PHARM.D • YEAR 2

Pharmacognosy & Phytopharmaceuti

CHAPTER 1

Introduction to Pharmacognosy and Phytopharmaceuticals

PPT CHAPTER COVER



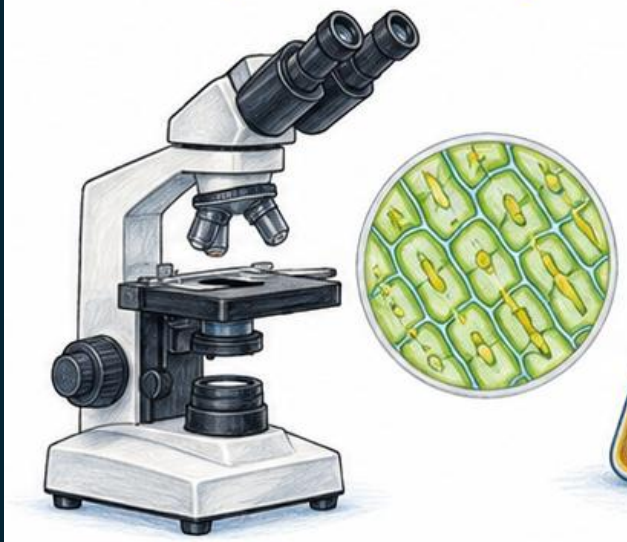
DOCTOR OF PHARMACY

Pharmacognosy and natural drugs

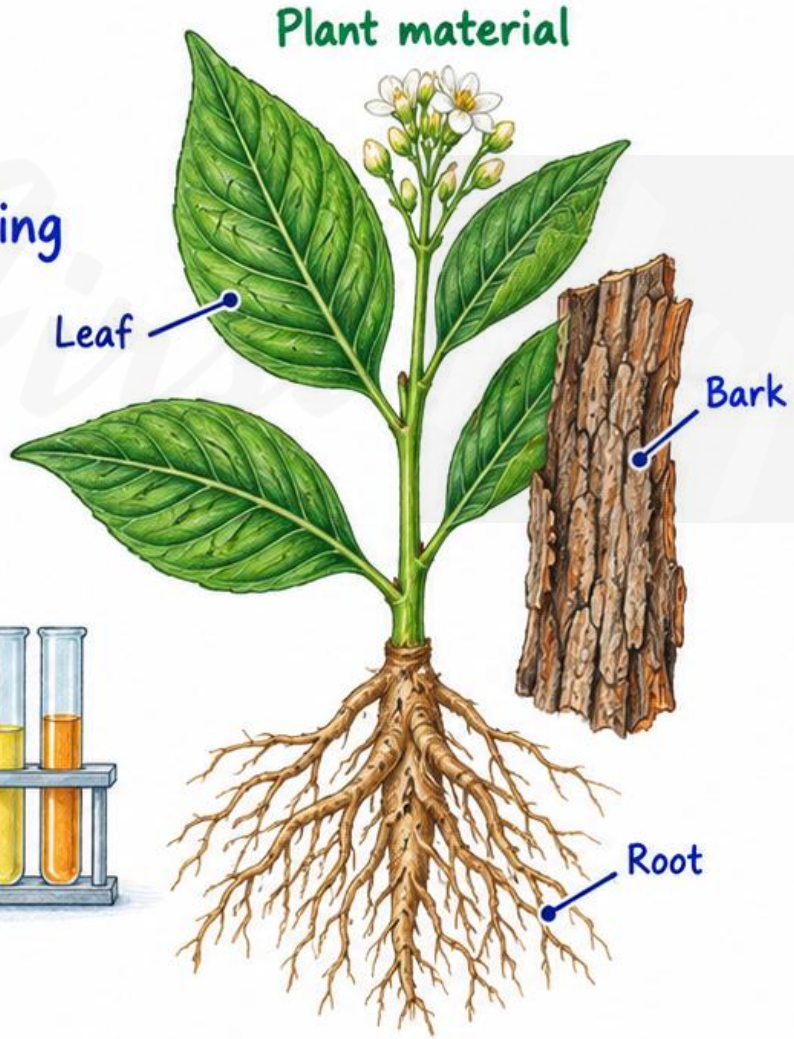
Pharmacognosy studies medicines and potential drug substances from natural sources.

Scientific evaluation

Traditional knowledge suggests research questions. Scientific testing evaluates identity, chemistry, activity and safety.







Plants supply leaves, roots, bark, seeds and flowers.



Examples:

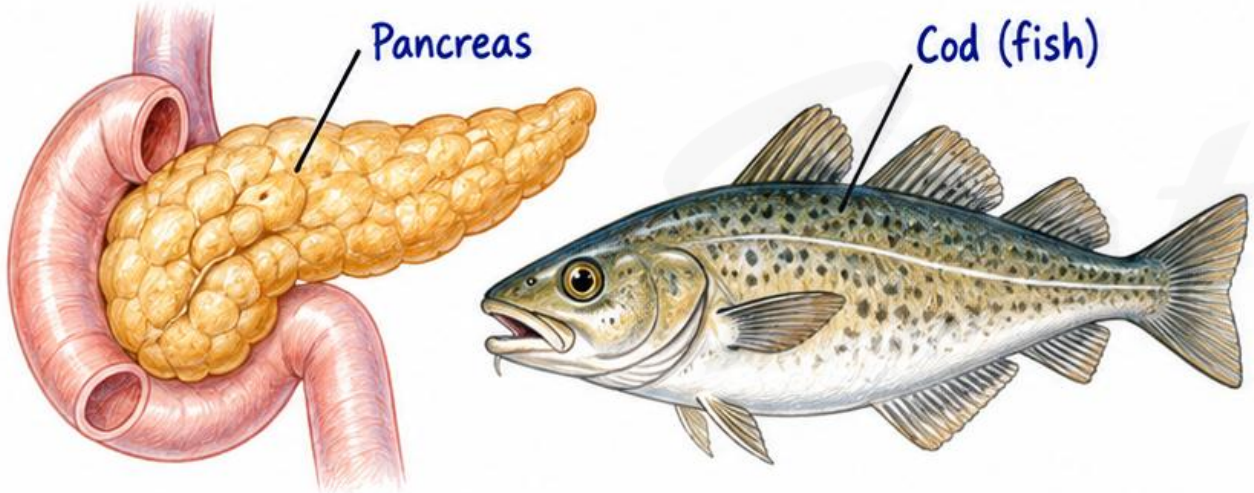
morphine from opium poppy, quinine from Cinchona, and drugs such as Digitalis and Senna.

Natural origin alone does not establish safety or clinical effectiveness.

Animal and microbial drug sources

Animal sources

Glands, organs and other tissues provide medicinal substances.

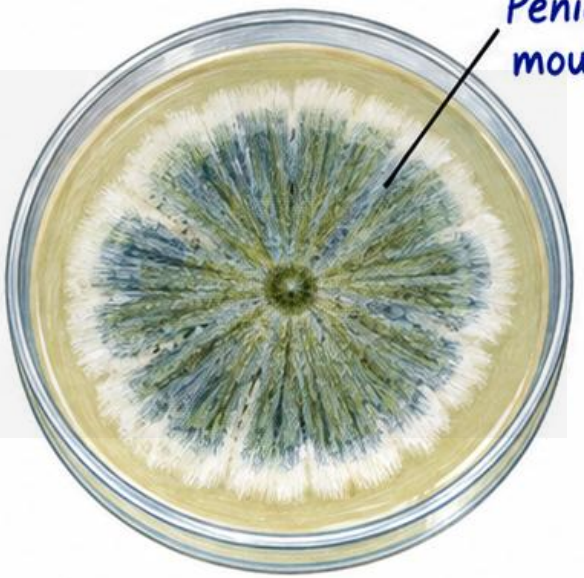


Examples include heparin and cod liver oil. Insulin was historically obtained from animal pancreas.

Modern human insulin is commonly manufactured using recombinant DNA technology.

Microbial sources

Fungi and bacteria produce useful metabolites.





Penicillin was discovered from a *Penicillium* mould.

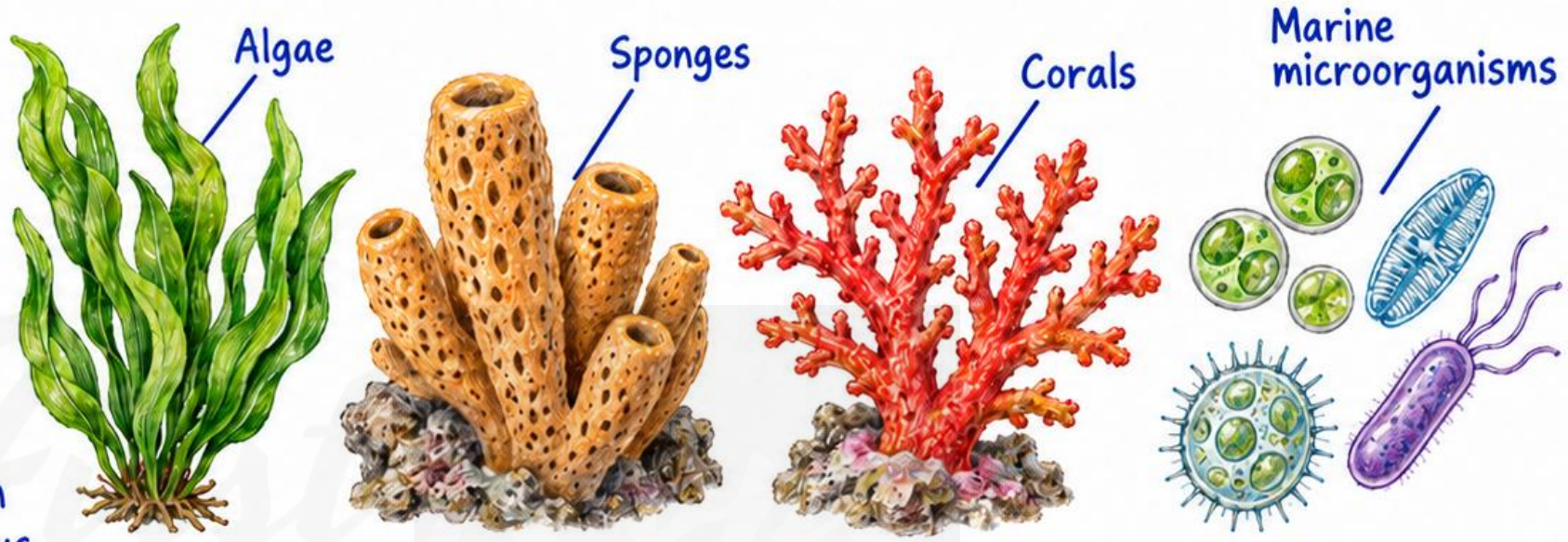
Microbial fermentation provides a route to production.

Marine and mineral sources

Marine sources

Algae, sponges, corals and marine microorganisms provide bioactive compounds and drug leads.

ARA-A is vidarabine. It is associated with marine-inspired nucleoside research, but should not be labelled a sponge extract. Vidarabine has been isolated from Streptomyces antibioticus.



Mineral sources

Naturally occurring inorganic materials are also studied in traditional pharmacognosy.

Examples include kaolin and sulfur. Calamine is a mineral-derived pharmaceutical preparation.



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