# BIOASSAY-GUIDED ISOLATION OF FREE RADICAL SCAVENGING AND ANTIOXIDATIVE FLAVONOID FROM *ZINGIBER OTTENSII* (ZINGIBERACEAE)

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# ABSTRAK

## PEMENCILAN MELALUI BIOCERAKINAN UNTUK PELEKATAN RADIKAL BEBAS AND ANTIOKSIDAN FLAVONOID DARIPADA *ZINGIBER OTTENSII* (*ZINGIBERACEAE*)

Biocerakinan terhadap fraksi mengunakan 2,2-diphenyl-1-picrylhydrazyl telah dijalankan terhadap rizom dan daun *Zingiber ottensii* untuk pemencilan and pengenalpastian kompoun yang menunjukkan aktiviti bioaktif secara pelekatan radikal bebas dan antioksidan yang hadir dalam ekstrak metanol. kompoun aktif yang dipencilkan dikenalpasti menggunakan kaedah spektroskopi sebagai kuersetin-3-*O*-ramnosilglucosida. Kandungan keseluruhan kompoun aktif setara dengan kuersetin juga telah dikira secara kuantitatif dan didapati bahawa kandungan kuersetin dalam rizom lebih banyak berbanding daun. Rizom juga didapati mengadungi 60% gula berdasarkan berat keringnya dan dikenalpasti dengan menggunakan Reagen Bial's sebagai heksos dan pentos. Penemuan ini menyumbang kepada kajian pertama kalinya terhadap kelompok halia kerana ulasan perpustakaan terhadapnya belum wujud. Ujian autoksidasi β-carotene juga telah dijalankan untuk mengkaji kebolehan kompoun yang dipencilkan untuk menghalang oksidasi lipid. Didapati bahawa kompoun ini adalah sama aktif berbanding antioksidan sintetik, BHT, dan lebih aktif berbanding dengan aglaikon kuersetin. Walaupun kuersetin telah diketahui sebagai pelekat radikal dan penghalang oksidasi lipid yang sangat baik, inilah kali pertama kompoun ini dikesan dalam *Z. ottensii*.

# ABSTRACT

## BIOASSAY-GUIDED ISOLATION OF FREE RADICAL SCAVENGING AND ANTIOXIDATIVE FLAVONOID FROM ZINGIBER OTTENSII (ZINGIBERACEAE)

*Bioassay-guided fractionation by 2, 2-diphenyl-1-picrylhydrazyl has been conducted for rhizomes and leaves of Zingiber ottensii to isolate and elucidate the bioactive compound that possess free radical scavenging and antioxidative activities present in the methanol extract. The isolated active compound was identified by means of spectroscopic methods as quercetin-3-O-rhamnosylglucoside. The total content of the active compound in equivalence to quercetin was also quantified and found that the quercetin content was more in rhizomes compared to the leaves. The rhizomes were also found to contain sugars which contributed 60% of the dry weight and was identified by using Bial's Reagent as hexoses and pentoses. This finding can contribute towards the novel study in gingers since there is a void in the present literature on the subject. The autoxidation of β-carotene was also tested in effort to investigate the ability of the isolated compound toward inhibition of lipid peroxidation. It was found that this compound was as active as the synthetic antioxidant, BHT, and was more active than the corresponding quercetin aglycone. Eventhough, quercetin has been known as an excellent radical scavenger and inhibit lipid peroxidation, this is the first time this compound was detected in Z. ottensii.*