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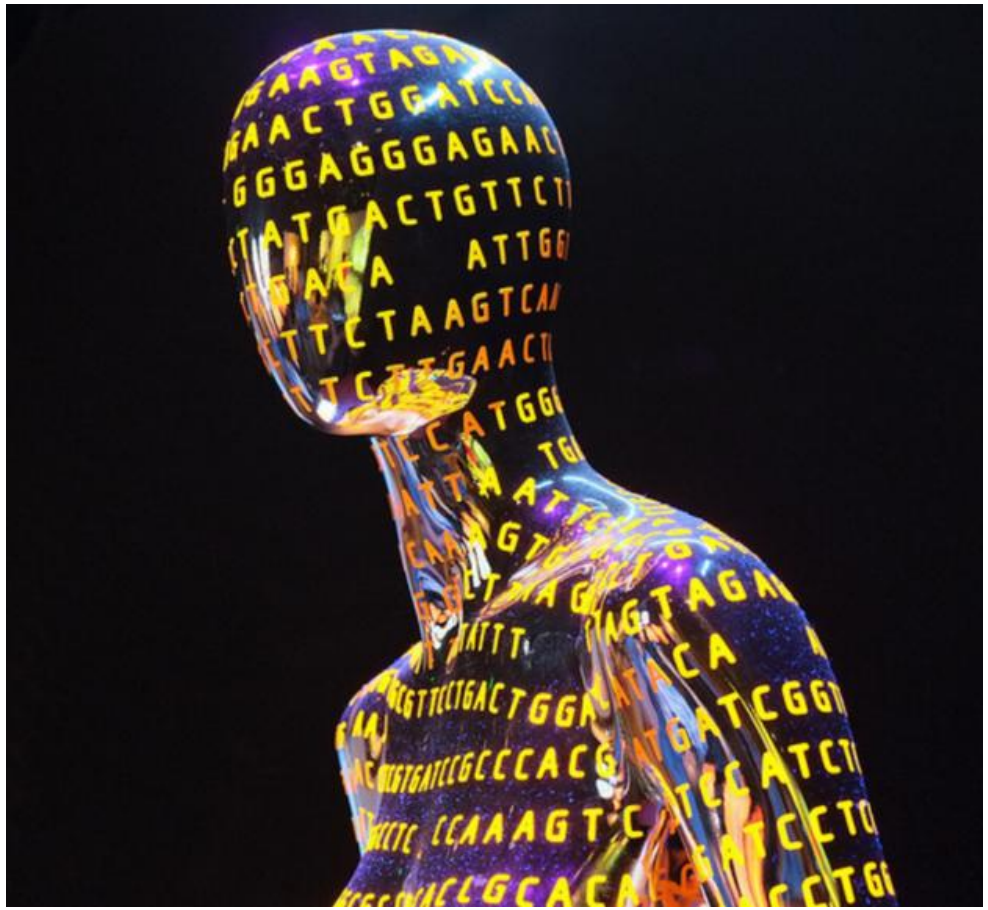
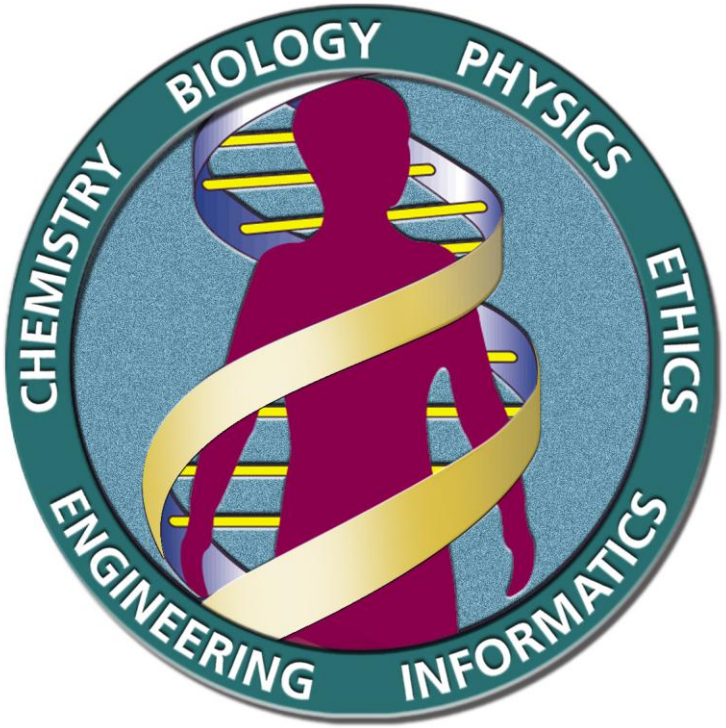
HUMAN GENOME MAPPING PROJECT (HGP)





INTRODUCTION

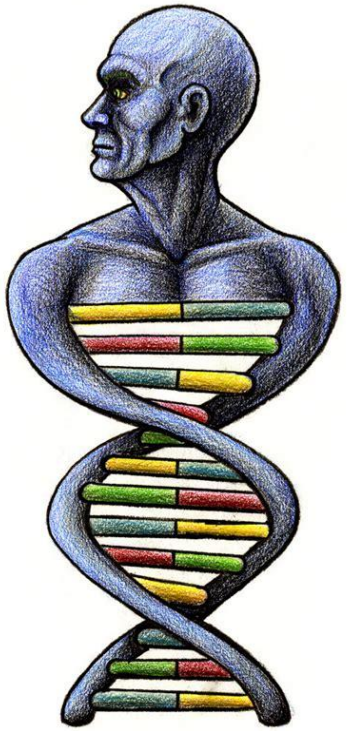
- The human genome project (HGP)was the international ,collaborative research program whose goal was the complete mapping and understanding of all the genes of human beings.
- Genes carry the information for making all of the proteins required by the body for growth and maintenance .
- Human genome project (HGP),initiated in 1990,was jointly co-ordinated by YS department of Energy and National Institute of health. Over 12 countries participated in genome research programmes . It was completed in 2003.

THE HUMAN GENOME PROJECT (HGP) 1990 - 2003

"The human genome underlies the fundamental unity of all members of the human family, as well as the recognition of their inherent dignity and diversity. In a symbolic sense, it is the heritage of humanity."

Universal Declaration on the Human Genome and Human Rights

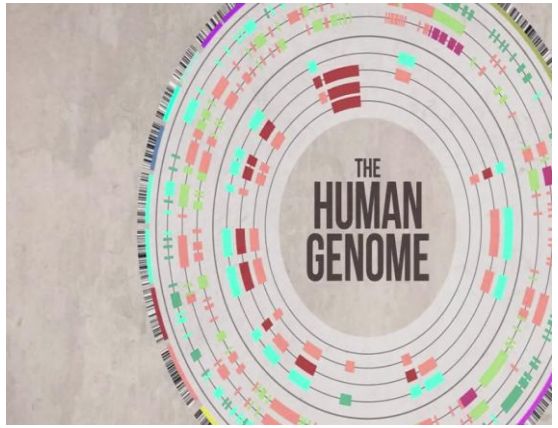
DEFINATION



- The human genome is the complete set of nucleic acid sequences for humans , encoded as DNA within the 23 chromosome pairs in cell nuclei and in small DNA molecule found within individual mitochondria.

- GENOME – the hole hereditary information of an organism that is encoded in DNA

THE AIMS OF THE PROJECT :-



- To identify the approximate 100,000 genes in the human DNA
- Determine the sequences of the 3 billions bases that make up human DNA
- Store this information in databases .
- Develop tools for data analysis.
- Address the ethical legel and social issues that arise from genome research

Genome mapping methods can be divided into two categories-

- GENETIC MAPPING - Uses genetic techniques to construct maps showing the positions of genes and other sequences features on a genome .Genetic techniques include cross breeding experiments or in the case of humans the examination of family histories.

- PHYSICAL MAPPING -Uses molecular biology techniques to examine DNA molecules directly in order to construct maps showing the positions of sequence features , including genes.

BENEFITS

- Improvements in medicine.
- Microbial genome research for fuel and environmental clean-up.
- DNA forensics.
- Improved agriculture and livestock.
- Better understanding of evolution and human migration .
- More accurate risk assessment.

ACHIEVEMENTS

- In June 2000 , scientist indicated that the human genome consists of about 20,000-25,000 genes though it was earlier thought to be 80,000 to 1,00,000 .
- Genome of yeast has been studied and sequenced and it is found to comprise 16 chromosomes and is about 12,500kb in size.
- Genomes of both plants and animals are being intensively mapped and sequenced . The genome of the Basmati rice has been sequenced recently.

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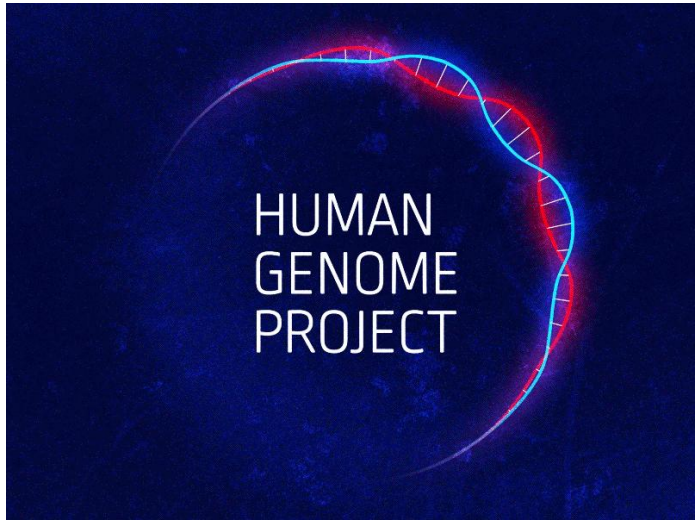

THANK YOU !