

ANTIFUNGAL ACTIVITY OF *ALPINIA GALANGA* AND *ALLIUM ASCALONICUM* EXTRACTS

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Abstract

The objective of this study was to evaluate the inhibitory effects of *Alpinia galanga* (Zingiberaceae) and *Allium ascalonicum* (Liliaceae) on filamentous fungi (*M. canis*, *M. gypseum* and *T. mentagophyte*) and an opportunistic yeast (*Candida albicans*), using a broth dilution technique. The table showed the $IC_{50} \pm SEM$ and $E_{max} \pm SEM$ of the plant extracts, compared to those of ketoconazole and griseofluvin. According to the IC_{50} values, the extract of *A. galanga* exhibited a more pronouncing effect against *M. canis* than other fungi, while the effect of *A. ascalonicum* on the tested microorganisms was not significantly different. Taken together with our previous study on the effect of *Piper betle*, it is concluded that both *A. galanga* and *A. ascalonicum* could serve as the alternatives for the antifungal recipes. However, possible side effects remain to be determined.

| | <i>Alpinia galanga</i> | | <i>Allium ascalonicum</i> | | ketoconazole | | griseofluvin | |
|----|------------------------|-----------------------------|---------------------------|-----------------------------|----------------------------|---------------------------------|----------------------------|---------------------------------|
| | IC_{50} (mg/ml) | % E_{max} at 256 mg/ml | IC_{50} (mg/ml) | % E_{max} at 256 mg/ml | IC_{50} (μ g/ml) | % E_{max} at 64 μ g/ml | IC_{50} (μ g/ml) | % E_{max} at 64 μ g/ml |
| Mc | 26.05 \pm 7.42 | 100.00 \pm 0.00 | 69.87 \pm 45.58 | 100.00 \pm 0.00 | 2.84 \pm 0.66 | 100.00 \pm 0.00 | 14.14 \pm 3.84 | 94.44 \pm 5.56 |
| Mg | 83.51 \pm 10.91 | 94.44 \pm 5.56 | 73.33 \pm 22.67 | 77.78 \pm 11.11 | 7.64 \pm 3.36 | 100.00 \pm 0.00 | 8.04 \pm 5.59 | 91.67 \pm 8.33 |
| Tm | 45.32 \pm 61.02 | 100.00 \pm 0.00 | 61.20 \pm 15.03 | 94.44 \pm 5.56 | 1.21 \pm 0.23 | 100.00 \pm 0.00 | 5.13 \pm 1.21 | 100.00 \pm 0.00 |
| Ca | 53.33 \pm 10.67 | 100.00 \pm 0.00 | 96.00 \pm 18.48 | 72.22 \pm 5.56 | 8.39 \pm 3.00 | 100.00 \pm 0.00 | 56.20 \pm 3.00 | 50.00 \pm 5.3 |

(Mc=*M. canis*, Mg=*M. gypseum*, Tm=*T. mentagophyte*, Ca=*Candida albicans*)

Key words: *Alpinia galanga*, *Allium ascalonicum*, antifungal effect, dermatophytes, yeast