

Antibacterial Extract of Bandotan (*Ageratum Conyzoides* L.) Sytematis Review

Title	Antibacterial Extract of Bandotan (<i>Ageratum Conyzoides</i> L.) Sytematis Review
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Abstract	<p>Antibacterial extract leaf Bandotan (<i>Ageratum conyzoides</i> L.) shows that effectiveness antimicrobial plant This is results synergy compound bioactives , such as flavonoids, tannins, saponins, and terpenoids, which are successful extracted optimally use solvent organic . Use solvent methanol and ethanol proven increase acquisition compounds said , which then contribute to mechanism Work antimicrobial through effect antioxidants and damage membrane cell bacteria . Innovative approaches such as green nanoparticle synthesis have also been shown to have the potential to improve the stability of the extract, thus supporting the development of alternative therapeutic applications to overcome antibiotic resistance. Objective: this study was to evaluate the antibacterial activity of methanol extract of Bandotan leaves against <i>S. aureus</i> and identify bioactive compounds, as well as highlight the integration of traditional knowledge with research innovations in the treatment of skin infections. This systematic review was conducted using the PRISMA method. The literature search process was carried out through Google Scholar, PubMed, and Science Direct databases, focusing on studies published between 2020 and 2024. Articles that met the inclusion criteria were observational studies that tested the antibacterial activity of Bandotan leaf extract. Of the 1086 articles initially identified, based on the PICO method, the systematic review's study selection. Initially, 1086 records were identified from databases like Google Scholar and PubMed. After removing 61 duplicates, 1025 records underwent screening. Exclusions included 249 systematic reviews, 270 irrelevant Bandotan studies, 112 with inadequate methods, 200 lacking exclude full text unavailable, and 189 outside the research scope. Finally 5 studies include criteria . Results: the study showed that Bandotan leaf extract, both extracted with ethanol and methanol, effectively inhibited the growth of various pathogenic bacteria, such as <i>Staphylococcus aureus</i>, <i>Streptococcus pyogenes</i>, Methicillin-Resistant <i>Staphylococcus aureus</i> (MRSA), and <i>Propionibacterium acnes</i>. In vitro tests conducted for 24 hours using the agar diffusion method revealed a dose-response correlation, where increasing extract concentrations resulted in wider inhibition zones. In addition, the integration of the extract into product formulations, such as anti-acne sheet masks, suggests that this extract also has potential for skin care applications. Conclusion: these findings support further development of the use of Bandotan leaf extract as an alternative source of natural active ingredients in infection therapy and as a basis for the development of antibacterial cosmetic products.</p>
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