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Question

Discuss in details the aspects of medical biotechnology

Answer

There are several branches of Biotechnology. The main aspects are classified as:

Bioinformatics (Computational biology) is a field that addresses problems using computational techniques and makes the fast organization and analysis of biological data possible. It is used for various purposes like drugs, for the development of medicines; it is also used to improve the fertility of crops and plants and also for pest, drought and it is resistance to diseases. Bioinformatics plays an important role in areas like functional genomics, structural genomics and proteomics these areas contribute a lot and become a key contributor to Biotechnology and pharmaceutical sector.

Blue biotechnology is the aspect of biotechnology based on the exploitation of sea resources to make products and industrial applications. Blue biotechnology is mostly used for the industries of refining and combustion for the production of bio-oils with photosynthetic micro-algae. This aspect of biotechnology helps to control the marine organisms and water borne organisms. The use of this biotechnology is very rare. Blue biotechnology is also used to protect the marine organisms from harmful diseases underwater.

Green biotechnology is the term used for the agricultural sector. Green biotechnology is applied to agricultural processes for example the selection and domestication of plants by micropropagation (which is the production of more plants through the existing stock of plants), the designing of transgenic plants to grow under specific environments in the presence (or absence) of chemicals. Green biotechnology also involves the use microorganisms to clean and reduce waste.

Red biotechnology (medical biotechnology) is the use of biotechnology in the medical and pharmaceutical industries, and health preservation. It involves the production of vaccines and antibiotics. It also helps to create or design organisms. It helps to cure genetic issues in organisms through the process known as genetic manipulation. Medical biotechnology helps in analyzing diseases and developing new ways of diagnosis by performing tests.

White biotechnology (industrial biotechnology) is biotechnology applied in industries and its processes. The industrial biotechnology society usually accepts an informal divide between

manufacturing and pharmaceutical biotechnology.

Examples include; the designing of an organism to produce a useful chemical and the use of enzymes as industrial catalysts to produce valuable chemicals or destroy hazardous chemicals, the use of fungus to produce antibiotics e.g. penicillin from the penicillium fungi goods.

Uses of white Biotechnology includes; production of biopolymers (Plastics) Substitutes, invention of new vehicle parts and fuels for the vehicles, invention of fibers for the clothing industry, it is also involved in developing new chemicals and the production process.

It can also be used to decrease the costs for producing industrial supplies that occur when traditional processes are used.