DNA and Technology

Created: Wednesday, 20 July 2011 09:28 | Published: Wednesday, 20 July 2011 09:28 | Written by Super User | Print

Uses in Technology

Genetic Engineering

To purify and modify the characteristics of the DNA from organisms many methods have been developed. Some common methods are

- Restriction digestion
- Polymerase Chain Reaction (PCR)
- rDNA Technology (Recombinant DNA Technology)

Biology and Biochemistry are fields which promote more research in the field of rDNA technology.Recombinant DNA is a man-made DNA sequence that has been assembled from other DNA sequences.

rDNA Technology

In the recombinant technology the desired DNA would be inserted into the DNA of an organism and after multiplication it will have the characteristics of the inserted DNA. This modified DNA is called as recombinant DNA and this can betransformed into organisms in the form ofplasmids or by using aviral vector . The recombinant DNA will modify the characteristics of the host organism and it is then termed as genetically modified organism.

The GM organisms

The genetically modified organisms are (commonly called as GM organisms) can be used to produce some important medicinal products. It will be useful for the researches also. The production of the medicine the ‘recombinant proteins’ are the first successful recombinant product.

rDNA Technology used inmedical research &agriculture.

Forensics

Forensic scientists are the people who work in the forensic researches. They extract the DNA from blood, semen, skin, saliva or hair to find the victim of a crime or murder. By identifying the DNA from the sample they can easily find the victim in the major crimes like, murder, robbery and terrorism. This process is known as DNA profiling. It also named as "genetic fingerprinting".

DNA profiling:

In DNA profiling uses the comparison of DNA between people.Short tandem repeats andminisatellites are commonly compared between people.

This is a very reliable technique for identifying a matching DNA.

But if the scene is contaminated with DNA from several people the DNA profiling will be complicated and may lead to the failure of the process.

Suspected people may be requested to provide their DNA sample. By obtaining the samples, perpetrators or victims may be identified. DNA profiling can also be used to identify victims of mass casualty incidents like airplane crashes.

With this technique identifying the rapist and proving the father or mother in some cases of children are also possible.

Bioinformatics

Biology and informatics are the basis of this bioinformatics. Collecting and interpreting the collected information for further development and study are the key factors of bioinformatics. It involves the manipulation, data mining and searching DNA sequence data.

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Reference Links:

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