

Drug susceptibility and enzymatic activity of *Candida* isolated from mobile phone and hand surfaces

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ABSTRACT

Introduction: Evaluation of susceptibility of isolated fungi as well as the type and activity of enzymes they release allows to determine their pathogenicity.

Aim: to assess potential correlations between drug susceptibility and enzymatic activity of strains isolated from mobile phone and hand surfaces

Materials and methods: The mycological evaluation included 175 mobile phones and 175 hands of the phone owners. Drug susceptibility was assessed using the FUNGITEST® (Sanofi Diagnostics Pasteur); enzymatic activity was evaluated using the API ZYM test (BioMerieux).

Results: We found statistically significant correlations between an increased resistance to 5-fluorocytosine, ketoconazole, fluconazole and higher activity of six selected enzymes for *Candida glabrata* strains isolated from hand surfaces as well as an increased resistance to 5-fluorocytosine, miconazole, itraconazole and an increased activity of seven selected enzymes for strains isolated from mobile phone surfaces. We found statistically significant correlations between an increased resistance to 5-fluorocytosine, ketoconazole,

miconazole, itraconazole and higher activity of six selected enzymes for *Candida albicans* strains isolated from hand surfaces as well as an increased resistance to 5-fluorocytosine, miconazole, fluconazole and higher activity of seven selected enzymes for strains isolated from phone surfaces. We found statistically significant correlations between an increased resistance to 5-fluorocytosine, ketoconazole, itraconazole, fluconazole and higher activity of six selected enzymes for *Candida krusei* strains isolated from hand surfaces as well as an increased resistance to 5-fluorocytosine, ketoconazole, itraconazole, fluconazole and higher activity of five selected enzymes for strains isolated from phone surfaces.

Conclusions: We found varying correlations between enzymatic activity and drug resistance depending on the site of isolation and the species/genus of fungi. The drugs to which the evaluated strains showed resistance were the same for hand and mobile phone isolates.

Keywords: *Candida*, Fungitest, API ZYM, hands, mobile telephones
