ABSTRAK

Nyeri merupakan pengalaman sensorik dan emosional yang tidak menyenangkan yang timbul akibat kerusakan jaringan aktual maupun potensial, dan bersifat subjektif. Nyeri menjadi sinyal fisiologis adanya gangguan dalam tubuh yang dapat ditangani dengan obat analgesik. Namun, penggunaan analgesik dalam jangka panjang dan dosis tinggi dapat menyebabkan efek samping seperti gangguan saluran pencernaan, fungsi ginjal dan hati, serta risiko ketergantungan. Oleh karena itu, diperlukan alternatif pengelolaan nyeri yang lebih aman melalui pemanfaatan bahan alam. Daun Sirih Merah (*Piper crocatum* Ruiz and Pav) diketahui mengandung metabolit aktif yang berpotensi sebagai analgesik. Penelitian ini merupakan penelitian eksperimental murni dengan rancangan acak lengkap pola searah yang bertujuan untuk menguji efek analgesik dekokta daun sirih merah (DDSM) menggunakan metode *writhing test* pada mencit betina galur *Swiss* yang diamati dari respon geliat pada mencit. Metode *writhing test* merupakan pengujian nyeri perifer dengan induksi asam asetat secara intraperitoneal yang menimbulkan respons nyeri berupa refleks geliat pada hewan uji, kemudian diamati setiap 5 menit selama 60 menit. Data jumlah geliat dan persentase proteksi dianalisis secara statistik menggunakan uji normalitas *Shapiro-Wilk* dan homogenitas untuk menentukan metode uji yang sesuai. Data menunjukkan terdistribusi normal dan homogen, maka analisis dilakukan dengan uji parametrik *One-Way ANOVA* dan *Post-Hoc Bonferroni*. Hasil uji fitokimia menunjukkan DDSM mengandung senyawa alkaloid, flavonoid, tanin dan saponin. Hasil menunjukkan bahwa DDSM dosis 833,33 mg/KgBB, 1666,66 mg/KgBB dan 3333,33 mg/KgBB memiliki efek analgesik dengan jumlah persentase proteksi geliat sebesar 75,08%, 82,85 %, dan 87,06%.

Kata kunci: analgesik, *Piper crocatum Ruiz and Pav*, dekokta, *writhing test*

ABSTRACT

Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage and is subjective in nature. Pain serves as a physiological signal indicating a disturbance in the body that can be managed with analgesic drugs. However, the long-term use of analgesics at high doses may cause adverse effects, including gastrointestinal disorders, impaired kidney and liver function, and the risk of dependence. Therefore, safer alternatives for pain management derived from natural products are needed. Red betel leaf (Piper crocatum Ruiz & Pav.) is known to contain bioactive metabolites with potential analgesic activity. This study was a true experimental study using a completely randomized one-way design to evaluate the analgesic effect of red betel leaf decoction (DDSM) in female Swiss mice using the writhing test. Analgesic activity was evaluated based on the number of writhing responses exhibited by the mice. The writhing test is a method used to assess peripheral pain by intraperitoneal administration of acetic acid, which induces a pain response characterized by abdominal writhing. The writhing responses were recorded every 5 minutes for 60 minutes. The number of writhing episodes and the percentage of writhing inhibition were statistically analyzed using the Shapiro–Wilk normality test and a homogeneity test to determine the appropriate statistical method. The data were normally distributed and homogeneous; therefore, statistical analysis was performed using one-way analysis of variance (ANOVA), followed by Bonferroni's post hoc test. Phytochemical analysis showed that DDSM contained alkaloids, flavonoids, tannins, and saponins. The results showed that DDSM administered at doses of 833.33, 1666.66, and 3333.33 mg/kg body weight exhibited analgesic activity, with percentage inhibition of writhing values of 75.08%, 82.85%, and 87.06%, respectively.

Keywords: *analgesic, Piper crocatum Ruiz and Pav, decoction, writhing test*