Medical Biotechnology

The field of Medical Biotechnology includes research and development of technology used in the, agricultural and pharmaceutical industries. Medical biotechnology is the use of living cells and cell materials to research and produce pharmaceutical and diagnostic products that help treat and prevent human diseases Biotechnology is an important field that is applied to these sectors with the aim of improving the different targeted genes and customized medicines. There are numerous methods applied to biotechnology such as gene treatment, recombinant DNA technology. A more targeted approach is called polymerase establishment revenge which uses genetics along with DNA particles to make a projected illness and put in replace them with healthy genes in the physical body in place of the harmed cells.

Gene treatment

Gene treatment is the insertion of genes into an individual's cells and tissues to treat a disease, and hereditary diseases in which a defective mutant allele is replaced with a function

There are two different types of gene therapy depending on which types of cells are treated:

Somatic gene therapy: transfer of a section of DNA to any cell of the body that doesn’t produce sperm or eggs. Effects of gene therapy will not be passed onto the patient’s children.

Germline gene therapy: transfer of a section of DNA to cells that produce eggs or sperm. Effects of gene therapy will be passed onto the patient’s children and subsequent generations

Recombinant DNA

Recombinant DNA is when molecules of DNA from two different species are inserted into a host organism to produce new genetic combinations that are of value to science, medicine, agriculture, and industry.

Biotechnology is commonly used to improve medicines due to the advantages and pieces of knowledge it provides such as understanding the genetic composition of the human species, foundational structure of hereditary diseases manipulation and repairing of damaged genes to cure diseases.

THE APPLICATIONS OF MEDICAL BIOTECHNOLOGY IN MEDICINE

BIOPHARMACEUTICAL

Through advanced methods in biotechnology, biopharmaceuticals were produced safely and quickly for treating illnesses. Furthermore, biopharmaceuticals do not contain any chemicals and use targeted organisms to synthesize the medicine successfully. Big molecules of proteins are the typical origin of biopharmaceuticals. When they are inside the human body, they target dangerous and hidden parts of the disease and obliterate them. Today, scientists and researchers are aiming to extend and develop biopharmaceutical medicines which can be used to fight diseases related to heart, hepatitis and cancer. Through advanced methods in biotechnology, biopharmaceuticals were produced safely and quickly for treating illnesses. Furthermore, biopharmaceuticals do not contain any chemicals and use targeted organisms to synthesize the medicine successfully. Big molecules of proteins are the typical origin of biopharmaceuticals. When they are inside the human body, they target dangerous and hidden parts of the disease and obliterate them. Today, scientists and researchers are aiming to extend and develop biopharmaceutical medicines which can be used to fight diseases related to heart, hepatitis and cancer.

PHARMACOGENOMICS

Pharmacogenomics is the technique that leverages the person’s heredity information to choose the best biotechnological medicine for their illness. This studies the body system’s response to certain medications. To put it simply, this is the combination of advances in pharmaceuticals along with genomics. The end goal of this application is to improve medicines that are specifically targeted to a person in lieu with his genetic makeup to ensure effective treatment of illness. The end goal of this branch of medical science is to effectively produce biotechnological medicines which are placed in the patient’s body in accordance with his genetical makeup.

RAPID DEPLOYMENT OF VACCINES

A global pandemic is a real issue and has always proven its powerful grip on humanity. Through Biotechnology, scientists and researchers can quickly pinpoint precursors or markers that can cause severe illnesses and diseases. As a result, they can synthesize vaccines quickly against any dangerous pandemic sickness.

With today’s biotechnology, traditional medications are improved efficiently with reduced risk and provides cost-effective alternatives. Through great strides in biotechnology, millions of patients worldwide continue to have a better chance at getting cured using biological medicines developed by companies that are discovering, developing, and delivering innovative medicines to treat all types of illnesses.