

TITLE: *LACTOBACILLUS* SPP INHIBITS VIRULENCE FACTORS OF *CANDIDA ALBICANS* ISOLATED FROM VAGINAL MICROBIOTA.

AUTHORS: SANTOS, C.I.^{1,2}; FRANÇA, Y.R.¹; BRANCO, S.J.S.C.¹; MONTEIRO, A.S.¹; MONTEIRO-NETO, V.^{1,2}; ANDRADE-MONTEIRO, C.^{1,3}.

INSTITUTION:

1 UNIVERSIDADE CEUMA, SÃO LUÍS, MA (RUA JOSUÉ MONTELLO, Nº 1, RENASCENÇA II, CEP 65075-120, SÃO LUÍS-MA, BRAZIL)

2 UNIVERSIDADE FEDERAL DO MARANHÃO, SÃO LUÍS, MA (AV. DOS PORTUGUESES, 1966, VILA BACANGA, CEP 65065-545, SÃO LUÍS - MA, BRAZIL)

3 INSTITUTO FEDERAL DE EDUCAÇÃO CIÊNCIA E TECNOLOGIA DO MARANHÃO, SÃO LUÍS, MA (AV. GETÚLIO VARGAS, 4 - MONTE CASTELO, CEP 65030-005, SÃO LUÍS - MA, BRAZIL)

ABSTRACT:

Candida yeasts are usually found in the vaginal microbiota and when any factor interferes with the balance maintained by the host factors and microorganisms such as lactobacilli, manifestation of the disease known as vulvovaginal candidiasis (VVC) occurs. It may be related to *Candida* capacity to form biofilm, which may lead to resistance to antifungal agents used. This study aimed to evaluate the antagonistic activity of *Lactobacillus* spp and *Candida albicans* isolated from healthy women and those with suggestive for VVC, checking if *Lactobacillus* spp interfere in the adhesion process and biofilm formation by *C. albicans*. To verify this, antagonism assay was performed by overlay technique and verified biosurfactant production by *Lactobacillus*. The biosurfactants were tested in the adhesion process and *C. albicans* biofilm formation. The test for evaluating the cytotoxicity of biosurfactants was made in human keratinocytes using the Alamar Blue test. Antagonism assay showed that 15 of 19 *Lactobacillus* samples, including five strains of reference, had inhibitory effect against *C. albicans* with zones varying from 9.5 to 28.5 mm, with clinical *L. paracasei* LV11 strain able to form the largest inhibition zone among clinical isolates. In the production of biosurfactants, 7 of 19 samples were tested producers, including three clinical strains. The biosurfactant produced by clinical *L. crispatus* LV1, increased *C. albicans* CV25 adhesion. During co-incubation biofilm assay all three clinical *Lactobacillus* were capable to decrease *C. albicans* biofilm formation, while in pre-incubation only the biosurfactant produced by *L. crispatus* LV1 was able to reduce in 53% *C. albicans* CV8 biofilm. Cytotoxic assay have shown that only biosurfactant produced by *L. fermentum* ATCC 23271 was cytotoxic, decreasing in 26% the cellular viability. In conclusion we can deduce that *Lactobacillus* spp have some mechanisms that are able to control the overgrowing and expression of *C. albicans* virulence devices.

Keywords: *Candida albicans*, virulence, *Lactobacillus* spp, inhibition

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