

October 11-12, 2018  
Edinburgh, Scotland

Flavia De Bernardis, J Infec Dis Treat 2018, Volume 4  
DOI: 10.21767/2472-1093-C2-005

## *Candida* vaginitis: Immune responses and vaccine prospects

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**T**he widespread occurrence of vaginal candidiasis and the development of resistance against anti-fungal agents has stimulated interest in understanding the pathogenesis of this disease. The aim of our work was to characterize, in an animal model of vaginal candidiasis, the mechanisms that play a role in the induction of mucosal immunity against *C. albicans* and the interaction between innate and adaptative immunity. Our studies evidenced the elicitation of cell mediated immunity and antibody mediated immunity with a Th1 protective immunity. An immune response in the vaginal compartment was very encouraging to identify the proper targets for new strategies for vaccination or immunotherapy of vaginal candidiasis. Aspartyl-proteinase (Sap2) which is an important immunodominant antigen and virulence factor of *C. albicans* acting in mucosal infections, was assembled with virosomes and a vaccine PEV7 was obtained. The results obtained in the mouse model and in the clinical trial conducted by Pevion Biotech on women have evidenced that the vaccine PEV7, intravaginally administered, has an encouraging therapeutic potential for the treatment of

recurrent vulvovaginal candidiasis. This opens the way to a modality for anti-*Candida* protection at mucosal level.

### **Biography**

Flavia De Bernardis is the Research Director (2000 to present) and Head of the Mycoses Unit of the Department of Infectious, Diseases, at the Istituto Superiore di Sanità, Rome, Italy. She graduated with an Honours Degree in Biological Sciences in 1977 from the 1st State University, Rome, Italy. She has attended a specialization course (four years) in General Pathology, Catholic University of Rome, 1979–1982. She attended the Medical Mycology Course, Duke University of Durham, North Carolina, USA in 1985. She was a Guest Researcher for 12 months at the Department of Microbiology, Georgetown, University, Washington DC, USA in 1993. Research activities include molecular diagnosis of mycoses, and virulence factors of *C. albicans*. She has been the Project Leader of various grant research projects. She has published 102 peer-reviewed papers and 10 book chapters published. She has been invited to 40 national and international congresses as a Guest Speaker. She has been awarded three patents yet.

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