology.

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KEYWORDS

Nosocomial infections, antibiofilm, antimicrobial, Infectious diseases

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