

ABSTRAK

UJI AKTIVITAS ANALGESIK TUNGGAL DAN KOMBINASI EKSTRAK ETANOL DAUN MANGROVE (*Avicennia alba* Blume.) DAN DAUN SIRSAK (*Annona muricata* L.) TERHADAP MENCIT (*Mus musculus* Linneaus, 1758) DENGAN METODE WRITHING TEST

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Obat analgesik digunakan untuk menghilangkan dan mengurangi rasa nyeri akibat kerusakan jaringan, inflamasi, atau disfungsi sistem saraf. Upaya yang dilakukan untuk mengurangi rasa nyeri salah satunya dengan menggunakan obat golongan *Non Steroid Anti Inflammatory Drug* (NSAID). Penggunaan obat NSAID jangka panjang memiliki efek samping seperti gangguan saluran pencernaan, kerusakan ginjal, hati dan alergi kulit, sehingga diperlukan alternatif obat herbal yang memiliki efek samping yang lebih rendah, salah satunya yaitu dengan menggunakan daun mangrove (*Avicennia alba* Blume.) dan daun sirsak (*Annona muricata* L.). Senyawa metabolit sekunder flavonoid dan tannin ekstrak daun mangrove (*Avicennia alba* Blume.) dan daun sirsak (*Annona muricata* L.) dapat berfungsi sebagai analgesik dengan menghambat mediator inflamasi sehingga pelepasan asam arakidonat dan memblokir kerja enzim siklooksigenase. Penelitian ini bertujuan mengetahui aktivitas analgesik ekstrak etanol daun mangrove dan daun sirsak terhadap mencit jantan dengan metode *writhing test*. Penelitian ini merupakan penelitian eksperimen *posttest only control design* menggunakan metode *writhing test*. Sampel penelitian terdiri dari 25 mencit terbagi dalam lima kelompok yakni kelompok kontrol negatif Na-CMC 0,5 %, kelompok kontrol positif asam mefenamat, kelompok dosis tunggal ekstrak etanol daun mangrove 250mg/kgBB, kelompok dosis tunggal ekstrak daun sirsak 250mg/kgBB, dan kelompok kombinasi ekstrak etanol daun mangrove dan sirsak 1:1 dilanjutkan seluruh perlakuan diinduksi asam asetat 1%. Data dianalisis secara statistik dengan uji ANOVA dengan uji lanjut *Least Significance Difference* (LSD) pada taraf signifikansi 5%. Hasil uji LSD yang diperoleh menunjukkan bahwa ada perbedaan yang signifikan antara pemberian ekstrak etanol daun mangrove (P1), ekstrak etanol daun sirsak (P2), dan kombinasi ekstrak etanol daun mangrove dan sirsak (P3) terhadap kontrol negatif ($p = 0,000$). Namun P3 menunjukkan tidak terdapat perbedaan signifikan dengan kontrol positif (asam mefenamat), sehingga dapat dikatakan bahwa daya analgesik P3 setara dengan kontrol positif. Kesimpulan pada penelitian ini yaitu ekstrak etanol daun mangrove memiliki aktivitas analgesik dengan persentase proteksi geliat sebesar 30,5% dan persentase efektivitas analgesik sebesar 64,2%, ekstrak etanol daun sirsak memiliki aktivitas analgesik dengan persentase proteksi geliat sebesar 23,99% dan persentase efektivitas analgesik sebesar 41,21%, serta kombinasi ekstrak etanol daun mangrove dan daun sirsak memiliki aktivitas analgesik dengan persentase proteksi geliat sebesar 40,75% dan persentase efektivitas analgesik sebesar 87,93% .

Kata kunci : Analgesik, *Annona muricata* L, *Avicennia alba*

ABSTRACT

SINGLE AND COMBINATION ANALGESIC ACTIVITY TEST OF ETHANOL EXTRACT OF MANGROVE LEAVES (*Avicennia alba* Blume.) AND SOURSOP LEAVES (*Annona muricata* Linn.) IN MALE MICE (*Mus musculus* Linnaeus, 1758) USING THE WRITHING TEST METHOD

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Analgesic drugs are used to eliminate and reduce pain due to tissue damage, inflammation, or nervous system dysfunction. Efforts are made to relieve pain by using non-steroidal anti-inflammatory drugs (NSAIDs). Long-term use of NSAIDs has side effects such as digestive tract disorders, kidney and liver damage, and skin allergies, so alternative herbal medicines are needed that have lower side effects, one of which is using mangrove leaves (*Avicennia alba* Blume.) and soursop leaves (*Annona muricata* L.). Secondary metabolite compounds of flavonoids and tannins, a combination of mangrove (*Avicennia alba*) and soursop leaf (*Annona muricata* L.) leaf extracts, function as an analgesic by inhibiting inflammatory mediators so that the release of arachidonic acid and the action of the cyclooxygenase enzyme are blocked. This research aims to determine the analgesic activity of mangrove leaf and soursop leaf extracts on male mice using the writhing test method. This research is a posttest-only control design experimental research using the writing test method. The research sample consisted of 25 mice divided into five groups, namely the negative control group Na-CMC 0.5% (K-), the positive control group mefenamic acid (K+), the third group a single dose of ethanol extract of mangrove leaves 250mg/kgBB, the fourth group a single dose of single soursop leaf extract 250mg/kgBB, the fifth group was a combination of ethanol extract of mangrove and soursop leaves 1:1 followed by all treatments induced by 1% acetic acid. The data were analyzed statistically using the ANOVA test with the Least Significance Difference (LSD) test at a significance level of 5%. The LSD test results obtained showed that there was a significant difference between administering mangrove leaf ethanol extract (P1), soursop leaf ethanol extract (P2), and a combination of mangrove and soursop leaf ethanol extract (P3) to the negative control ($p = 0.000$). However, P3 shows that there is no significant difference with the positive control (mefenamic acid), so it can be said that the analgesic power of P3 is equivalent to the positive control. This research concludes that the ethanol extract of mangrove leaves has analgesic activity with a writhing protection percentage of 30.5% and an analgesic effectiveness percentage of 64.2%, the soursop leaf ethanol extract has analgesic activity with a writhing protection percentage of 23.99%, and an effectiveness percentage analgesia of 41.21%, and the combination of ethanol extract of mangrove leaves and soursop leaves has analgesic activity with a stretching protection percentage of 40.75% and an analgesic effectiveness percentage of 87.93%.

Key words: Analgesic, *Annona muricata* L, *Avicennia alba* Blume.