

ISOLATION AND IDENTIFICATION OF MARINE BACTERIA WITH ANTIMICROBIAL ACTIVITY FROM WEST COAST OF SRI LANKA

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Diversity of marine habitat is the largest and yet to be explored. They provide a potential source of various biomolecular applications. Screening of antimicrobial active bacteria isolated from western coast of Sri Lanka by culturing method resulted in the identification of five bacterial species. All of them were isolated by serial dilution technique on Seawater Nutrient Agar (SWNA). Three of them were producing distinct color pigments (red, violet and yellow). Isolated pigmented bacterial species also demonstrated their antimicrobial activity against *E. coli* and *S. aureus* in agar gel diffusion method. One of isolated bacterial species exhibited quorum sensing ability on SWNA plates.

The effect of salinity and temperature on the growth of these bacterial types was also studied. In this experiment, visual scoring was done to categorize the growth. It was found that the cells could tolerate up to 2% of NaCl. Optimum growth of the bacteria was observed at 27°C. Isolated marine bacterial growth ceased at 4°C. Three of the isolated bacterial species were also characterized for their susceptibility against three different antibiotics (Ampicillin, Chloramphenicol, and Tetracycline). It was found that most of the species were sensitive to all three antibiotics tested except yellow-pigmented bacterial species, which showed resistance to tetracycline at 20µg.

Molecular identification based on DNA analysis showed that red color bacterial species had similarity with *Pseudoalteromonas rubra* that contains red color pigment known as Prodiginines, and violet color bacterial type had similarity with *Pseudoalteromonas luteoviolacea* that produces violet color pigment known as Violacein.