

Intisari

Penelitian ini bertujuan untuk mendapatkan Aktinobakteria laut berdasarkan bioaktivitas terhadap bakteri patogen ikan dan keberadaan gen *Non Ribosomal Peptide Synthase* (NRPS). Aktinobakteria laut diisolasi dari spons yang dikoleksi dari Tulamben, Bali. Deteksi gen *nrps* dilakukan dengan PCR menggunakan *degenerate primer*. Bioaktivitas isolat terhadap bakteri patogen ikan diuji menggunakan 96 well-plate format. Analisis sekuen gen 16S rRNA dan BLAST digunakan untuk identifikasi aktinobakteria. Analisis berdasarkan sekuen gen digunakan sebagai landasan untuk memprediksi senyawa. Hasil menunjukkan bahwa tujuh isolat aktinobakteria memiliki gen *nrps* dan memproduksi senyawa non-ribosomal peptida. Berdasarkan uji antibakteri tujuh isolat mampu memproduksi senyawa aktif terhadap *Aeromonas hydrophilla* dan *Vibrio alginolyticus*. Analisis sekuen gen 16S rRNA menunjukkan bahwa isolat aktinobakteria terpilih memiliki kekerabatan dengan spesies *Corynebacterium* sp. (98%). Sementara hasil analisis sekuen gen *nrps* memiliki kekerabatan dengan sekuen gen *nrps* spesies *Bacillus licheniformis*.

Kata kunci : *Aeromonas hydrophilla*, Aktinobakteria laut, *non ribosomal peptide synthase*, *Vibrio alginolyticus*

Abstract

The aims of this studies were to select marine Actinobacteria based on Non Ribosomal Peptide Synthase gene and bioactivity against bacterial fish pathogen. Marine Actinobacteria were isolated from sponge collected in Tulamben, Bali. Detection of nrps was done by PCR with degenerate primer. Bioactivity against fish pathogen was examined by 96 well plate format. Confirmation of Actinobacteria was completed band on analysis sequence 16S rRNA and blast score. Sequence based analysis was used to predict compound. Result showed that seven isolate Actinobacteria were contained nrps gene and produced Non Ribosomal Peptide. Based on bioactivity assay, seven isolates produced bioactive compound against *Aeromonas hydrophila* and *Vibrio alginolyticus*. Sequence analysis of 16S rRNA gene showed that one of potential isolate was *Corynebacterium* sp. (98 %). While sequence analysis of nrps gene led to prediction of non ribosomal peptide from *Bacillus licheniformis*.

Keywords : *Aeromonas hydrophila*, marine Actinobacteria, non ribosomal peptide synthase, *Vibrio alginolyticus*