

0839 Characteristics of Dual Species *Candida* Biofilms on Denture Acrylic Surfaces

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Fungal biofilms contribute to the pathogenesis of oral candidiasis, some 15% of which may be due to dual species infection. Despite extensive studies on single species fungal biofilms on denture acrylic surfaces, the characteristics of dual species biofilms (DSB) are unknown.

Objectives: To examine interactions in DSB of *C. albicans* and *C. krusei* on denture acrylic.

Methods: Two isolates each of *C. albicans* (Ca_h; Ca_l) and *C. krusei* (Ck_h; Ck_l), with high and low biofilm forming ability were used. They were grown in YNB+100 mM glucose and incubated aerobically at 37°C and growth quantified by CFU counts of the resultant biofilm. We determined a) the cell profile of DSB comprising each pair of *Candida* species of a total of four combination pairs (Ca_h v Ck_h; Ca_h v Ck_l; Ca_l v Ck_h; Ca_l v Ck_l) after 12 h., b) the effect of a constant concentration of Ca_h (1x10⁷ cells/ml) with varying concentrations of Ck_h (10⁷-10⁹ cells/ml) on DSB development and, c) the effect of saliva on the growth of the DSB.

Results: 1) DSB exhibited a lower level of biofilm cell volume after 9 h and 12 h in comparison to single species biofilms (*P* < 0.05). 2) *C. albicans* (10⁷ cells/ml) co-incubated with varying concentrations of *C. krusei* was inhibited at high concentrations of *C. krusei* (10⁷-10⁹ cells/ml) after 9 h (*P* < 0.05). 3) Only mono-species (control) *C. krusei* biofilm formation was affected by either saliva pretreated acrylic or the addition of saliva to the incubating medium (*P* < 0.05). **Conclusion:** Our data suggest that the competitive interaction of fungal species may be important in DSB formation on acrylic surfaces and human saliva appear to further modulate this process. (Supported by the Research Grant Council and the Committee of Research and Conference grants, University of Hong Kong, HKSAR).

[Seq #72 - *Candida*](#)

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