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Abstract

Synthesis and Anticandidal Activity of New Imidazole Derivatives †

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During the last few years, there has been an increased awareness of morbidity and mortality related to invasive and systemic fungal disease because of resistant fungi and immunocompromised infections, for instance, AIDS. Due to this reason, various antifungal drugs have been improved in an attempt to reduce the effect of fungal infections. Azoles in the form of amphotericin B, 5-fluorocytosine, and caspofungin have been used based on their antifungal impact **[**1,2].

Azoles are administered against C14α-demethylase in the ergosterol pathway. The subsequent ergosterol exhaustion and accumulation of 14α-methylsterols intervene in the function of ergosterol as the determinant cellular membrane ingredient [3]. Azoles including fluconazole, miconazole, itraconazole, clotrimazole, and econazole, are used for treatment of patients who are affected by different Candida species [4].

By virtue of the above consequence, in the present study, new imidazole derivatives were synthesized. The structures of the synthesized compounds were elucidated using FT-IR, ^{1}H-NMR, ^{13}C-NMR, and HRMS spectral data. The target compounds were screened for in vitro anticandidal activity against Candida species by broth microdiluation methods. The effects of the selected compounds against ergosterol biosynthesis were observed by the LC-MS-MS method, which is based on quantification of the ergosterol level in *C. albicans*.

Conflicts of Interest: The authors declare no conflict of interest.

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