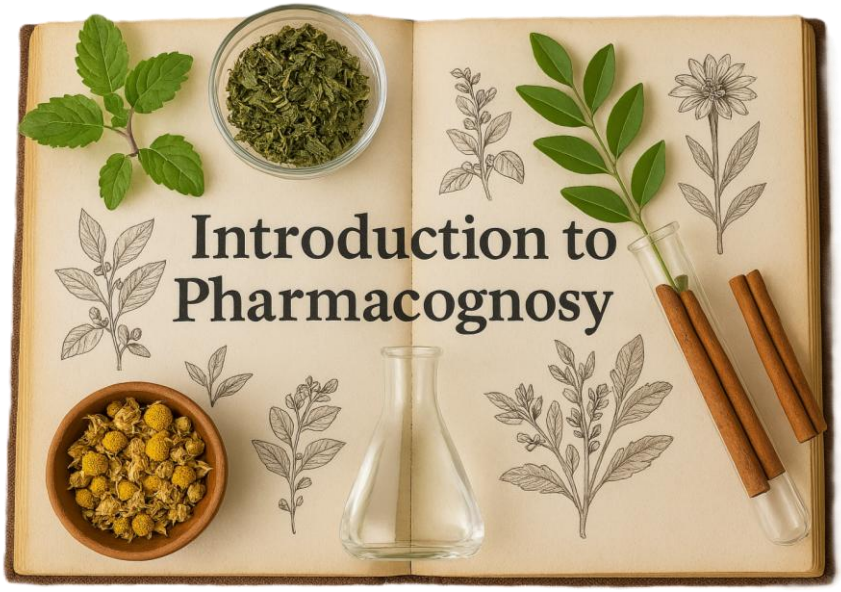
Definition, history and scope of Pharmacognosy

Definition, history, scope and development of Pharmacognosy

Definition

- Pharmacognosy:
  - The branch of pharmaceutical sciences that deals with the study of drugs of **natural origin**, encompassing their biological, chemical, biochemical, and physical properties.
  - It includes the study of **crude drugs** derived from plants, animals, microbes, and marine organisms, as well as other natural sources.
- The term originates from two Greek words:
  - **pharmakon** meaning "drug,"
  - **gnosis** meaning "knowledge."
- Hence, pharmacognosy literally refers to the "knowledge of drugs" (especially those derived from natural sources).



History

Ancient Civilizations:

- The use of natural products as medicines can be traced back to ancient civilizations like those of Egypt, India (Ayurveda), China (Traditional Chinese Medicine), and Greece.

Early Documentation:

- The Ebers Papyrus (circa 1500 BCE) from Egypt documents hundreds of herbal remedies.
- In India, the Charaka Samhita and Sushruta Samhita describe medicinal plants and formulations.
- Dioscorides, a Greek physician (1st century CE), wrote "De Materia Medica," a crucial text describing numerous medicinal plants and their uses.

Middle Ages to Renaissance:

- Herbalists and apothecaries in Europe preserved knowledge on medicinal plants through herbals and manuscripts.
- The Renaissance era saw an upsurge in botanical gardens and systematic study of medicinal plants.

Modern Era:

- With advances in chemistry during the 18th and 19th centuries, isolation of **active constituents** (e.g., morphine from opium, quinine from cinchona bark) began to shape modern pharmacognosy.
- Development of **phytochemistry** and molecular biology in the 20th century expanded the discipline into the discovery of **new drugs** from natural sources.

Scope and Development of Pharmacognosy

- Pharmacognosy has evolved to include multiple disciplines, making it a critical area of study in pharmaceutical sciences.

Scope of Pharmacognosy

1. **Identification and authentication of crude drugs** – Recognizing and differentiating medicinal plant materials.
2. **Isolation of bioactive compounds** – Extracting medicinal substances from natural sources.
3. **Phytochemistry** – Studying the chemical composition of plants and their medicinal properties.
4. **Pharmacological evaluation** – Testing natural products for biological activity.
5. **Biotechnology and tissue culture** – Producing medicinal compounds using biotechnology.
6. **Quality control and standardization** – Ensuring purity, potency, and safety of herbal medicines.
7. **Herbal drug formulation** – Developing natural products into pharmaceutical forms.

Development of Pharmacognosy

- Advances in chromatography, spectroscopy, and molecular biology have improved the analysis of natural compounds.
- The increasing demand for herbal medicines and natural products has led to research on sustainable sources and biotechnological production.
- Pharmacognosy plays a role in discovering new drugs, such as antibiotics and anticancer agents from natural sources.

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