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## **A Study of Antioxidant and Antibacterial of Selected Medicinal Plants**

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### **ABSTRACT**

Medicinal plants have been widely used in traditional systems of medicine because of their therapeutic and protective properties. Among these, the antioxidant and antibacterial activities of selected medicinal plants have gained significant scientific attention. Antioxidants are substances that help protect the body from oxidative stress caused by free radicals, which can damage cells and lead to various diseases such as cancer, diabetes, and cardiovascular disorders. Many medicinal plants contain natural antioxidant compounds such as flavonoids, phenolic acids, tannins, and vitamins that help neutralize harmful free radicals. Plants such as neem (*Azadirachta indica*), turmeric (*Curcuma longa*), tulsi (*Ocimum sanctum*), garlic (*Allium sativum*), and ginger (*Zingiber officinale*) are well known for their strong antioxidant potential. In addition to antioxidant properties, these medicinal plants also exhibit antibacterial activity against a wide range of harmful microorganisms. Bioactive compounds present in these plants can inhibit the growth of bacteria by damaging their cell walls, interfering with metabolic processes, and preventing their reproduction. For example, garlic contains allicin, which has strong antibacterial effects, while turmeric contains curcumin that can suppress the growth of various pathogenic bacteria. Because of these beneficial properties, selected medicinal plants are increasingly being studied as natural alternatives to synthetic drugs.