Manuscript ID : 00001-59706

Source ID : 00000538

International Journal of Applied Pharmaceutics

Volume 13, Issue Special Issue 4, December 2021, Pages 132-135, Page Count - 4

THE DETERMINATION OF ETHYL P-METHOXY CINNAMATE IN KAEMPFERIA GALANGA L. RHIZOME EXTRACT HARVESTED IN RAINY AND DRY SEASONS

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Abstract

***Objective**: Kaempferia galanga L. rhizome (KGR), has been empirically used in Indonesia, particularly by Javanese, to cure inflammation. KGR contains various secondary metabolites which explain its pharmacology activities, among them is ethyl p-methoxycinnamate (EPMC). However, due to the different seasons of our country, the yield of extraction is often unalike. In this work, we determined the percentage of yield (w/w), the water content (thermogravimetric method), and the concentration of EPMC in the Ethanol extract of Kaempferia galanga L. Rhizome (EEKG) harvested from the rainy (EEKG-R) and dry seasons (EEKG-D).*

***Methods**: The sun-dried rhizomes were cold macerated for 3x24 h with 70% ethanol, filtered, and the solvent was evaporated at 40-45 °C until a viscous extract was obtained. The determination of EPMC in the extract was carried out using the RP-HPLC standard addition method. Detection was set at 308 nm; injection volume 20 µl; flow rate 1.0 ml/min. The column used is C18 (length 250 mm, internal diameter 4.6 mm, particle size 5 µm).*

***Results**: The yield of EEKG-R (harvested in the rainy season) = 14.56% w/w, water content = 4.37%, and the EPMC = 0.01%. Meanwhile the yield of EEKG-D (harvested in the dry season) = 5.79% w/w, water content = 18.76%, and the EPMC = 0.001%.*

***Conclusion**: Different climates affect the percentage yield and the quality of the extract. In our work, the EEKG-R (harvested in the rainy season) revealed a better quality compared to that of EEKG-D (harvested in the dry season) This study gives important information to standardize and optimize the harvest time of KG rhizomes for drugs development, which are strongly influenced by seasonal differences.*

Author Keywords

Anti-inflammation, Ethyl p-methoxycinnamate, Herbal medicine, Kaempferia galanga L

Acknowledgement

This research is supported by Riset Disertasi Dosen Unpad (RDDU) and Academic Leadership Grant of Universitas Padjadjaran No. 1427/UN6.3.1/lT/2020. This manuscript is a part of the doctoral research of Indah Suasani Wahyuni.

ISSN Print:
Source Type: Journals
Publication Language: English
Abbreviated Journal Title: Int J App Pharm
Publisher Name: Innovare Academic Sciences Pvt Ltd
Major Subject: Life Sciences

ISSN Online: 0975-7058
Document Type: Journal Article
DOI: https://dx.doi.org/10.22159/ijap.2021.v13s4.43841
Access Type: Open Access
Resource Licence: CC BY-NC
Subject Area classification: Biochemistry, Genetics and

Subject area: Biochemistry
Molecular Biology
Source: SCOPEDATABASE

Reference