

## In-Biofilms cohabitation: *Candida glabrata* protect Diplococci Against Antibacterial Agents.

Seddiki Sidi Mohammed Lahbib<sup>1</sup>, Bucherit-Otmani Zahia<sup>2</sup>, Tefiani Ikrame<sup>2</sup>, Kunkel Dennis<sup>3</sup>.

1. University Center of Naâma, Algeria.

2. Laboratory: Antifungal Antibiotic, Physico-Chemical Synthesis and Biological Activity, University of Tlemcen – Algeria

3. Dennis Kunkel Microscopy Inc, Kailua, HI, USA

**Corresponding author:** Seddiki Sidi Mohammed Lahbib, Lecturer, University Center of Naâma, Algeria, Tel: + 213-662699682; E- mail: seddiki.med@gmail.com

**Copyright:** ©2019 Seddiki S. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

### Report

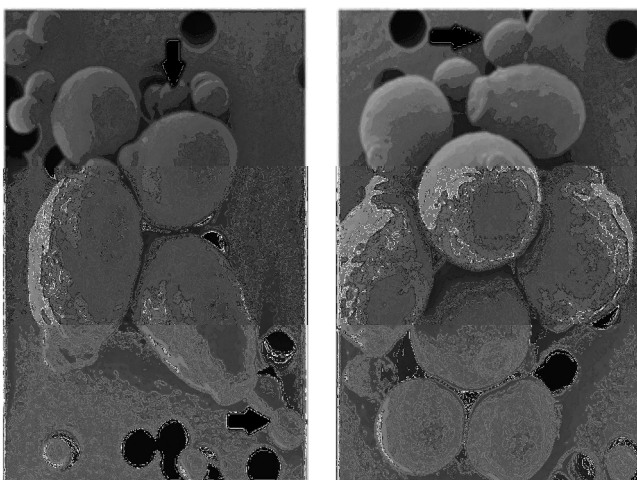
Some opportunistic pathogenic yeast like *Candida spp.* is responsible for systemic fungal infections. Indeed, the frequency of invasive candidiasis has been growing steadily in the hospital thereby confirming the results of fungal infectivities of the catheters.

*Candida glabrata* is emerging yeast in hospitals. This specie can contaminate catheters on which is able to form biofilms. These structures are, for other bacterial species, considered as places where they can be protected of antibiotic treatments. Microbial biofilms are formed of a single or mixed species which include a set of bacteria and/or fungi. Several studies have revealed the coexistence of bacterial species and *Candida spp.* within a biofilm. The aim of this study was to highlight the cohabitation, synergistic or antagonistic effects, between *C. glabrata* which form the biofilm and *Diplococcus spp.* which does not have that ability.

According to the results, *Diplococcus spp.* was sensitive to chloramphenicol, but within biofilm of *C. glabrata* where it lived in cohabitation, it curiously escaped the same antibiotic. Indeed, under some conditions, there may be a synergistic effect among *Candida* species and bacteria which are resistant to antibiotics in mixed biofilms. These results may partly explain the therapeutic failure in the treatment of systemic infections caused by the in-biofilms cohabitation.

### References

1. Adam B., Baillie GS and Douglas LJ, 2002. Mixed species biofilms of *Candida albicans* and *Staphylococcus epidermidis*. *Journal of Medical Microbiology* 51: 344-349.
2. Jeniel E.N. (2016) The Host's Reply to *Candida* Biofilm. *Pathogens* ; 5, 33.
3. Seddiki SML, Boucherit-Otmani Z, Bettioui RA, Boucherit K, Taleb M and Kunkel D, 2015. Nosocomial Fungal Infectivities: In Vivo Formation of *Candida* Biofilms on Catheters Surfaces. *American Journal of Microbiology and Biotechnology* 2: 38-43.
4. Kojic EM, Darouiche RO. (2004) *Candida* infections of medical devices. *Clin Microbiol Rev*; 17: 255-67.



**Figure 1:** Detached cells from mixed biofilm formed on the surface of a catheter removed from a female patient in General Surgery; arrows indicate diplococci (magnification × 1000)