

Aktivitas Antibakteri dan Kandungan Flavonoid Ekstrak Daun *Piper* spp.
terhadap *Streptococcus mutans* SMC Penyebab Karies Gigi Manusia

Nindy Permatasari

INTISARI

Piper merupakan salah satu tanaman yang tumbuh subur di Indonesia, dan telah banyak dimanfaatkan sebagai obat tradisional, salah satunya untuk mencegah karies gigi. Tujuan dari penelitian ini adalah untuk mengetahui daya antibakteri ekstrak etil asetat daun *Piper* spp. terhadap *Streptococcus mutans*. Sampel daun *Piper* spp. diperoleh dari Kebun Raya Bogor. Ekstraksi dilakukan secara berurutan pada daun yang telah dikeringkan dengan menggunakan n-heksan, metanol, dan dilanjutkan dengan etil asetat. Pengukuran aktivitas antibakteri *S. mutans* dilakukan dengan metode *paper disc*. Konsentrasi ekstrak etil asetat yang digunakan sebagai bahan uji antibakteri terhadap *S. mutans* sebesar 6,25%, 12,5% dan 25%. Pengukuran kandungan flavonoid total ekstrak dilakukan dengan metode *Aluminium Chloride* ($AlCl_3$) *Colorimetri*. Uji bioautografi menggunakan plat Kromatografi Lapis Tipis. Secara umum, sembilan ekstrak daun menunjukkan aktivitas antibakteri. *Piper acutilimum* konsentrasi 25% menunjukkan aktivitas antibakteri tertinggi. Kandungan flavonoid total tertinggi terdapat pada *Piper phorpiophyllum* dengan nilai 3,94 mg QE/g ekstrak. Hasil uji KLT-Bioautografi menunjukkan bahwa senyawa alkaloid dan fenolik berkontribusi dalam aktivitas antibakteri terhadap *S. mutans*.

Kata kunci: antibakteri, karies gigi, *Piper* spp., ekstrak etil asetat, *Streptococcus mutans*.

Antibacterial Activity and Contents of Flavonoids Extracted from *Piper* spp.
Leaves Against *Streptococcus mutans* SMC Causing
Human Dental Caries

Nindy Permatasari

ABSTRACT

Piper is one of plant thrives in Indonesia and has widely used as a traditional medicine, such as to prevent dental caries. The aim of this study was to evaluate the antibacterial activities of ethyl acetate extract of *Piper* spp. Samples of *Piper* spp. leaves were collected from Bogor Botanical Gardens. Sequential extractions using soxhlet on dry leaves were done with n-hexane, methanol, and followed by ethyl acetate. Standard disc diffusion test was performed to determine the antibacterial activity against *Streptococcus mutans*. The ethyl acetic leaves extract concentrations of 6.25%, 12.5% and 25% were treated to *S. mutans* were grown on agar media. Aluminum Chloride (AlCl₃) colorimetric method was used to measure total flavonoids contents of extracts. Bioautography was performed on thin layer chromatography plates. In general, the antibacterial activities were detected from all nine leaves extracts. *Piper acutilimum* extract showed the highest activity on concentration 25%. The highest total flavonoids content observed on *Piper phorpirophyllum* with a value of 3.94 mg/g extract. Result of TLC-Bioautography profiles showed that phenolic and alkaloids compounds contributed on the antibacterial activities against *S. mutans*.

Keywords: antibacterial, dental caries, *Piper*, ethyl acetate extract, *Streptococcus mutans*.