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A Study of Phytochemicals and Anti-Cancer Potential of Pueraria Lobata in Lung Cancer

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ABSTRACT

Pueraria lobata is a medicinal plant widely used in traditional medicine and known for its rich phytochemical composition. It contains several biologically active compounds such as flavonoids, isoflavones, puerarin, daidzein, and genistein, which exhibit significant pharmacological properties. These phytochemicals have attracted considerable scientific attention due to their antioxidant, anti-inflammatory, and potential anti-cancer activities. In recent years, researchers have explored the role of *Pueraria lobata* in the prevention and treatment of Lung Cancer, one of the leading causes of cancer-related deaths worldwide. The phytochemicals present in *Pueraria lobata* are believed to inhibit the growth and proliferation of cancer cells through multiple mechanisms. These compounds can reduce oxidative stress, suppress inflammatory responses, and induce apoptosis (programmed cell death) in cancer cells. Additionally, certain isoflavones found in the plant may interfere with cancer cell signaling pathways, thereby limiting tumor progression and metastasis. Experimental studies using chemical-induced lung cancer models have shown that extracts of *Pueraria lobata* may help reduce tumor development and protect lung tissues from carcinogenic damage. Therefore, *Pueraria lobata* represents a promising natural source for the development of plant-based therapeutic agents for lung cancer management. Further clinical and experimental studies are required to better understand its mechanisms and potential applications in modern cancer therapy.