

# Bioprospecting Studies of Halophilic Bacteria – *Streptomyces* sp. MA05 and *Halobacterium* sp. MA06 †

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† Presented at International e-Conference on Bioengineering for Health and Environment (ICBHE 2020)

Received: 5.07.2020; Revised: 10.07.2020; Accepted: 12.07.2020; Published: 15.07.2020

**Abstract:** Halophile organisms such as *Halobacterium salinarum* and halophilic *Actinomycetes* flourish under the hostile hypersaline condition and are well known for their ability to produce novel bioactive compounds for bioprospecting analysis such as antibacterial, antifungal, anticancer, and enzyme analysis. In this present study, the objective is to isolate two types of halophiles, namely *Halobacterium* sp. MA06 and *Streptomyces* sp. MA05 based on their 16SrRNA gene sequencing. The two potential halophiles were isolated from the salt pan of Chennai, India. In order to evaluate enzyme analysis and pigment production of both the organism, optimization of the growth state of both species was performed on complex medium with various additives and different concentrations of sodium chloride and magnesium sulfate. The result showed that *Halobacterium* sp. MA06 produced orange colored pigment after characterization using GC-MS analysis. For *Streptomyces* sp. MA06, it was found to produce the enzyme amylase, hence *Streptomyces* sp. MA06 was subjected to producing the enzyme amylase, and the produced amylase will be characterized. The antimicrobial and anticancer activity was then carried out on the extract of *Streptomyces* sp. MA05 and the pigment of *Halobacterium* sp. MA06. In conclusion, the pigment from *Halobacterium* sp. MA06 and the enzyme amylase from *Streptomyces* sp. MA05 could be a novel bio-sourced for bioprospecting of bioactive natural products.

**Keywords:** Halophiles; bioactive compounds; pigments; GC-MS.

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## Funding

This research received no external funding.

## Acknowledgments

This research has no acknowledgment.

## Conflicts of Interest

The authors declare no conflict of interest.