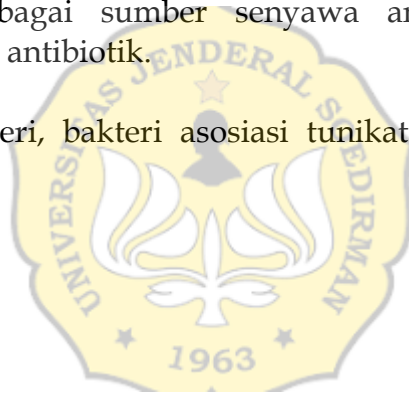


ABSTRAK

Resistensi antibiotik merupakan masalah kesehatan global yang mendorong eksplorasi alternatif terapi dari sumber daya hayati laut. Penelitian ini bertujuan untuk menganalisis aktivitas antibakteri yang dihasilkan oleh bakteri asosiasi tunikata *Didemnum* sp. terhadap bakteri patogen yang resisten terhadap antibiotik dan mengidentifikasi bakteri asosiasi tunikata yang memiliki potensi antibakteri cenderung stabil dan aktif pada seluruh patogen tunikata. Sebanyak 10 isolat bakteri diisolasi dari jaringan tunikata, diekstraksi menggunakan metode maserasi dengan etil asetat, lalu diuji aktivitasnya terhadap empat bakteri patogen resisten: *Methicillin-resistant Staphylococcus aureus* (MRSA), *Extended-Spectrum β -Lactamase* (ESBL), *Bacillus subtilis*, dan *Salmonella typhi* menggunakan difusi kertas cakram. Hasil menunjukkan bahwa sebagian besar isolat mampu menunjukkan potensi antibakteri dengan kategori zona hambat lemah. Salah satu isolat potensial (RI.NA.115) yang menunjukkan potensi antibakteri cenderung stabil dan aktif pada seluruh patogen diidentifikasi secara molekuler menggunakan gen 16S rRNA dengan nilai *similarity* mencapai 100% pada *Bacillus cereus*. Penelitian ini menunjukkan bahwa bakteri asosiasi tunikata memiliki potensi sebagai sumber senyawa antibakteri alternatif dalam menghadapi resistensi antibiotik.

Kata kunci: Antibakteri, bakteri asosiasi tunikata, *Didemnum* sp., resistensi antibiotik, 16S rRNA



ABSTRACT

*Antibiotic resistance is a global health issue that drives the exploration of alternative therapies from marine biological resources. This study aimed to analyze the antibacterial activity produced by tunicata-associated of *Didemnum* sp. bacteria against antibiotic-resistant pathogenic bacteria and to identify tunicata-associated bacteria with consistently stable and active on all tunicata pathogens. A total of 10 bacterial isolates were obtained from tunicata tissue, extracted using the maceration method with ethyl acetate, and tested for their activity against four resistant pathogens: Methicillin-resistant *Staphylococcus aureus* (MRSA), Extended-Spectrum β -Lactamase (ESBL), *Bacillus subtilis*, and *Salmonella typhi* using the disc diffusion. The results showed that most of the isolates were able to show antibacterial potential with a small inhibition zone category. One potential isolate (RI.NA.115) which exhibited consistent antibacterial activity against all tested pathogens, was molecularly identified using the 16S rRNA gene and showed 100% similarity to *Bacillus cereus*. This study showed that tunicata-associated bacteria had the potential to serve as alternative source of antibacterial compounds in addressing antibiotic resistance.*

Keywords: Antibacterial, tunicates-associated bacteria, *Didemnum* sp., antibiotic resistance, 16S rRNA

