

sec.1: History



# MEDICINAL PLANTS

# BIOTECHNOLOGY

## Dr.Mehdi Rahimmalek



**SO FAR ...**

Natural products have been the primary source for drug development with about 80% plant-derived compounds in clinical trials in 2018. Many different natural products have led to a profound understanding of human health and disease processes, particularly useful for diseases such as diabetes, Alzheimer's disease and cancer.

Modern drug development requires personalized, high-throughput approaches. The new drug discovery process and biological activities of plant-derived compounds suggest that additional, vertically-integrated, compounds need to be discovered in nature.

The discovery of new drugs and biotechnologies is the first of a kind and can be used to improve the quality of life for millions of people.

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# ***MEDICINAL PLANTS BIOTECHNOLOGY***

**Wednesdays at 10 o'clock**

**20 score :**

**Midterm Exam = 7**

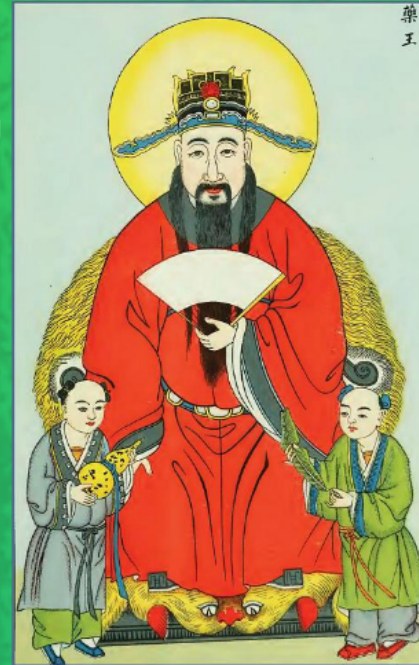
**Final Exam = 12**

**Class activity = +1**

**PLEASE BE HAPPY  
WHEN YOU COME TO THIS CLASS**



Healing with medicinal plants is as old as mankind itself. The connection between man and his search for drugs in nature dates from the far past, of which there is ample evidence from various sources: written documents, preserved monuments, and even original plant medicines. Awareness of medicinal plants usage is a result of the many years of struggles against illnesses due to which man learned to pursue drugs in barks, seeds, fruit bodies, and other parts of the plants.





Ever since ancient times, in search for rescue for their disease, the people looked for drugs in nature. The beginnings of the medicinal plants' use were instinctive, as is the case with animals. In view of the fact that at the time there was not sufficient information either concerning the reasons for the illnesses or concerning which plant and how it could be utilized as a cure, everything was based on experience. In time, the reasons for the usage of specific medicinal plants for treatment of certain diseases were being discovered;







Medical schools known as **Bimaristan** began to appear from the **9th century** in the medieval Islamic world among Persians and Arabs, which was generally more advanced than medieval Europe at the time. The Arabs venerated Greco-Roman culture and learning, and translated tens of thousands of texts into Arabic for further study. As a trading culture, the Arab travellers had access to plant material from distant places such as China and India. Herbals, medical texts and translations of the classics of antiquity filtered in from east and west. Muslim botanists and Muslim physicians significantly expanded on the earlier knowledge of **materia medica**.







thus, the medicinal plants' usage gradually abandoned the empiric framework and became founded on explicatory facts. Until the advent of iatrochemistry in **16th century**, plants had been the source of treatment and prophylaxis. Nonetheless, **the decreasing efficacy of synthetic drugs and the increasing contraindications of their usage make the usage of natural drugs topical again.**







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Natural products from plants serve as rich resources for drug development with almost 100 plant-derived compounds in clinical trials in 2007. Plant derived natural products have had a profound and lasting impact on human health and include compounds successfully used for decades such as digitalis, vincristine, Taxol and morphine isolated from foxglove, periwinkle, yew, and opium poppy, respectively. The enormous structural diversity and biological activities of plant-derived compounds suggest that additional, medicinally relevant compounds remain to be discovered in plants.

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Medicinal plants are used for various purposes in traditional medicine. They can be used to treat a wide range of ailments, from pain and inflammation to more serious conditions. The use of medicinal plants is a common practice in many cultures around the world.