ABSTRACT

Background: Red ginger rhizome (*Zingiber officinale* var. *rubrum*) has pharmacological effects such as anti-inflammatory, antioxidant and antimicrobial. In addition, red ginger rhizome also has secondary metabolites such as alkaloids, flavonoids, phenolics, saponins and triterpenoids. This study aims to determine the effectiveness of giving red ginger rhizome fraction at a dose of 10% against cuts in male white rats.

Method: This study used Completely Randomized Design (RAL) with a Post Only Control Group Design approach with 5 treatments namely positive control (Povidone iodine (Betadin 10%) ointment), negative control (Vaseline flavum), treatment 1 (n-hexane fraction), treatment 2 (ethyl acetate fraction) and treatment 3 (n-butanol fraction). Parameters observed were the intensity of the incision wound, distribution of fibroblasts and density of collagen. The results were analyzed using the One Way ANOVA test with Duncan's further test.

Results: The results showed that there was a significant difference between treatment groups ($p<0.005$). The best fraction was shown by the ethyl acetate fraction with a healing percentage of 80.95% with denser collagen among the other treatment groups including the positive control (Povidone iodine (Betadin 10%) ointment) with a healing percentage of 80.90%, followed by the n-butanol fraction with curing percentage of 71.20%, n-hexane fraction with curing percentage of 63.80% and negative control 38.85%.

Conclusion: The red ginger rhizome fraction has the effect of healing cuts, with the best fraction being ethyl acetate.

Keywords: Cuts, Red Ginger (*Zingiber officinale* var. *rubrum*), n-Hexane, n-Butanol, Ethyl Acetate, Rats, Histology

ABSTRAK

Latar Belakang: Rimpang jahe merah (*Zingiber officinale* var. *rubrum*) memiliki efek farmakologis seperti antiinflamasi, antioksidan dan antimikroba. Selain itu rimpang jahe merah juga memiliki senyawa metabolit sekunder seperti alkaloid, flavonoid, fenolik, saponin dan triterpenoid. Penelitian ini bertujuan untuk mengetahui efektivitas pemberian fraksi rimpang jahe merah dengan dosis 10% terhadap luka sayat pada tikus putih jantan.

Metode: Penelitian ini menggunakan metode Rancangan Acak Lengkap (RAL) dengan pendekatan *Post Only Control Group Design* 5 perlakuan yaitu kontrol positif (*Povidone iodine* (Betadin 10%) salep), kontrol negatif (Vaseline flavum), perlakuan 1 (fraksi n-heksan), perlakuan 2 (fraksi etil asetat) dsn perlsakuan 3 (fraksi n-butanol). Parameter yang diamati yaitu intensitas luka sayat, distribusi fibroblast dan kepadatan kolagen. Hasil dianalisis menggunakan uji *One Way* ANOVA dengan uji lanjut Duncan.

Hasil: Hasil penelitian menunjukan adanya perbedaan yang nyata antar kelompok perlakuan ($p<0,005$). Fraksi terbaik ditunjukan oleh fraksi etil asetat dengan persentase kesembuhan 80,95% dengan kolagen yang lebih padat diantara kelompok perlakuan lainnya termasuk kontrol positif (*Povidone iodine* (Betadin 10%) salep) dengan persentase kesembuhan 80,90%, diikuti fraksi n-butanol dengan persentase kesembuhan 71,20%, fraksi n-heksan dengan persentase kesembuhan 63,80% dan kontrol negatif 38,85%.

Kesimpulan: Fraksi rimpang jahe merah memiliki efek penyembuhan luka sayat, dengan fraksi terbaik yaitu etil asetat.

Kata Kunci: Luka Sayat, Jahe Merah (*Zingiber officinale* var. *rubrum*), n-Heksan, n-Butanol, Etil Asetat, Tikus, Histologi