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S-IMBPEH- Studies on the isolation, molecular identification, biochemical and physiological optimization of extremophilic halobacteria for the mass scale extraction of antibacterial carotenoids

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Extreme environments are found in many parts of the world and all these environments are colonized by microorganisms adapted to these environments. Microorganisms that assigned to grow at high salt concentrations are referred as halophilies. These halobacteria have been exploited for various fields, production of traditional fermented foods and enzymes. Isolation, identification and molecular speciation of halobacteria in the salt pan of cape comarin coast and the possible utility for pharmaceutical and industrial applications are not attempted so far and hence this study has been undertaken. The present study made an attempt to find out the species diversity of halobacteria in 2 selected salt pans in Kanyakumari district. Five morphologically different halobacteria were identified. The morphologically different halobacterial isolates were subjected for the species level identification by following the method of 16s rRNA sequencing. The sequences were deposited in the NCBI with the unique accession number [(HQ 438313 (KP1), HQ 438314 (KP2), HQ 438315 (KT1), HQ 438316 (KT2), HQ 602880 (KT3)].All the strains were subjected for biomass and carotenoid production in different nutrient sources such as mineral sources, nitrogen sources, pH, salinity as a part of optimization of media. The present study also made an attempt to find out the antibacterial potential of carotenoids extracted from the three pigmented *Halomonas sps*. And also all the five *Halomonas sps*. were analysed for screening of extracellular enzymes like amylase, gelatinase, lipase, protease, cellulase and xylanase. It is concluded from the present study that, the *Halomonas sps* has wider applications in the pharmaceutical and biochemical industries.

Biography

A. Hyder Ali recently submitted his Ph.D., at the age of 44 from Madras University, P.G. and Research department of Zoology, The New College, Chennai. He has published more than 3 papers in scientific journal and published one book. He has participated in many state and national level conferences and guided more than 25 postgraduate and M.Phil research scholars for their dissertation.