University of Minho
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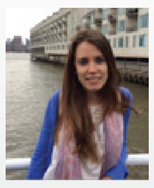
CO-IMMOBILIZATION OF LIPOSOMAL AMPHOTERICIN B AND ANTIMICROBIAL PEPTIDES TO PREVENT MULTI-KINGDOM INFECTIONS



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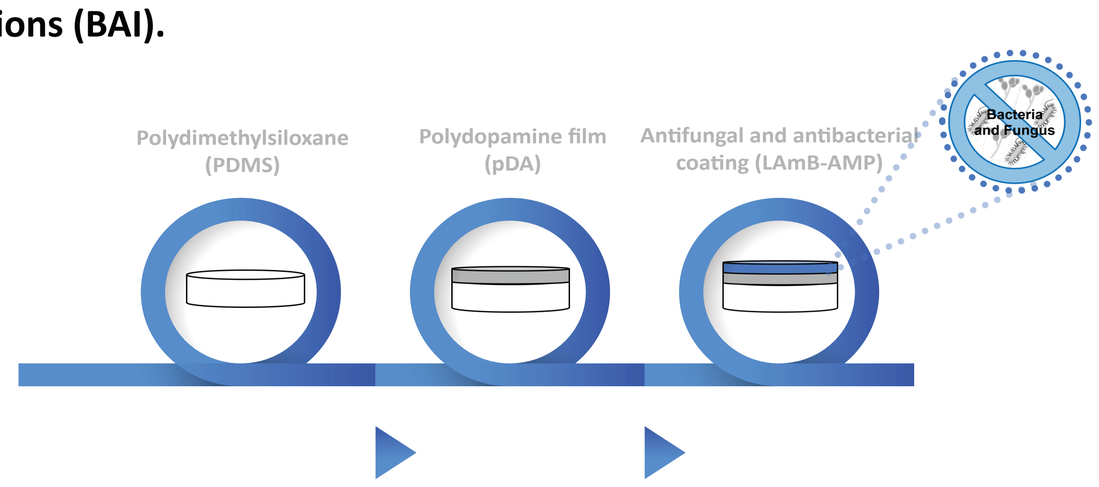
INTRODUCTION

Most of antimicrobial strategies are designed to target bacterial biofilms. Nevertheless, in real-life settings, **fungi** are inevitably and increasingly found in **consortium with bacteria,** so the development of antifungal coating strategies to be combined with antibacteria approaches will be pivotal for the fight of **biomaterial-associated infections (BAI).**

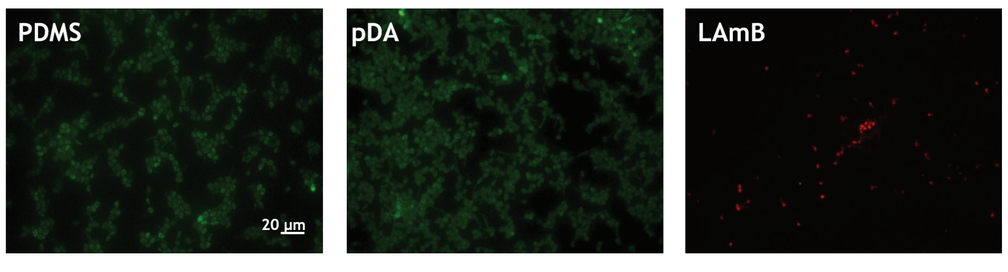
METHODS

AIM

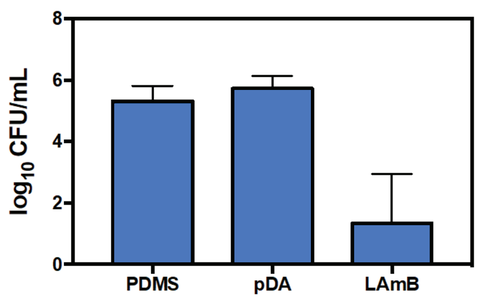


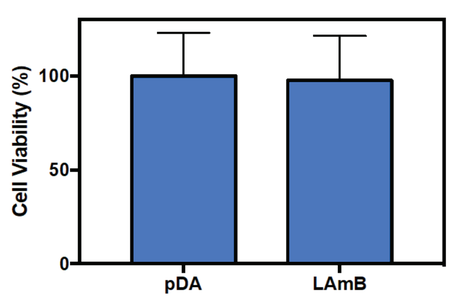
RESULTS

1 LAmB

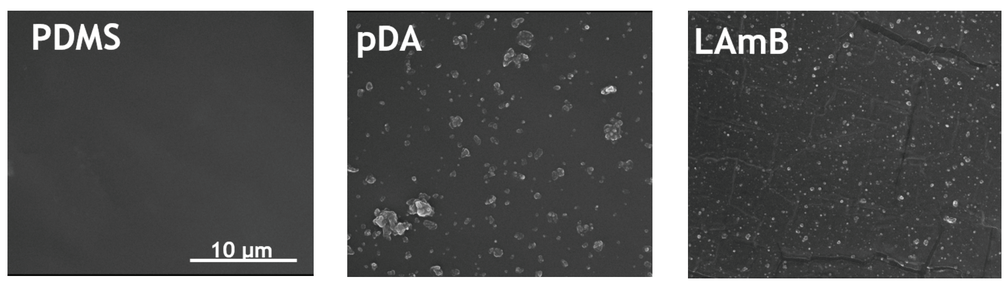


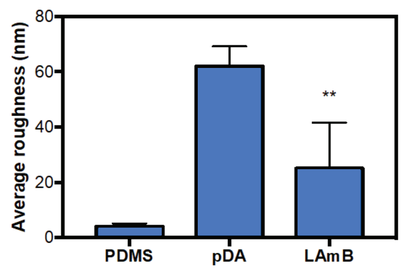
4h Adhesion





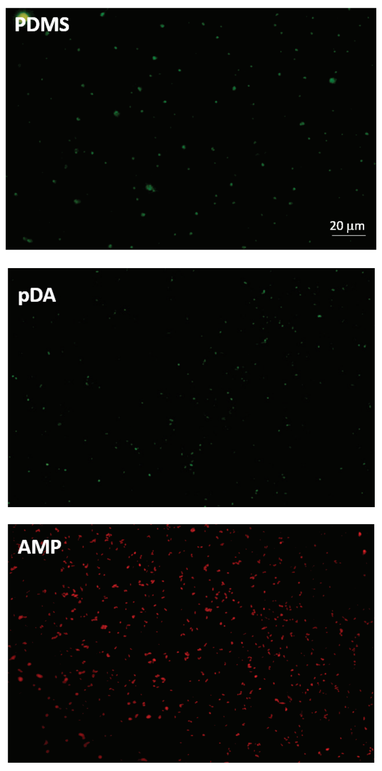
24h Biofilm **Cytotoxicity**



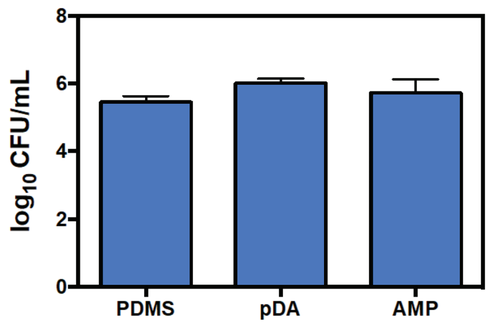


Surface characterization

2 AMP

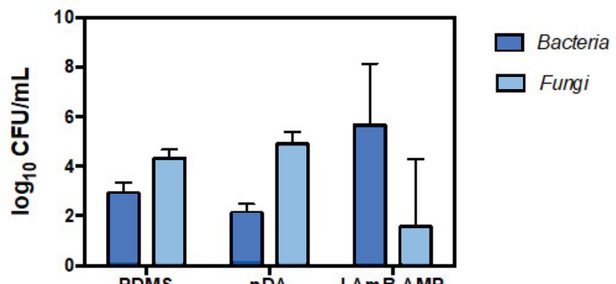


4h Adhesion



24h Biofilm

2+1 LAmB-AMP



24h Dual-Species Biofilm

CONCLUSIONS

- LAmB functionalization yielded surfaces with less roughness and with the ability to prevent the attachment of *Candida albicans* and kill the adherent cells, with no cytotoxicity.
- AMP immobilization provided PDMS surfaces with contact-killing activity towards *Proteus mirabillis* only in the first 4h of colonization.
- Co-immobilization of both LAmB and AMP showed that LAmB retained its antifungal activity towards *C. albicans*, even when challenged by a multi-kingdom consortium.

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