

UNIVERSITY OF SCIENCE AND TECHNOLOGY BANNU



NEUTRACEUTICAL, CLASSIFICATION AND ITS GENERAL ROLE

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NUTRACEUTICAL

The word nutraceutical is the hybrid of 'Nutrition' and 'Pharmaceutical'. "Nutraceutical".

► Nutrition

It is the sum total of the processes involved in the taking in and the utilization of food substances by which growth, repair and maintenance of the body are accomplished. It involves ingestion, digestion, absorption and assimilation.



► Pharmaceutical

A compound manufactured for use as a medicinal drug:





HISTORY

- ▶ The word "nutraceutical" is a blend of the words "[nutrition](#)" and "[pharmaceutical](#)", coined in 1989 by [Stephen L. DeFelice](#), founder and chairman of the Foundation of Innovation in Medicine (FIM).
- ▶ [Indians](#), [Egyptians](#), [Chinese](#), and [Sumerians](#) are just a few civilizations that have used food as [medicine](#).
- ▶ The modern nutraceutical market began to develop in [Japan](#) during the 1980s. In contrast to the natural [herbs](#) and [spices](#) used as [folk medicine](#) for centuries throughout [Asia](#),



DEFINITION

- ▶ Essentially, a nutraceutical is a substance that has a physiological benefit or provides protection from chronic disease.
- ▶ Nutraceutical, is a type of food substance that helps to maintain health and prevent illness.
- ▶ Other names or alternative word for Nutraceutical is Bioceutical , Functional food, Medical foods, Phytochemicals, Dietary supplements.



EXPLANATION

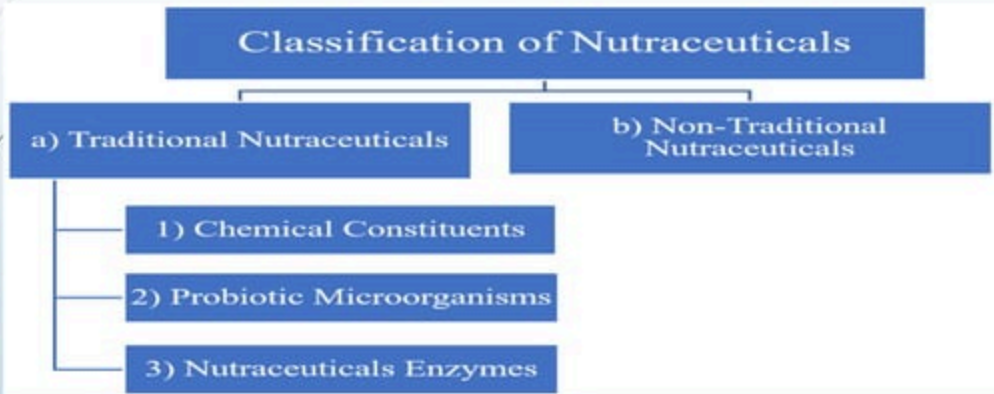
- ▶ Unfortunately, the definition of nutraceuticals varies from country to country depending on how they are categorized and regulated. At the moment there is no clear internationally accepted definition of a nutraceutical.
- ▶ **Nutraceuticals** are commodities derived from foods, but are used in the medicinal form of pills, capsules or liquids and again render demonstrated physiological benefits.
- ▶ **Nutraceuticals** can be natural or fortified with bioactive compounds, such as vitamins, minerals, herbs, or probiotics



DIFFERENCE BETWEEN A FUNCTIONAL FOOD AND A NUTRACEUTICAL

- In Canada, a functional food has been defined as being “similar in appearance to conventional foods ... consumed as part of a usual diet” whereas a nutraceutical is “a product produced from foods but sold in pills, powders, (potions) and other medicinal forms not generally associated with food”.

CLASSIFICATION



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GENERAL ROLE OF NUTRACEUTICALS




GENERAL ROLE OF NUTRACEUTICALS

- Health promotion
- Disease Prevention
- Management of Nutritional Deficiencies
- Support for Specific Health Conditions
- Enhanced Nutrient Bioavailability ex piperine helps in absorption of curcumin
- Maintenance of Optimal Body Functions ex probiotics
- Anti-Aging and Longevity
- Detoxification and Liver Health



RECENT ADVANCES IN NUTRACEUTICAL

- **Personalized Nutrition:** Advances in technology, such as genetic testing and microbiome analysis, have allowed for personalized nutrition approaches. Nutraceuticals can now be tailored to an individual's specific genetic makeup, gut microbiota, and health goals.
- **Nanoencapsulation:** Nanoencapsulation techniques have been developed to enhance the bioavailability and stability of nutraceutical compounds. Nano-sized particles protect the active ingredients, allowing for targeted delivery and improved absorption in the body.
- **Plant-Based Nutraceuticals:** The popularity of plant-based diets has driven the development of plant-based nutraceuticals. These include extracts from fruits, vegetables, herbs, and spices, which are rich in bioactive compounds such as polyphenols, flavonoids, and antioxidants.

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- **Gut Health Nutraceuticals:** The gut microbiota plays a crucial role in overall health, and nutraceuticals targeted at improving gut health have gained popularity. Probiotics, prebiotics, and postbiotics are being extensively studied for their beneficial effects on digestion, immune function, and mental well-being.
 - **Sports Performance Nutraceuticals:** Advances have been made in developing nutraceuticals to enhance athletic performance, exercise recovery, and muscle growth. Ingredients like branched-chain amino acids (BCAAs), creatine, beta-alanine, and nitric oxide boosters are commonly used in sports nutrition products.
 - **Nutraceuticals for Skin Health:** Nutraceuticals are being developed to promote healthy skin from within. Ingredients like collagen peptides, hyaluronic acid, antioxidants, and vitamins are incorporated into nutraceutical formulations to improve skin hydration, elasticity, and overall appearance.
 - **Marine-Derived Nutraceuticals:** Nutraceuticals derived from marine sources, such as algae, seaweed, and fish, are gaining attention due to their unique nutritional profiles. They are rich in omega-3 fatty acids, vitamins, minerals, and bioactive peptides with potential health benefits.



GENERAL ROLE OF NUTRACEUTICALS

- ▶ **Anti-Aging Nutraceuticals:** Nutraceuticals with anti-aging properties are gaining popularity. Ingredients like resveratrol, coenzyme Q10 (CoQ10), astaxanthin, and certain vitamins and minerals are being researched for their potential to counteract the effects of aging, improve skin health, and promote longevity.
- ▶ **Immune-Boosting Nutraceuticals:** With the increasing focus on immune health, nutraceuticals designed to support immune function are in high demand. Nutrients like vitamin C, vitamin D, zinc, selenium, and various herbal extracts are incorporated into formulations aimed at enhancing immune responses and reducing the risk of infections.
- ▶ **Sustainable Nutraceuticals:** There is a growing interest in sustainable nutraceuticals that have minimal environmental impact. This includes the use of plant-based ingredients sourced from sustainable farming practices, eco-friendly packaging materials, and production processes that minimize waste and energy consumption.



THANK YOU

FOR PRESENTING WITH ME



THANK YOU

FOR LISTENING