

Isolation and Identification of Halophilic Bacteria Producing Lipase from Miankaleh Wetland

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Abstract

The third important groups of enzymes which have widely used in biotechnology and organic chemistry are lipases. Many organisms have the ability to produce lipase, but bacterial lipase are more substantial because their enzymes have unique features such as high stability and Specific substrate. Since industrial processes are always under harsh conditions, enzymes screening which are stable, is important to work in these conditions. Halophilic bacteria are a good source of these enzymes, due to their activity on different ranges of salt concentration, temperature and pH. In this study, samples were collected from water, soil and sediments Miankaleh wetland in Mazandaran province. For isolation and purification, diluted samples were cultured on solid medium MH (Moderate Halophiles) and was incubated at 37 ° C. finally 10 strains were isolated as halophilic bacteria. Strains were studied based on lipase production. Based on morphological and biochemical similarity, 6 strains were selected for further study. Results showed that among six isolates, three strains have the ability to produce lipase. These bacteria have optimal grow in 5 to 2.5 %salt, temperature of 37-35 ° C and pH: 8-10. Analysis of 16S rDNA sequence was performed for 3 strains. This strain were placed on genus: *Halomonas* and *Halobacillus*. This research is the first study on international Miankaleh wetland bacteria as a rich ecosystem.

Keywords: Bacteria producing Lipase, Isolation, Halophiles, Miankaleh.