



ELECTRONIC THESIS AND DISSERTATION UNSYIAH

TITLE

ISOLASI DAN UJI AKTIVITAS ANTIMIKROBA BAKTERI ENDOFIT ASAL DAUN PEPAYA (CARICA PAPAYA L.)

ABSTRACT

ABSTRAK

Bakteri endofit merupakan kelompok bakteri yang hidup pada jaringan tanaman dan mampu memproduksi metabolit sekunder yang sama dengan tanaman inangnya, salah satunya adalah antimikroba. Penelitian ini bertujuan untuk mengisolasi dan menguji aktivitas antimikroba bakteri endofit asal daun pepaya (*Carica papaya* L.). Bakteri endofit diisolasi dari daun pepaya dan dimurnikan pada media Nutrient Agar. Karakterisasi isolat bakteri endofit dilakukan secara makroskopis dan mikroskopis. Uji screening potensi antimikroba dilakukan terhadap mikroba patogen *Streptococcus mutans*, *Escherichia coli*, dan *Candida albicans*. Uji aktivitas antimikroba bakteri endofit dilakukan dengan metode agar plug untuk mengukur pembentukan zona hambat. Sebanyak 8 isolat bakteri endofit berhasil diperoleh dan semua isolat memiliki karakteristik yang berbeda. Hasil penelitian ini menunjukkan bahwa hanya isolat EDP3 dan EDP6 yang memiliki potensi antimikroba. Kedua isolat mampu menghambat pertumbuhan bakteri patogen *Streptococcus mutans*. Diameter zona hambat yang terbentuk pada isolat EDP3 dan EDP6 masing-masing sebesar 11,7 mm dan 11,5 mm.

Kata kunci: Bakteri endofit, *Carica papaya* L., antimikroba

ABSTRACT

Endophytic bacteria are a group of bacteria living within the plant tissues and produce secondary metabolites similar to the host plants, such as antimicrobials. The purpose of this study was to isolate and determine the antimicrobial activity of endophytic bacteria isolated from papaya (*Carica papaya* L.) leaves. Endophytic bacteria were isolated from papaya leaves and purified on Nutrient Agar. Macroscopic and microscopic characterization of endophytic bacteria were done. The antimicrobial potential screening test was performed against pathogenic microbes *Streptococcus mutans*, *Escherichia coli*, and *Candida albicans*. The antimicrobial activity test was done by using agar plug method to measure the formation of inhibitory zone. A total of 8 endophytic bacteria isolates were successfully obtained and all isolates showed different characteristics. The result of this study showed that only EDP3 and EDP6 isolates had the potential as antimicrobials. Both isolates were effective against *Streptococcus mutans*. The diameter of inhibitory zone formed in EDP3 and EDP6 isolates were 11.7 mm and 11.5 mm.

Keywords: Endophytic bacteria, *Carica papaya* L., Antimicrobial