

Antioxidant Activity of Leaves of *Avicennia Marina* from Sandspit Backwater, Coast of Karachi.

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ABSTRACT

Mangroves are valued for their antioxidant activity since they contain phytochemicals that are vital for health. The primary mangrove species along the Karachi coast is *Avicennia marina*, which is found in shallow water in tropical and subtropical places like Sandspit.

Our current research focuses on the antioxidant activity of *A. Marina*, and we found that when tested for activity with ethanol, *A. Marina* displayed greater potential. DPPH is used to measure antioxidant activity for this purpose.

Our current data showed that the ascorbic acid ethanolic DPPH extract had a minimum percent of inhibition of 16.74% at 1 mg/ml and a maximum percent of inhibition of 37.88% at 5 mg/ml, whereas the ascorbic acid ethanolic DPPH extract had a minimum percent of inhibition of 30.40% at 1 mg/ml and a maximum percent of inhibition of 51.05% at 5 mg/ml.

This study tested the antioxidant activity to see how effective the extract of mangrove leaves would be against free radicals.

Keywords: Antioxidant activity, DPPH, free radicals

INTRODUCTION

Mangrove ecosystems' unique and dynamic habitat is due to their geochemical properties and nutrient content, which are frequently adapted by tidal floods. After coral reefs, mangroves are the second most productive marine ecosystem. Insecticides are among the several high bioactive substances found in mangroves, along with steroids, alkaloids, terpenoids, saponins, and tannins. Marine natural products are abundant in bioactive secondary metabolites that have the potential to be used in biomedical research. Secondary metabolites mostly function as pest defence systems and exciting environmental circumstances. Because mangroves produce secondary metabolites, they can withstand situations with high salt, excessive humidity, and pH levels. Mangroves like *A. marina* may include endophytic microorganisms that function by producing biological or secondary metabolites in their tissues. Endophytic microorganisms that have been isolated from a plant have been shown to be capable of producing secondary metabolites that are related to those of the source plants. *A. marina* belongs to the Acanthaceae family.

Compounds known as antioxidants have the ability to prevent or delay the oxidation of lipids and other biomolecules. They either stop an oxidative chain reaction from starting or stop its spread. Plants contain natural antioxidants on their fruits, stems, leaves, roots, and leaves. The extraction procedure can be used to obtain bioactive substances that function as antioxidants. In comparison to single-stage extraction, multi-stage extraction is used to acquire components with higher purity. One of the most popular techniques for determining a compound's capability to behave as a hydrogen donor or free radical scavenger as well as its antioxidant capacity is the DPPH method (Jairaman et al., 2019, Lincy et al., 2013, Sulmartiwi et al., 2018)

OBJECTIVES

The objective of the current study is to monitor the antioxidant activity of the mangrove *A. Marina* off the coast of Karachi, Pakistan (Sandspit).

MATERIALS AND METHODS

Sample Collection: Collection of *A. marina*: *A. marina* was collected from the backwater of the sandspit near WWF.

Preparation of ethanol extract of *A. marina*: Method of preparation of ethanol extract of mangrove followed by Thana Lakshmi et al., 2021.

DPPH Assay: DPPH Assay followed by Thana Lakshmi et al., 2021.

CONCLUSION

Here, it can be proposed that the antioxidant activity of ethanol extracts of *A. Marina*. Additionally, this research paves the way for the investigation of additional Mangrove species' antioxidant potential for use in therapeutic approaches in vivo.

ACKNOWLEDGMENT:

Firstly, I would like to acknowledge to Jinnah University for Women who has given us such a great opportunities to perform this research, and my supervisor Dr. Saba Rizwan for plenty of efforts she putted in our research.

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