

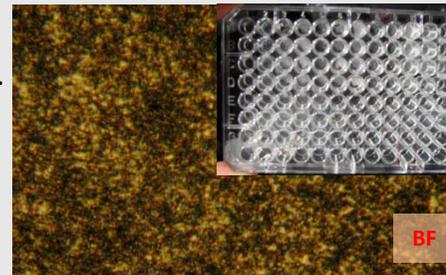
Introduction

Candidemia is a nosocomial infection with a high mortality rate. In this study, the presence of **virulence factors** in *Candida* spp., collected from blood samples, is assessed:

- ✓ Biofilm formation
- ✓ Adhesion to polystyrene
- ✓ Cell surface hydrophobicity
- ✓ Secreted aspartyl proteases activity

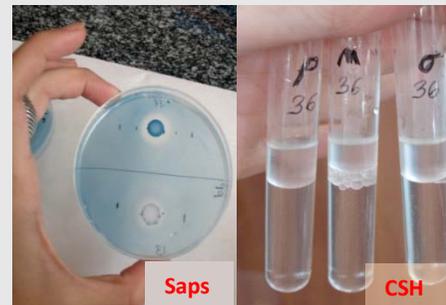
Materials and Methods

Biofilm formation (BF) was evaluated on microtiter plates (1). Biofilm developed in RPMI-1640 24h/37°C was quantified by OD.



Adhesion to polystyrene was assayed on microtiter plates (1) with a PBS cell suspension incubated for 2 h. OD of attached cells was read.

Cell surface hydrophobicity (CSH) was assessed by the MATH method (2) as the percentage reduction of initial turbidity of the aqueous suspension of yeasts.



Secreted aspartyl proteases activity (Saps) was assayed on YCB-BSA agar. Pz index is obtained as the colony/halo diameter produced by cleavage of albumin (3).

References

- 1-Blanco et al. *Oral Microbiol Immunol* 2006; **21**: 69–72
- 2-Hazen et al. *Infect Immun* 1986; **54**: 269-71
- 3-Naglik et al. *Microbiology*. 2008; **154**: 3266-80

Results

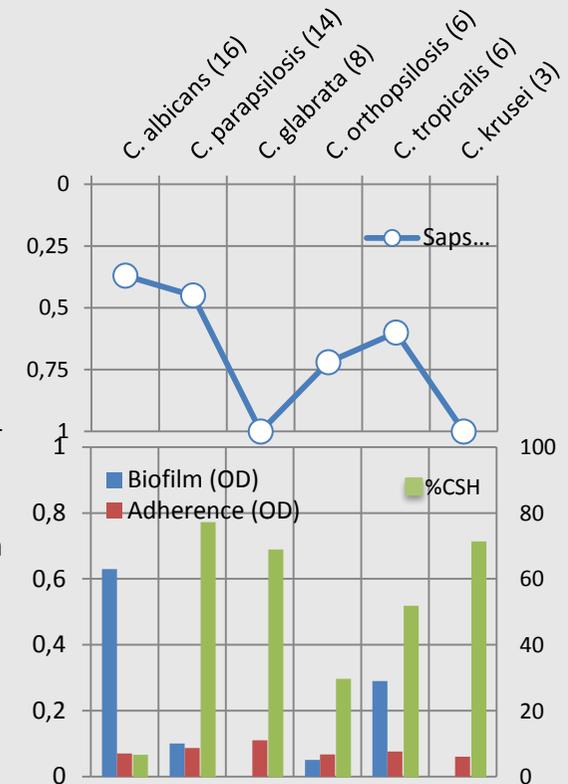
53 *Candida* spp were isolated during 2007-2009 from hemocultures of a tertiary care hospital (Puerta Real, Cadiz, Spain):

C. albicans (16) is non-hydrophobic, slightly adherent, highly biofilm-producing and with great enzymatic activity.

C. tropicalis (6) has filamentation ability, is hydrophobic, adherent, biofilm-producing and with medium enzymatic activity.

C. parapsilosis sensu stricto (14) is more hydrophobic, adherent, biofilm-producing and with greater Saps activity than *C. orthopsilosis* (6), although it produces less biofilm than *C. albicans* and *C. tropicalis*.

C. glabrata (8) and *C. krusei* (3) are hydrophobic and adherent; not biofilm-producing, nor do they have aspartyl protease activity.



Conclusions

There is a high level of species variability with regard to the presence of the pathogenicity factors studied:

C. albicans is the species with greatest biofilm-forming capacity and Saps activity, followed by *C. tropicalis* and *C. parapsilosis sensu stricto*.

Acknowledgements. Financed by the grant to Investigation Group (GR10031) from the Junta de Extremadura, Spain and FEDER.