

### **PS01.43**

#### **Anti-biofilm peptide combinations in the eradication of pre-established biofilms of *Pseudomonas aeruginosa* and *Staphylococcus aureus***

Paula Jorge(1), D Grzywacz(2), W Kamysz(2,3), A Lourenço(1,4), MO Pereira(1)

(1) CEB - Centre of Biological Engineering, University of Minho, Braga, Portugal

(2) Lipopharmpl, Zblewo, Poland

(3) Faculty of Pharmacy, Medical University of Gdansk, Gdansk, Poland

(4) ESEI - Escuela Superior De Ingeniería Informática, Universidad De Vigo, Ourense, Spain

The emergence of resistance is a preoccupant health threat and the development of new strategies and the use of novel compounds are in demand. Specifically, biofilm infections are a serious threat, causing chronic, nosocomial and biomaterial related infections, being related to dissemination of antibiotic resistance. *Pseudomonas aeruginosa* and *Staphylococcus aureus* are great developers of resistance and their ability to form biofilms makes them responsible for severe chronic infections. In this work, we associated the use of novel compounds – antimicrobial peptides (AMPs) – with a combination strategy. The AMP/antibiotic colistin was combined with three other AMPs (linear tachyplesin I; temporin A; citropin 1.1). Previous results showed the ability of these AMPs to combine synergistically against these bacteria. Here, we test these combinations against single pre-established biofilms and the results show promise. Currently, we are testing these combinations on mixed biofilms to assess their use in polymicrobial infections.

Acknowledgments: Project “BioHealth - Biotechnology and Bioengineering approaches to improve health quality”, NORTE-07-0124-FEDER-000027, co-funded by Programa Operacional Regional do Norte (ON.2 – O Novo Norte), QREN, FEDER, project “RECI/BBB-EBI/0179/2012 - Consolidating Research Expertise and Resources on Cellular and Molecular Biotechnology at CEB/IBB”, FCOMP-01-0124-FEDER-027462, and the Agrupamento INBIOMED from DXPCTSUG-FEDER unha maneira de facer Europa (2012/273), the European Union's Seventh Framework Programme FP7/REGPOT-2012-2013.1 under grant agreement n° 316265, BIOCAPS, and the PhD Grant of Paula Jorge, Ref. SFRH/BD/88192/2012. This document reflects only the author's views and the European Union is not liable for any use that may be made of the information contained herein.