

Local Herbs Gel Formulation of *Allium sativum*, *Curcuma longa*, *Andrographis paniculata* and *Alpinia galanga* for the Treatment of Dermatophytosis

Noor Azimah A., Bibi Raziah N.R. and Mariam Aisha Fatima
Faculty of Health and Life Sciences, Management and Science University

Erwin M.F
School of Pharmacy, Management and Science University

Corresponding author:
noor_azimah@msu.edu.my

Abstract

Dermatophytosis is a widespread disease produced by pathogenic fungus particularly *Trichophyton rubrum*. The present study reports on the formulation and evaluation of topical gel containing *Allium sativum*, *Curcuma longa*, *Andrographispaniculata* and *Alpinialangalanga* extracts for significant antifungal potential. Minimum Inhibitory Concentration (MIC) of single plant and combination including synergistic effects were also determined. Macrodilution method was used to determine the MIC against *Trichophyton rubrum*. Gel formulations were evaluated using physicochemical parameters such as color, appearance, pH, viscosity, spreadability and stability testing. Overall MIC values of extracts against *Trichophyton rubrum* ranged from 31.25 mg/mL to 500 mg/mL. The MIC for *A.sativum*, *C.longa*, *A.paniculata* and *A.galanga* respectively were 500mg/ml, 31.25mg/ml, 250mg/ml and 500mg/mL. However, the assessment of combinations of selected extracts showed indifferent and antagonism interactions. This study also revealed that the formulation containing *C.longa* showed better stability than other formulations. *A.galanga* gel formulation has good viscosity and spreadability making it a good candidate in the gel formulation with good efficacy as an antifungal. Thus, this herbal gel formulation showed potential used to inhibit growth of *T. rubrum* that can be the alternative treatment of dermatophytosis.

Keywords:

Medicinal plants, Topical gel, MIC, Synergistic effect, *Trichophyton rubrum*