

## Flow cytometry susceptibility testing for conventional antifungal drugs and Comparison with the NCCLS Broth Macrodilution Test

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### Abstract

**Introduction:** During the last decade, the incidence of fungal infection has been increased in many countries. Because of the advent of resistant to antifungal agents, determination of an efficient strategic plan for treatment of fungal disease is an important issue in clinical mycology. Many methods have been introduced and developed for determination of invitro susceptibility tests. During the recent years, flow cytometry has developed to solving the problem and many papers have documented the usefulness of this technique. **Materials and methods:** As the first step, the invitro susceptibility of standard PTCC (Persian Type of Culture Collection) strain and some clinical isolates of *Candida* consisting of *Candida albicans*, *C. dubliniensis*, *C. glabrata*, *C. kefyr* and *C. parapsilosis* were evaluated by macrodilution broth method according to NCCLS (National Committee for Clinical Laboratory Standards) guidelines and flow cytometry susceptibility test. **Results:** The data indicated that macro dilution broth methods and flow cytometry have the same results in determination of MIC (Minimum Inhibitory Concentration) for [amphotericin B](#), clotrimazole, fluconazole, ketoconazole and miconazole in *C. albicans* PTCC 9027 as well as clinical *Candida* isolates, such as *C. albicans*, *C. dubliniensis*, *C. glabrata*, *C. kefir*, and *C. parapsilosis*. **Discussion:** Comparing the results obtained by macrodilution broth and flow cytometry methods revealed that flow cytometry was faster. It is suggested that flow cytometry susceptibility test can be used as a powerful tool for determination of MIC and administration of the best antifungal drug in treatment of patients with *Candida* infections.

### Reaxys Database Information

### Author keywords

Flow cytometry; Macrodilution; NCCLS; Susceptibility

### Indexed Keywords

**EMTREE drug terms:** [amphotericin B](#); clotrimazole; fluconazole; ketoconazole; miconazole

**EMTREE medical terms:** article; broth dilution; *Candida albicans*; *Candida dubliniensis*; *Candida glabrata*; *Candida kefir*; *Candida parapsilosis*; controlled study; drug sensitivity; flow cytometry; fungus growth; growth inhibition; minimum inhibitory concentration; nonhuman

**Chemicals and CAS Registry Numbers:** [amphotericin B](#), 1397-89-3, 3062-87-0; clotrimazole, 22993-70-1; fluconazole, 86386-73-8; ketoconazole, 70277-82-1; miconazole, 22917-87-8

**Manufacturers:** Drug manufacturer: Pars Daru; Sigma; behvazan rasht.

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