



ABSTRACT

The ocean boasts untapped novel producers of antibiotic substances in the form of unicellular and multicellular organisms. One of these new bioproducers of pharmacologically-significant substances that is currently studied for its potential against clinically-significant pathogens is the genus *Pseudoalteromonas*, a gammaproteobacterial group. This study is a preliminary report detailing the isolation of *Pseudoalteromonas* species from Philippine marine waters. A total of 4 *Pseudoalteromonas* isolates (PAM-001, PAM002, PAM-003, and PAM-006) from Anilao and Maricaban in Batangas were identified through 16s *rRNA* gene amplification and sequencing. Phylogenetic analysis using Maximum Likelihood Probability was done and the identities of the isolates were similar to *Pseudoalteromonas piscicida* strain NBRC 103038 (PAM-001-99% similar; PAM-002-98% similar), *Pseudoalteromonas flavipulchra* strain NCIMB203 (PAM-003-100% similar), and *Pseudoalteromonas phenolica* strain O-BC30T (PAM-006-98% similar). These isolates were identified from coastal and surface seawater samples in Anilao and coastal seawater samples from Sepoc, Maricaban, Batangas. Identified Pseudoalteromonads and non-Pseudoalteromonads were allowed to produce bioactives during the course of 12-day growth in marine broth. Non-polar products were isolated from each isolate's separate base medium through membrane filtration, organic solvent extraction using ethyl acetate, and rotary evaporation. These crude solutions of bioactives were then injected in sterile discs that were used for disc diffusion assay. Results indicate that only PAM-003 from the dry season collection demonstrated appreciable diameters of zones of inhibition against MRSA. Lastly, to further describe the antimicrobial activity of the isolates, minimum inhibitory concentration of the bacterial extracts against the bacterial and fungal pathogens were determined through broth microdilution technique. Results indicate that extracts of isolates PAM-001 and PAM-003 demonstrated MICs of 1000 µg/ml against MRSA and *Salmonella typhi*. None of the pathogens are observed to be susceptible to the crude extracts as per CLSI standards. Further investigation and exploitation of the bioactivity of Philippine Pseudoalteromonad isolates from highly diverse regions of the country is a considerable initiative for increasing the number of new molecular entities that can be useful in clinical practice during the treatment of infectious microbial diseases.

Keywords: *Pseudoalteromonas*, Seawater, Antimicrobial, Phylogeny, Batangas