Uji penghambatan aktivitas lipoksigenase ekstrak umbi ubi jalar (ipomoea batatas l.) varietas ungu, orange, dan putih di Indonesia = Inhibition of lipoxygenase activity by sweet potato (ipomoea batatas l.) tubers extract with purple, orange, and white varieties in Indonesia

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Abstrak

Ubi jalar Ipomoea batatas L. varietas ungu, orange, dan putih dapat dibedakan berdasarkan warna kulit dan daging umbinya. Penelitian aktivitas antiinflamasi oleh tanaman ini masih terbatas meskipun telah dimanfaatkan secara tradisional. Penelitian ini bertujuan untuk mengetahui nilai IC50 ekstrak umbi Ipomoea batatas L. dalam menghambat aktivitas lipoksigenase. Simplisia umbi ubi jalar diekstraksi dengan metode maserasi menggunakan pelarut etanol 70. Masing-masing ekstrak diuji penghambatannya terhadap aktivitas lipoksigenase dan dilakukan penapisan fitokimia serta penetapan kadar flavonoid total. Nilai IC50 dan kadar flavonoid total yang diperoleh dari masing-masing ekstrak dianalisis hubungannya menggunakan software SPSS versi 22.0.

Hasil uji penghambatan aktivitas lipoksigenase menunjukkan bahwa nilai IC50 ekstrak umbi ubi jalar ungu, orange, putih berturut-turut adalah 46,09; 52,12; dan 63,69 g/mL. Pada penapisan fitokimia diketahui bahwa ketiga ekstrak mengandung golongan senyawa alkaloid, flavonoid, saponin, tanin, dan glikosida. Kadar flavonoid total dalam ekstrak ubi jalar ungu, orange, dan putih berturut-turut adalah 8,45 0,41; 7,57 0,03; dan 6,12 0,14 mgQE/g ekstrak. Kadar flavonoid total dan nilai IC50 ketiga ekstrak saling berhubungan kuat dan berbanding terbalik dengan nilai signifikansi 0,026 dan korelasi -0,999 yang menunjukkan bahwa semakin tinggi kadar flavonoid total maka semakin rendah IC50.

.....Sweet potatoes Ipomoea batatas L. with purple, orange, and white varieties can be differentiated by their skin and flesh tubers rsquo colors. Research on anti inflammatory activity of this plant is still limited although has been used traditionally. This study aims to determine IC50 value of sweet potato tubers extract in inhibiting lipoxygenase activity. Dried tubers of sweet potato were extracted by maceration with ethanol 70 . Each extracts were tested for lipoxygenase inhibitory activity, phytochemical screening, and total flavonoid content. IC50 and total flavonoid content obtained from each extracts were analyzed using SPSS version 22.

IC50 value of purple, orange, and white sweet potato tuber extract were 46.09, 52.12, and 63.69 g mL. Phytochemical contents of each extracts contain alkaloids, flavonoids, saponins, tannins, and glycosides. Total flavonoid content in purple, orange and white sweet potato extracts are 8.45 0.41 7.57 0.03 and 6.12 0.14 mgQE g extract. Total flavonoid contents and IC50 values of each extracts are strongly correlated and inversely proportional with significance value 0.026 and correlation value 0.999 which indicate that the higher the total flavonoid contents the lower the IC50.