C078

In vivo colonization and pathogenic potential of *C. africana*

Daria Kosmala[1], Natacha Sertour[1], Ricardo Martins[2], Salomé Leibundgut-Landmann[2], Luca Spaggiari[3], Andrea Ardizzoni[3], Eva Pericolini[3], Marie-Elisabeth Bougnoux[1], Christophe d'Enfert[1], Mélanie Legrand[1]

[1]Institut Pasteur, France. [2]University of Zurich, Switzerland. [3]University of Modena and Reggio Emilia, Italy

Abstract

Candida albicans population displays high genetic diversity illustrated by 18-well differentiated genetic clusters. The most distinctive cluster of its population – Cluster 13, also known as *Candida africana* includes strains first described as atypical *C. albicans* isolates of vaginal origin and showing apparent tropism for the female genital tract. In our study, we explored colonization and pathogenic potential of *C. africana* in four *in vivo* mice models, namely gastrointestinal tract (GIT) colonization, oropharyngeal candidiasis (OPC), vulvovaginal candidiasis (VVC), and systemic candidiasis models. For our study, we selected two C. africana strains displaying phenotypic differences (CEC4878 and CEC4854) and compared their interactions with the host to those of reference strain SC5314 and commensal strain 529L. *C. africana* strains displayed significantly decreased ability to colonize the murine GIT compared to strains SC5314 and 529L. Moreover, in the murine model of systemic candidiasis, *C. africana* strains were unable to cause symptoms and mortality in mice, showing significantly decreased fungal burden in kidneys. While there is barely any report of *C. africana* association with the oral cavity our study revealed that C. africana strains can colonize the oral cavity, inducing a host immune response. Surprisingly, the VVC model revealed significant differences between the two *C. africana* strains with strain CEC4878 inducing higher host immune response. This study broadens the knowledge about *C. africana* pathogenic potential and may allow us to highlight the specific features of C. africana that might contribute to its apparent niche restriction.

This project was founded by Marie Skłodowska-Curie Grant No 812969.