

Screening for Antibacterial Activity of Fungi from Indian Marine Environments: A Possible Alternative for New Antibiotics for the Treatment of Skin Microbial Infections

Authors : Shivankar Agrawal, Sunil Kumar Deshmukh, Colin Barrow, Alok Adholeya

Abstract : Millions of people worldwide are affected by infectious diseases caused by bacteria and fungi. Skin and skin structure infections (SSSI) represent a significant category of infectious disease. Unexpectedly, many pathogens have developed resistance towards current antibiotics and over the time this problem has become more and more serious. All these new problems necessitate the continuous search for novel and alternative antibiotics and antifungals. The aim of our research is the screening of extracts of marine fungi for their antibacterial activity against bacteria causing skin and wound infection in humans. A total of 40 marine samples were collected from west coast and Andaman Island of India and 35 morphologically different marine fungi were isolated using natural sea water medium. Among 35 marine fungi, eight isolates exhibited significant antimicrobial activity against human pathogens. In the course of systematic screening program for bioactive marine fungi, strain 'D5' was found to be most potent strain with MIC value of 1 mg/mL, which was morphologically identified as *Simplicillium lamellicola*. The effects of the most active crude extracts against their susceptible test microorganisms were also investigated by SEM analysis. Purification and characterization of crude extracts for identification of active lead molecule is under process. The results of diversity and antimicrobial activity have increased the scope of finding industrially important marine fungi from Indian marine environments and these organisms could be vital sources for the discovery of pharmaceutically useful molecules.

Keywords : antimicrobial activity, antibiotic, marine fungi, skin infections

Conference Title : ICEP 2017 : International Conference on Ethnopharmacology and Pharmacology

Conference Location : Singapore, Singapore

Conference Dates : January 08-09, 2017