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## ABSTRACT BOOK

## **59 - The Propionibacterium spp. extract reduces Candida albicans-induced damage to vaginal epithelial cells and increases mitochondrial response to Candida albicans infection in vitro**

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The Propionibacterium spp. extract reduces Candida albicans-induced damage to vaginal epithelial cells and increases mitochondrial response to Candida albicans infection in vitro

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**Introduction.** Bacterial lysates are prepared by inactivated microorganisms and are extensively employed in clinical settings as immunomodulants and to improve mucosal immunity. However, despite their extensive clinical use, their effects on the host are only partially known. The Propionibacterium spp. extract (PE) is a bacterial lysate included as an active compound in a gel formulation used to treat the symptoms of vulvovaginal candidiasis. Here, we analyzed its possible beneficial effects in an in vitro model of vaginal epithelial cells infected with Candida.

**Materials and Methods.** Initially, we analyzed the PE effects on *C. albicans* and *C. parapsilosis* growth by the microdilution method. We then assessed the capacity of PE to reduce *C. albicans*-induced damage of vaginal epithelial cells through the quantification of lactate-dehydrogenase released by damaged cells in the growth medium. Moreover, in order to test the capacity of the PE to modulate epithelial mitochondrial activity, we evaluated Reactive-Oxygen-Species (ROS) production by the infected epithelial cells, stimulated or not with PE. This was kinetically monitored through the analysis of emitted fluorescence, after addition of the MitoSOX Red probe.

**Results.** Our results show that PE did not affect directly microbial growth. In addition, the epithelial cells stimulation with PE reduced *C. albicans*-induced cell damage. Moreover, the treatment with PE increased the epithelial cells mitochondrial activity in response to *C. albicans* infection in vitro.

**Discussion and Conclusions.** Taken together, our results show that PE increases ROS production by epithelial cells in response to *C. albicans* infection. Therefore, our results suggest that the increased

mitochondrial activity induced by PE, could protect epithelial cells against the damage induced by *C. albicans* infection.