

ABSTRAK

Pengaruh Fraksi Air Kombinasi Chitosan Dan Ekstrak Daun Kakao (*Theobroma Cacao L.*) Sebagai Antibiofilm Terhadap Bakteri *Salmonella typhi*

Joshua Harris Kurnia Dewa¹, Luluk Aniqoh Meliana Putri²

^{1 2} Universitas STRADA Indonesia

E-mail: dewajoshua@gmail.com

Latar belakang : Demam tifoid adalah penyakit umum di negara-negara dengan higiene sanitasi buruk, disebabkan oleh *Salmonella typhi*. Chitosan dan ekstrak daun kakao berpotensi sebagai antibiofilm untuk mengendalikan infeksi *S. typhi*.

Tujuan : Untuk mengetahui fraksi air kombinasi ekstrak daun kakao (*Theobroma cacao L.*) dan chitosan dari *Litopenaeus vannamei* dalam menghambat pembentukan biofilm dan medegradasi biofilm.

Metode : Penelitian ini dilakukan di Laboratorium Farmasetik Fakultas FAKAR, Universitas STRADA Indonesia Kediri selama 3 bulan dengan sampel kombinasi fraksi chitosan dan ekstrak daun kakao dengan perbandingan 80 ppm : 100 ppm, 120 ppm : 100 ppm, dan 160 ppm : 100 ppm

Hasil : Uji penghambatan dan degradasi biofilm *Salmonella typhi* menggunakan fraksi air kombinasi daun kakao dan chitosan menunjukkan bahwa konsentrasi uji memiliki pengaruh signifikan terhadap penghambatan pertumbuhan dan degradasi biofilm. Korelasi negatif ditemukan antara konsentrasi uji dan OD penghambatan/degradasi biofilm. **Kesimpulan :** Fraksi air kombinasi ekstrak daun kakao dan chitosan efektif menghambat pertumbuhan dan mendegradasi biofilm *Salmonella typhi*. Konsentrasi 160 ppm memiliki kemampuan menghambat pertumbuhan biofilm sama dengan kontrol positif, sedangkan kemampuan mendegradasi biofilm tidak lebih kuat dari kontrol positif.

Kata Kunci: Demam tifoid, *Salmonella typhi*, Chitosan, Daun kakao, Antibiofilm

ABSTRACT

Effect of Water Fraction Combination of Chitosan and Cocoa Leaf Extract (Theobroma Cacao L.) as Antibiofilm Against Salmonella typhi Bacteria

Joshua Harris Kurnia Dewa¹, Luluk Aniqoh Meliana Putri²

^{1 2} Universitas STRADA Indonesia

E-mail: dewajoshua@gmail.com

Background: Typhoid fever is a common disease in countries with poor sanitation and hygiene, caused by *Salmonella typhi*. Chitosan and cocoa leaf extract have potential as antibiofilm agents to control *S. typhi* infections. **Objective:** To determine the effect of the water fraction combination of cocoa leaf extract (*Theobroma cacao* L.) and chitosan from *Litopenaeus vannamei* on inhibiting biofilm formation and degrading biofilm. **Method:** This research was conducted at the Pharmaceutical Laboratory, Faculty of Pharmacy, Universitas STRADA Indonesia, Kediri, for 3 months, with a combination of chitosan and cocoa leaf extract fractions at ratios of 80 ppm: 100 ppm, 120 ppm: 100 ppm, and 160 ppm: 100 ppm. **Results:** The biofilm inhibition and degradation test using the water fraction combination of cocoa leaf extract and chitosan showed that the test concentration had a significant effect on biofilm growth inhibition and degradation. A negative correlation was found between the test concentration and OD inhibition/degradation of biofilm. **Conclusion:** The water fraction combination of cocoa leaf extract and chitosan effectively inhibited biofilm growth and degraded biofilm of *Salmonella typhi*. The 160 ppm concentration had the same biofilm growth inhibition ability as the positive control, while its biofilm degradation ability was not stronger than the positive control.

Keyword: Typhoid fever, *Salmonella typhi*, Chitosan, Cocoa leaf, Antibiofilm