



Pharmacognosy



Unit 1



Fundamentals of Pharmacognosy, Sources of Drugs, History of Drug Discovery and Pharmacopoeias



Natural Origins
Unlimited Potential



Traditional Wisdom
Timeless Knowledge



Scientific Exploration
Evidence Based



Better Health
Sustainable Future



Sources of
Drugs



Pharmacopoeias



History of
Drug Discovery



PHARMACOGNOSY

DEFINITION

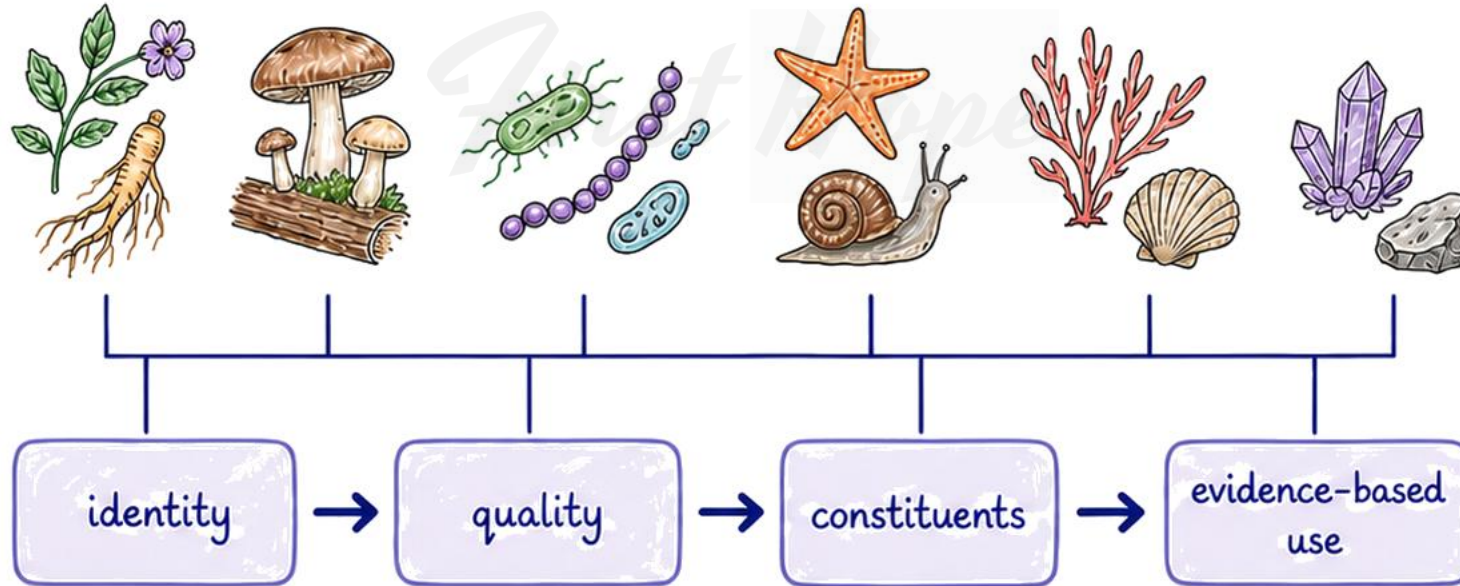
Study of drugs, drug substances, and potential drugs of natural origin, including their physical, chemical, biochemical, and biological properties.

SOURCES

Plants • fungi • bacteria and other microorganisms • animals • marine organisms • selected mineral materials used in pharmacy

OBJECTIVES

- Authenticate source species and drug part.
- Study cultivation, collection, processing, and storage.
- Evaluate morphology, microscopy, chemistry, and biological activity.
- Isolate and characterize natural products.
- Detect substitution, adulteration, and contamination.
- Develop reproducible quality specifications.



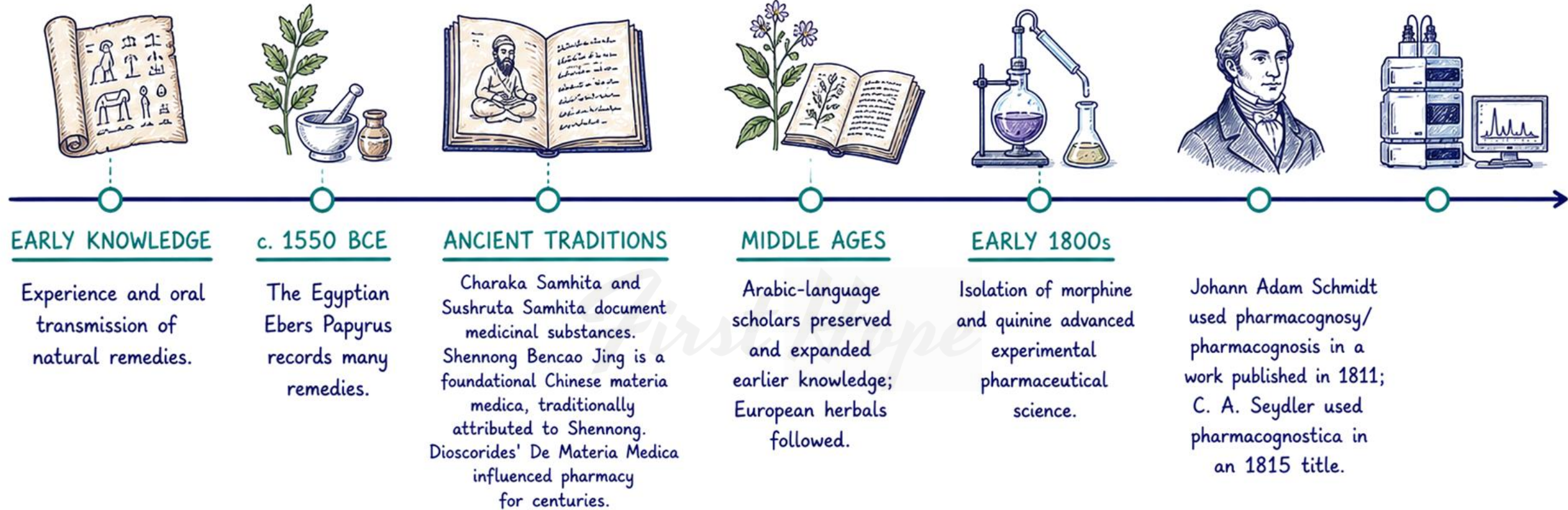
IMPORTANCE

Supports correct identification, quality control, sustainable use, and discovery of useful natural-product leads.

CRUDE DRUG

Used whole, fragmented, powdered, or after limited processing. A purified compound such as morphine is a natural product, but no longer a crude drug.

HISTORY & DEVELOPMENT OF PHARMACOGNOSY



DEVELOPMENT



PRESENT STATUS OF PHARMACOGNOSY

APPLICATIONS

- Quality control of herbal materials and preparations
- Natural-product screening and drug-lead discovery
- Pharmacopoeial monographs and reference materials
- Plant and microbial biotechnology
- Research on nutraceutical, cosmetic, excipient, and pharmaceutical materials under relevant regulation

MODERN PHARMACOGNOSY

Combines classical authentication with phytochemistry, natural-products chemistry, pharmacology, biotechnology, ethnopharmacology, and quality assurance.



MODERN TECHNIQUES

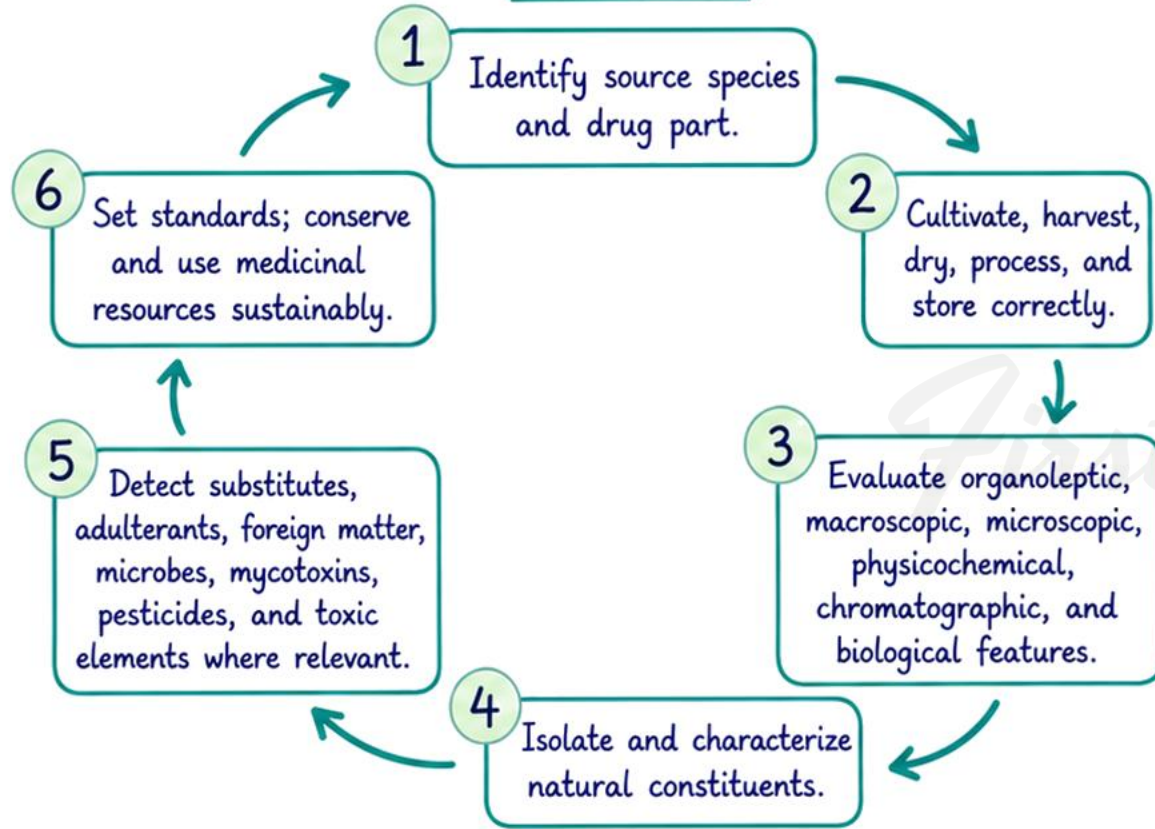
- Macroscopy and microscopy
- HPTLC/TLC • HPLC • GC
- UV/IR spectroscopy • mass spectrometry • NMR
- DNA barcoding where appropriate
- Metabolomics • bioassays • molecular methods

IMPORTANT

An analytical fingerprint or marker assay supports identity and consistent composition; it does not alone prove clinical efficacy or safety.

SCOPE & DEVELOPMENTAL STAGES

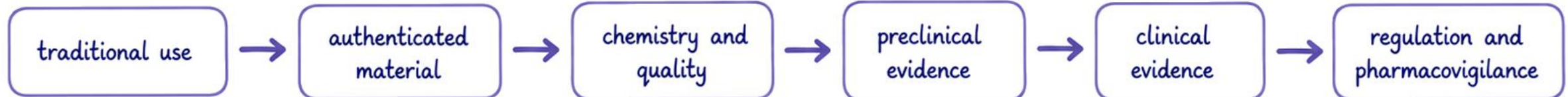
SCOPE



DEVELOPMENTAL STAGES

1. Traditional: empirical use, collection, and recognition.
2. Scientific: microscopy, taxonomy, chemistry, constituent isolation, and pharmacology.
3. Modern integrated: validated analytics, molecular tools, biotechnology, systems data, and quality assurance.

EVIDENCE LADDER





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