

## Isolation and identification of new polyhydroxyalkanoate (PHA) producing bacteria from an extreme environment

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**Background and Aims:** Since the major problem connected to the industrial production of Polyhydroxyalkanoates (PHAs) is their high production price, this study was performed to inspect the new potential extremophile bacterial species for industrial PHA production.

**Methods:** The bacterial samples were collected during a screening program from Maharlu Salt Lake as an extreme environment in the south of the Iran, Fars province. The PHA-producing bacteria were isolated. Then further studies on different morphological, cultural and physiological characteristics of isolates were performed. Among the isolated microorganisms in this study, 21 of 132 bacteria were selected as PHA-producer microorganisms to be studied for qualitative and quantitative analysis along with partial sequence of the 16S rRNA gene.

**Results and Conclusions:** This study introduces two bacteria; *Bacillus endophyticus* BCCS 011 and *Lysobacter* sp. BCCS 052 as new potential PHA producer that has not been reported previously. They could be an ideal option for cheaper PHAs production.

**Keywords:** Polyhydroxyalkanoate (PHA); *Lysobacter*; 16S rRNA; Extreme environment