Journal Of Harmonized Research (JOHR)

Journal of Harmonized Research in Applied Science 9(1), 2021, 011-012

ISSN 2347-7393

Commentary

STUDY DESCRIPTION ON rDNA TECHNOLOGY

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DESCRIPTION

Recombinant DNA is the general name for a DNA fragment that is created by combining at least two fragments from two different sources. Recombinant DNA is possible because the DNA molecules of all organisms have the same chemical structure and only differ in the nucleotide sequence within this identical general structure. Even the DNA sequences that which does not occur anywhere in nature, they can be generated by chemical synthesis of DNA and incorporated into recombinant molecules. Recombinant DNA must be taken up by the cell in a form in which it can be replicated and expressed. This is achieved by incorporating the DNA into a vector. Various viruses can serve as vectors. But let's examine an example of cloning here using E. coli as the host and a plasmid as the vector. Genes in plasmids with a large copy number are usually expressed at high levels. In nature, these genes often encode proteins that protect bacteria from one or more antibiotics. Plasmids penetrate the bacterial cell relatively easily.

rDNA technology has been used in the manufacture of various biopharmaceuticals; Hormones are one of them. Before the advent of biotechnology, pig and pork insulin have been used to deal with diabetes, which additionally precipitated hypersensitive reactions with inside the human body. In 1978 rDNA technology was used for the synthesis of insulin using E. coli. (Humulin, Novolin, Velosulin). In 1982 the FDA approved recombinant human insulin for the treatment of diabetics. Recombinant DNA technology has been effectively used to produce various human proteins in microorganisms such as insulin and growth hormone that are used in the treatment of diseases and Genetically Modified Organisms r DNA Technology allows the manufacturing of proteins and antibodies with described specificity and uniformity, that is an outstanding development over preceding manufacturing techniques with the aid of using extraction and purification of human or animal blood and tissue. This introduces the different classes of therapy made using recombinant DNA technology and provides background information on the history and development of therapeutic hormones, enzymes, cytokines, and monoclonal antibodies from an early understanding of their value in treating disease to the present day. Production of genetically modified human proteins and novel constructs designed to improve consistency, safety, efficacy or duration of action. Several different mutation systems have been subjected to molecular analysis. Mutations in endogenous genes are analysed by the cloning and sequencing of the whole mutated gene from the mammalian genome. Endogenous genes are the ideal system to use. Mutations in mammalian viral genes are analysed by the recovery of the mutated viral particles and the sequencing of their DNA Shuttle vectors are designed wherein a target gene is inserted into a plasmid this is able to replicating each in bacterial and mammalian cells. The plasmid is mutated within the mammalian cell, after which it is recovered from the mammalian cell and used to convert appropriate indicator microorganism wherein mutations induced in the target gene inside the mammalian cell is easily identified and analysed in the bacteria.

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Received on: September 02, 2021

Accepted after revision: September 16, 2021

CONCLUSION

Recombinant DNA technology is an important advance in science that has made human life much easier. In recent years it has further developed strategies for biomedical applications such as the treatment of cancer, genetic diseases, diabetes and diseases of various plants, in particular resistance viruses and fungi. The role of recombinant DNA technology in cleaning up the environment and increasing plant resistance to various adverse agents is widely recognized and microorganisms are very important. The challenges of improving products at the genetic level sometimes face serious difficulties that must be addressed in order to improve the future of recombinant DNA technology. In the case of pharmaceuticals in particular, there are serious problems in the production of high-quality products, since the body does not accept the change introduced into a gene.