

ABSTRACT

PHARMACOGNOSTIC STUDY OF RHIZOME AND ANTIMICROBIAL ACTIVITY FROM ESSENTIAL OIL *Kaempferia galanga* Linn. RHIZOME

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For pharmacognostic study and antimicrobial activity study rhizomes of *Kaempferia galanga* Linn. were collected from Plaosan-Magetan in Indonesia. Fresh rhizome and crude drug evaluations were performed by macroscopic and microscopic methods while constant numbers of quality of crude drug were performed based on Materia Medika Indonesia (MMI) guideline standard methods. Anatomical characters showed volatile oil and a numerous of starch grains. Physicochemical constant result of total ash is $(6.3 \pm 0.1)\%$; acid insoluble ash $(1.7 \pm 0.3)\%$; water soluble ash $(2.1 \pm 0.3)\%$; ethanol soluble extractive $(15.8 \pm 0.3)\%$; water soluble extractive $(10.8 \pm 0.5)\%$; loss on drying $(14.7 \pm 0.1)\%$ and volatile oil were $(4.5 \pm 0.0)\%$ of dry weight respectively. Ethanol 96% extracts of *Kaempferia galanga* Linn. rhizome were screened for presence of chemically active compound using standard methods. The result revealed the presence of alkaloid, terpenoid, flavonoid and polyphenol. Compounds 2-propenoic acid, 3-(4-methoxyphenyl)-, ethyl-ester were found as major components of the volatile oil. Antimicrobial activity of the volatile oil was tested using dilution method with the inhibition concentration against *Staphylococcus aureus* and *Candida albicans* at 0.167%v/v and 0,0075%v/v. The conclusion of this study are *Kaempferia galanga* Linn. rhizomes sample meet some quality requirements in MMI including total ash, acid insoluble ash, water soluble ash content, content of ethanol soluble extract and drying shrinkage. *Kaempferia galanga* essential oil has antimicrobial activity against *Staphylococcus aureus* and *Candida albicans*.

Key words: *Kaempferia galanga* Linn., pharmacognostic study, macroscopic, microscopic, phytochemical screening, physicochemical constant, GC-MS, antimicrobial activity.