

TITLE: PHENOTYPIC SWITCHING IN BLOOD ISOLATES OF *Candida tropicalis* IS ASSOCIATED WITH CHANGES IN HAEMOLYTIC CAPABILITY

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ABSTRACT:

Candida tropicalis is an increasingly important human pathogen, although virulence attributes related to its pathogenesis it is poor evaluated. We have recently showed that blood isolates of *C. tropicalis* exhibited higher haemolysis than other *Candida* species. Furthermore, this species undergoes phenotypic switching that may be associated with changes in the expression of virulence traits. In this study we evaluate the effect of switching on haemolysis ability. We employed strains of the systems 49.07 (parental smooth, crepe variant, rough variant, crepe revertant and rough revertant), 110.10 (parental smooth, crepe variant, flocced variant, crepe revertant and flocced revertant), 522.11 (parental smooth, variant irregular edge, revertant of irregular edge), 46.10 (parental fuzzy, mycelial variant, mycelial revertant) and 335.07 (parental smooth, irregular centre variant, irregular centre revertant). Haemolysis was based on the amount of released hemoglobin in liquid Sabouraud dextrose medium containing 7% defibrinated sheep blood, following incubation at 37°C for 48 h. The hemolysis was calculated according to the equation: $\text{Haemolysis (\%)} = 100 - [(A_p - A_s) / (A_p - A_n) \times 100]$; where A_p , A_s and A_n are the absorbance of the positive control, test sample and negative control, respectively. The haemolysis promoted by the two variant colonies exhibiting crepe and rough phenotypes, derived from the isolate 49.07, and their respective revertants showed higher activity than the parental smooth phenotype. Differently, the hemolysis promoted by the variant irregular edge derived from the isolate 522.11, and its revertant had lower activity than the parental strain. Interesting to note that although the colonial morphology of revertants resembles the original phenotype of their respective parental strains, the haemolytic capability of revertants were not at same extent of that observed for the parental strains. On the other hand, the colony phenotype denoted irregular edge, derived from the isolate 335.07, showed same hemolytic activity than its parental unswitched morphotype, although its revertant showed lower activity. No differences were observed in the production of hemolytic factor between variants and parental phenotypes of the isolates 100.10 and 4.10 (data not shown). Based on these results, it is suggested that the switching event exerts influence on haemolytic capability of *C. tropicalis*.

Keywords: *Candida tropicalis*, morphological variants, haemolysis.

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