



Biotechnology

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DESCRIPTION

Biotechnology can be a broad area of biology, involving the use of living systems and organisms to develop or make products. Looking forward to the tools and applications, it often overlaps with related scientific fields. Within the late 20th and early 21st centuries, biotechnology has expanded to include new and diverse sciences, like genomics, recombinant gene techniques, applied immunology, and development of pharmaceutical therapies and diagnostic tests. The term biotechnology was first utilized by Karl Ereky in 1919, meaning the assembly of products from raw materials with the assistance of living organisms.

The wide concept of biotechnology encompasses an outsized range of procedures for modifying living organisms per human purposes, going back to domestication of animals, cultivation of the plants, and "improvements" to those through breeding programs that employ artificial selection and hybridization. Modern usage also includes biotechnology furthermore as cell and tissue culture technologies. The American Chemical Society defines biotechnology because the applying of biological organisms, systems, or processes by various industries to learning about the science of life and also the development of the price of materials and organisms like pharmaceuticals, crops, and livestock. Per the International Federation of Biotechnology, biotechnology is that the combination of science and organisms, cells, parts thereof, and molecular analogues for products and services. Biotechnology relies on the essential life sciences (e.g. biological science, biochemistry, cell biology, embryology, genetics, microbiology) and conversely provides methods to support and perform basic research in biology.

Biotechnology has applications in four major industrial areas, including health care (medical), crop production and agriculture, non-food (industrial) uses of crops and other products (e.g. biodegradable plastics, edible fat, biofuels), and environmental uses.

For example, one application of biotechnology is that the directed use of microorganisms for the manufacture of organic products (examples include beer and milk products). Another example is using naturally present bacteria by the mining industry in bioleaching. Biotechnology is additionally used to recycle, treat waste, finish off sites contaminated by industrial activities (bioremediation), and also to produce WMD

A series of derived terms are coined:

Blue biotechnology relies on the exploitation of sea resources to create products and industrial applications. This branch of biotechnology is that the foremost used for the industries of refining and combustion principally on the assembly of bio-oils with photosynthetic micro-algae.

Bioinformatics (also called "gold biotechnology") is an interdisciplinary field that addresses biological problems using computational techniques, and makes the rapid organization furthermore as analysis of biological data possible. The sphere may additionally be noted as computational biology, and will be defined as, "conceptualizing biology in terms of molecules so applying informatics techniques to understand and organize the info associated with these molecules, on an outsized scale." Bioinformatics plays a key role in various areas, like genomics, genomics, and proteomics, and forms a key component within the biotechnology and pharmaceutical sector.