

Effect of phenotypic switching on the biological properties and susceptibility to chlorhexidine in *Candida krusei* ATCC 14243

Type: Article

Abstract:

Phenotypic switching is characterized as a virulence factor of *Candida* spp. This study was carried out to evaluate the phenotypic switching ability of *C. krusei* ATCC 14243 and to determine its effect on the biological properties, adherence capacity and susceptibility towards chlorhexidine digluconate (CHX). To induce switched generations *C. krusei* was cultured under nitrogen-depleted growth conditions by adding phloxine B. These phenotypically switched colonies were designated as the 1st generation. Subsequent sub-culturing was performed to produce the 2nd, 3rd and 4th switched generations. The recovery of the 3rd generation was the highest at 85.7% while that of the 4th generation was lower at 70.8%, and the recovery of the 1st and 2nd generations gradually reduced to 46.6% and 36.4%, respectively. All generations of *C. krusei* were susceptible towards CHX. The unswitched *C. krusei* was the most susceptible but the least adherent to coated hard surfaces. The 2nd generation was the least susceptible, but with the highest adherent ability. The minimum inhibition concentration and minimal fungicidal concentration of *C. krusei* of all generations were determined at 0.4 mg mL⁻¹. These observations suggest that the switching activity of *C. krusei* induces changes to its biological properties and susceptibility towards CHX.

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