

Aktivitas Antibiofilm Ekstrak Etil Asetat Daun Kersen (*Muntingia calabura L.*) terhadap *Staphylococcus aureus*

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INTISARI

Latar belakang: *Muntingia calabura L.* atau yang umum disebut dengan nama Kersen merupakan tanaman yang umum ditemukan di Indonesia. Kandungan senyawa-senyawa yang ditemukan pada ekstrak daun *M. calabura* memiliki daya hambat terhadap pertumbuhan bakteri jenis *Staphylococcus aureus*. Termasuk saat bakteri berada dalam matriks biofilm

Tujuan: Penelitian ini bertujuan untuk menguji aktivitas ekstrak etil asetat daun *Muntingia calabura L.* dalam mendegradasikan biofilm *Staphylococcus aureus*.

Metode: Pengujian dilakukan secara *in vitro*. Pengujian diawali dengan penentuan KHM dan KBM melalui metode mikrodilusi. Uji aktivitas antibiofilm dilakukan melalui metode mikrotiter *assay*. Biofilm *S. aureus* ditumbuhkan melalui media TSB cair. Nilai absorbansi yang didapatkan diukur melalui microplate reader panjang gelombang 570 nm, nilai absorbansi digunakan untuk mengukur biomassa biofilm. Berdasarkan absorbansi yang dihasilkan kemudian dilakukan perhitungan persentase degradasi biofilm.

Hasil: Hasil dari uji kadar hambat minimum menunjukkan ekstrak etil asetat daun *M. calabura* pada kadar 20 mg/mL mampu mendegradasi biofilm *S. aureus*. Hasil uji degradasi biofilm menunjukkan ekstrak etil asetat daun *M. calabura* pada kadar 10 mg/mL memiliki nilai rata-rata degradasi biofilm 51%, kadar 5 mg/mL menghasilkan degradasi biofilm sebesar 18%, dan kadar 2,5 mg/mL tidak menunjukkan kemampuan degradasi (persentase degradasi -15%)

Kesimpulan: Ekstrak etil asetat daun *M. calabura* mampu mendegradasikan biofilm bakteri *S. aureus*.

Kata kunci: *Muntingia calabura L.*, *Staphylococcus aureus*, antibiofilm, degradasi, *microtiter assay*.

Antibiofilm Activity of Ethyl Acetate Extract of Kersen (*Muntingia calabura* L.) Leaf against *Staphylococcus aureus*

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Pharmacy ABSTRACT

Background: *Muntingia calabura* L. or Kersen is a plant commonly found in Indonesia. The contents of the compounds found in the leaf extracts of *M. calabura* have an inhibitory effect on the growth of *S. aureus*. Including when the bacteria are in the biofilm matrix.

Objective: This study aims to examine the activity of the ethyl acetate extract of the leaves of *Muntingia calabura* L. in degrading *Staphylococcus aureus* biofilms.

Methods: Tests were carried out in vitro. The test begins with the determination of MIC and MBC through the microdilution method. Antibiofilm activity test was carried out using the microtiter assay method. *S. aureus* biofilms were grown through liquid TSB media. The absorbance value was measured through microplate reader at a wavelength of 570 nm, the absorbance value of crystal violet used to measure biofilm biomass. Based on the resulting absorbance, the percentage of biofilm degradation was calculated.

Results: The results of the minimum inhibition test showed that the ethyl acetate extract of *M. calabura* leaves at a level of 20 mg/mL was capable to degrade *S. aureus* biofilm. The results of the test showed that the ethyl acetate extract of *M. calabura* leaves at a concentration of 10 mg/mL had an average biofilm degradation value of 51%, at concentration of 5 mg/mL resulted in a degradation of 18%, and at concentration of 2.5 mg/mL did not provide biofilm degradation abilities (degradation percentage was -15%)

Conclusion: Ethyl acetate extracts of *M. calabura* leaf was able to degrade *S. aureus* bacterial biofilm.

Keywords: *Muntingia calabura* L., *Staphylococcus aureus*, antibiofilm, degradation, microtiter plate biofilm assay