

Antifungal activity of neolignan derivates from ulin wood (*Eusideroxylon zwageri*) in topical dosage forms against *Candida albicans* and *Mycosporum gypseum*

Chaerunisaa A. Y.^{1,*}, Muhaimin², Sriwidodo¹, Sulistyaningsih¹, Lubis I. K.¹, Alfiani F.¹.

¹Faculty of Pharmacy, Padjadjaran University, Jl. Raya Jatinangor Km 21.5 Sumedang 45363, Indonesia

²Department of chemistry education, faculty of education, Jambi University, Kampus Pinang Masak, Jambi, Indonesia, 36360

^{*}anis.chaerunisaa@yahoo.de

ABSTRACT

The long medication of synthetic antifungal agents tends to give resistance and also kill the normal flora. The alternative natural antifungal agent then needed to be explored. Ulin wood (*Eusideroxylon zwageri*) powder have been traditionally used in preventing and curing skin from several fungi infection in some area in Indonesia. The aim of this research was to study antifungal activity from *Eusideroxylon zwageri* against *Candida albicans* and *Mycosporum gypseum* as fungus causing skin diseases. Eusiderin as neolignan derivate from ulin wood was isolated by extraction using methanol and fractionated by n-hexane with further purification by thin layer and column chromatography. The n-hexane fraction were formulated into topical dosage form creams. Antifungal activity were studied either from pure fraction of n-Hexane or after the formulation. The results showed that Ultra violet spectra of the n-hexane fraction gave absorbance at λ_{\max} 243 and 312 nm, while that of Infra Red showed some specific peaks which was later was predicted as neolignan derivates. Antifungal study on the sample after formulated as topical dosage forms showed that cream using o/w emulsion system can maintain its activity as antifungal agent while that with w/o could not. It can be concluded that neolignan derivates from ulin wood with antifungal activity against *Mycosporum gypseum* can be formulated into topical dosage form using the system containing high content of water such as cream with o/w system.

Keywords : *Eusideroxylon zwageri*, ulin wood, neolignan, antifungal, *Mycosporum gypseum*, *Candida albicans*

INTRODUCTION

Fungal skin infection is caused by fungi. They may be yeast fungus (*Candida*) that cause candidiasis and mold-like fungi (dermatophytes) that cause ringworm or tinea. Iron wood powder (*Eusideroxylon zwageri*) has been used in ethnobotanical practice to treat some skin disorder in human in some area of Indonesian provinces. In chinese medication, it has been used to treat dhiarea, malaria, and poisonous bite (Lemmens, 1996). According