



## Antifungal Activity of *Cymbopogon winterianus* (citronella) Essential Oil on *Candida albicans* isolates of Pediatric Clinical Importance

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**SUMMARY.** Candidemia is an important problem in pediatrics, especially because of the high mortality rates in immunocompromised and hospitalized children. The essential oil of *Cymbopogon winterianus* possess a wide range of pharmacological properties, including antimicrobial activity. In order to assess the antifungal activity of the essential oil of *Cymbopogon winterianus* Jowitt ex Bor (Poaceae) against isolates of *Candida albicans* of clinical relevance in pediatrics, the Minimum Inhibitory Concentration (MIC) and Minimum Fungicidal Concentration (MFC) were determined through broth microdilution technique. In this work, the possible mechanism of action exerted by the essential oil against the microbial cell wall and plasmatic membrane was also evaluated through the sorbitol and ergosterol assays. The natural product displayed a MIC of 128  $\mu\text{g/mL}$  against 80% of the isolates and a MFC of 256  $\mu\text{g/mL}$  against 90% of the strains. No involvement with the cell wall nor binding to ergosterol was observed.

**RESUMEN.** La candidemia es un problema importante en pediatría, especialmente debido a las altas tasas de mortalidad en niños inmunocomprometidos y hospitalizados. El aceite esencial de *Cymbopogon winterianus* posee una amplia gama de propiedades farmacológicas, incluida la actividad antimicrobiana. Con el objetivo de evaluar la actividad antifúngica del aceite esencial de *Cymbopogon winterianus* Jowitt ex Bor (Poaceae) frente a aislados de *Candida albicans* de importancia clínica en pediatría, se determinó la concentración mínima inhibitoria (MIC) y la concentración fungicida mínima (MFC) mediante microdilución en caldo. En este trabajo, el posible mecanismo de acción ejercido por el aceite esencial contra la pared celular microbiana y la membrana plasmática también se evaluó a través de los ensayos de sorbitol y ergosterol. El producto natural mostró una MIC de 128  $\mu\text{g/mL}$  frente al 80% de los aislados y un MFC de 256  $\mu\text{g/mL}$  frente al 90% de los aislados.

**KEY WORDS:** antifungal activity, *Candida albicans*, candidemia, *Cymbopogon winterianus*, essential oil, pediatrics.

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