RAMA DEVI WOMEN'S UNIVERSITY

Vidya Vihar, Bhubaneswar-751022, Odisha

Website: https://rdwu.ac.in **E-mail: registrar@rdwu.ac.in**

PROJECT TITLE: Screening of bioactive compounds as antimicrobial agents extracted from lysate of the Indian horseshoe crab found in the coastal part of Odisha

INVESTIGATOR: Dr. Alok Prasad Das, Dept. of Life Science, Rama Devi Women's University, Bhubaneswar.

PROJECT SUMMARY:

The recent upsurge in increasing number of bacteria being resistant to conventional antibiotics has become a serious medical problem. To overcome this resistance, the development of antibiotics with novel mechanisms of action is prerequisite. Antimicrobial peptides are widely expressed in various organisms and have been linked to innate and acquired immunities invertebrates. Often these compounds are constitutively expressed and rapidly induced at different cellular levels to interact directly with infectious agents and/or modulate immunoreactions involved in defence against pathogenic microorganisms. In invertebrates, antimicrobial peptides represent the major humoral defence system against infection, showing a diverse spectrum of action mechanisms, most of them related to plasma membrane disturbance and lethal alteration of microbial integrity. Marine invertebrates are markedly widespread, extremely diverse, and constantly under an enormous microbial challenge from the ocean environment. The emergence and spread of antimicrobial resistance in common human pathogenic bacteria has fueled the need for new antimicrobial compounds. Marine invertebrates represent a vast resource for discovering novel pharmaceutical compounds. Although some novel compounds have been identified in organisms collected in the high latitude seas, the primary focus of marine bioprospecting has been the tropics. The Bay of Bengal, Arabian Sea and Indian Ocean are ecologically unique environments, in some cases being extreme and animals living in these environments have adapted themselves to these unusual conditions. This prospect is the main challenge for the present proposal to explore the potential for antimicrobial compounds isolated from Horseshoe crabs from the Bay of Bengal.