

Antifungal properties of phenyl fatty hydroxamic acids and their copper complexes synthesized based on canola and palm kernel oils

ABSTRACT

Phenyl fatty hydroxamic acids (PFHAs) were synthesized by phenyl hydroxylaminolysis of canola or palm kernel oils using lipozyme TL IM as catalyst. Copper complexes of phenyl fatty hydroxamic acids (copper phenyl fatty hydroxamate (Cu-PFHs)) acids were prepared by stirring the phenyl fatty hydroxamic acids which were dissolved in hexane and copper(II) nitrate solution. The antifungal properties of phenyl fatty hydroxamic acids and its copper(II) complex Cu-PFHs based on canola and palm kernel oils were separately investigated against *Candida parapsilosis*, *Candida albicans* and *Aspergillus fumigatus* by the disc diffusion method using Mueller-Hinton agar. The results showed that antifungal activity of Cu-PFHs is higher than phenyl fatty hydroxamic acids do and also the activity of phenyl fatty hydroxamic acids and Cu-PFHs increase while their concentrations increase. The antifungal activity of phenyl fatty hydroxamic acids and Cu-PFHs are significantly higher than nystatin while use against the *A. fumigatus*, *C. parapsilosis* and *C. albicans* and also are significantly higher than ketoconazole while use against the *A. fumigatus*.

Keyword: Antifungal activity; Canola oil; Copper phenyl fatty hydroxamate; Palm kernel oil; Phenyl fatty hydroxamic acids.