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PHARMACOGNOSY

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ABSTRACT:

This article discusses the essence, historical development, and major directions of pharmacognosy as a scientific discipline. Special attention is given to medical plants, their chemical composition, and pharmacological properties. The classification of biologically active compounds, methods of their extraction, and their applications in modern medicine are analyzed. Furthermore, the role of pharmacognosy in the pharmaceutical industry, the development of phytotherapy, and the prospects for discovering new drugs from natural sources are highlighted

Introduction: pharmacognosy is a branch of science that studies drugs derived from natural sources, primarily plants, but also anomals and minerals. It is closely related to disciplines such as botony, chemistry, and pharmacology. The field focuses on identifying, analyzing, and utilizing natural substrances for medicinal purposes. The use of medicinal plants dates bask thousands of years. Ancients civilizations such as Egypt, India, and China

relied heavily on plant-based remedies. Today, pharmacognosy has evolved into a modern scientific discipline that plays a crucial role in drug discovery and development. Pharmacognosy gas its roots in traditional medicine. Early healers discovered the therapeutic properties of plants through observation and experimentation. During the medieval period, scholars such as Avicenna made significant contributions by systematizing knowledge about medicinal plants. His famous work, The Canon of Medicine, became a foundational text in medical science. In the 19th and 20th centuries, advances in chemistry enabled scientists and identify active compounds of pharmacognosy into a modern scientific discipline. Pharmacognosy encompasses several important areas of study: identification and classification of medicinal plants. Evalution of raw materials using macroscopic and microscopic methods. Isolation and characterization of bioactive compounds. Development of plant-based pharmaceuticals. Standardization and quality control of herbal drugs. In addition to plants, pharmacognosy also studies natural products derived from animals and minerals. Medicinal plants contain a wide range of chemical compounds responsible for their therapeutic effects. The main groups of bioactive compounds include.

Alkaloids nitrogen containing compounds with strong physiological effects. Examples include morphine and atropine, which affect the nervous system. Flavonoids natural antioxidants that protect the body from oxidative stress and support cardiovascular helth. Glycosides compounds that influence heart function. Cardiac glycosides are commonly used in treating heart diseases. Saponins compounds known for their expectorant and immune boosting properties. Essential oils volatile aromatic compounds with antimicrobial and calming effects. Tannins compounds with astringent and anti-inflammatory properties. Various techniques are in pharmacognosy to extract active compounds from natural sources. Extraction using organic solvents. Distillation for essential oils. Maceration soaking in solvents at room temperature. Percolation continuous extraction process. These methods helps obtain high-quality medicinal substances for pharmaceutical use.

Phytotherapy refers to the use of plant-based remedies for the treatment and prevention of diseases. It has gained popularity due to several advantages. Natural origin. Low toxicity and fewer sude effects. Holistic effect on the human body. Many modern drugs are derived directly or indirectly from plant compounds. In contemporary science and medicine, pharmacognosy plays a vital role in. discovery of new drugs. Development of dietary supplements. Production of eco-friendly medicines. Identification of new antimicrobial and antiviral agents. Advanced technologies such as chromatographyand spectroscopy have significantly enhanced research in this field. *

Conclusion: Pharmacognosy is an essential scientific discipline that bridges natural resources and modern medicine. The study of medicinal plants and their bioactive compounds contributes significantly to healthcare and drug development. With continuous advancements in technology, pharmacognosy holds great promise for the discovery of new, and effective therapeutic agents.

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