# PHARMACOLOGICAL PROPERTIES OF POLYGONUM AVICULARE L

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**Abstract:** This thesis analyzes the pharmacological properties of Polygonum aviculare L. based on scientific literature. Studies concerning the antioxidant and anti-inflammatory activities associated with phenolic acids and flavonoids present in the plant are reviewed. Furthermore, the available scientific evidence and prospects for future research are discussed.

Keywords: Polygonum aviculare L., pharmacological properties, flavonoids, phenolic acids, antioxidant activity, anti-inflammatory activity.

**Introduction**

Natural compounds found in medicinal plants are important subjects of research in pharmacognosy, phytochemistry, and pharmaceutical sciences. Polygonum aviculare L., a plant belonging to the Polygonaceae family, has attracted scientific interest due to its biologically active constituents and potential pharmacological effects. Phenolic compounds and flavonoids present in the plant play an important role in understanding its biological activities. The purpose of this thesis is to examine the principal pharmacological properties of Polygonum aviculare L. based on existing scientific literature.

**Main Body**

The biological activity of Polygonum aviculare L. is associated with its phenolic compounds and flavonoids. Scientific studies have reported the presence of compounds such as gallic acid, chlorogenic acid, quercetin, and other polyphenols. These substances are important in investigating the antioxidant properties of plant extracts [1, 2].

Antioxidant activity refers to the ability of compounds to interact with free radicals and oxidative processes. Several studies have demonstrated that extracts of Polygonum aviculare L. and certain flavonoids isolated from the plant exhibit antioxidant activity under laboratory conditions. These findings highlight the biological significance of polyphenolic compounds present in the plant. However, laboratory experiments do not automatically establish that similar effects will occur in the human body [2, 3].

Another pharmacological property of Polygonum aviculare L. under investigation is its anti-inflammatory activity. Certain in vitro studies have identified the effects of flavonoids isolated from the plant on cellular processes associated with inflammation. In particular, researchers have examined the influence of specific compounds on the generation of reactive oxygen species and the activity of enzymes involved in inflammatory processes [3]. These findings indicate the need for further investigation into the pharmacological potential of Polygonum aviculare L.

When evaluating the pharmacological properties of the plant, it is essential to consider its chemical composition, growing conditions, and extraction methods. The chemical composition and biological activity of extracts prepared under different conditions may vary considerably. Therefore, determining the concentrations of active compounds, standardizing plant extracts, evaluating their toxicological properties, and assessing their safety are important research priorities.

Although current scientific evidence indicates promising biological activities of certain compounds found in Polygonum aviculare L., additional studies are required to establish the efficacy and safety of



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the plant in treating human diseases. Consequently, laboratory findings should not be regarded as equivalent to demonstrated clinical effectiveness.

**Conclusion**

Phenolic acids and flavonoids present in Polygonum aviculare L. play a significant role in investigations of its antioxidant and potential anti-inflammatory activities. Existing laboratory findings provide a scientific basis for further research into the pharmacological potential of this medicinal plant. Nevertheless, a comprehensive assessment of its potential applications in clinical medicine requires more extensive investigations into its chemical composition, toxicological safety, and clinical efficacy.

**References**

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