

# Essay on human genome project

[Science](#), [Genetics](#)



The Human Genome Project has been developed by the collaboration of US Department of Energy and National Institute of Health, in order to determine the basic building pairs of human DNA which exist in a sequence. Thus in this way, scientist would become able to identify different stages of human evolution with the help of a process known as transcript mapping. This mapping includes identification of those genes which are protein encoded and converts themselves into messenger RNAs during the event of expressing. In this way, they can be separated in the form of complementary DNAs and can be further used for the process of scientific research over human biology, difference from other living organisms and human pathology. Mainly, the purpose of this project is to identify those genes which cause diseases amongst the humans and by identifying them, appropriate and specific treatment could be suggested. Moreover, scientists would become able to identify those specific patterns which can provide an insight into possible emerging properties. Speaking concisely, the main objective of this research project is to understand the overall genetics of humans (NCBI, n. d).

There can be a number of advantages and benefits of HGP in the field of human genetics and biology. It achieved a 99.99% accuracy regarding findings and assessment of sequences of human genomes and thus proved its significance in the field of genetics and biotechnology. HGP has been identified as a milestone in understanding the diseases sequences of human DNAs which could be helpful in providing treatment even during the most initial stages. Genes who carry viruses of Malignancy, Fibrosis, Hemostasis, Alzheimer's disease and other such diseases can be identified which can

certainly enable scientists and medical researchers to identify treatments and to save humanity from these adverse diseases in future. Already the findings from the project have revealed several interesting information about human genetics, such as the total number of genes in humans is 20, 500 which are nearly identical and repeated. However, it is also revealed that except for cloned organisms and by birth twins, the gene sequence of all humans is unique. From these findings, it would become easier to research over a specific group of genomes and to make further helpful descriptions about them. Apart of its advantages in the field of medical science, HGP can also be helpful in forensic science; identifying the exact criminal and minimizing chances of suspicion and leniency. Thus by acquiring this knowledge and expertise, such significant information could be revealed about human biology which was unknown and hidden in the past (Toriello, 2003).

Apart of these advantages of HGP in the field of medical science, several questions arise on the ethical liability and fairness of this project. Issues of genetic engineering and cloning which are sensitive in nature are of particular concern by different sectors of society. Questions arises over the use and misuse of genetic information, such as who will be allowed to the information and what can be said about the correct use of this information by the authorities. More importantly, from where this information would be generated and who is the regulatory authority over it? Do the authorities make it clear before dispensing the information that it would not be misused and would be kept private and confidential? Does the information would be revealed to general public, particularly to patients in clinical settings? If

anyone comes to know about the genetic differences, particularly of other ethnicities, what impact this would have over minorities and how would the people of the society react with each other? If people come to know about their bad behavioral genes, would they become able to control themselves? The most serious issue is of reproductive techniques in this field, such as embryonic stem cell research, fatal genetic testing and their limitations (HGPI, 2011). Orthodox religious sectors are strictly in opposition with this research, however, in my sole point of view, this project has opened several new horizons over mankind and by properly addressing the ethical and moral issues, this and other such kind of projects must be allowed to benefit mankind in the best possible way.

However, if used unethically and inappropriately, the technology can certainly bring a disaster for mankind. For example, if the scientists are allowed to make use of this technique in which way they want, they may produce several clones and copies which do not get a legitimate status in the society. There are also chances that by acquiring knowledge about the DNAs which cause ethnic differences, a particular type of ethnicity is produced continuously in order to minimize and reinforce others. Therefore, the government of US must keep the information as much secret as possible and no one must be allowed to misuse it. US government has set up 5% of annual budget for the sake of satisfying all those ethical, social and legal issues which arise from the HGP. Thus as much as this project is helpful to mankind, it is sensitive and must be addressed on a governmental level, so as to ensure maximum protection of genetic information and to keep safe the entire mankind (Ejelonu, 2002).

## **References**

Ejelonu, A. (2002). What is the Human Genome Project? Why Is It Important to Society? Retrieved on June 26, 2013 from:

HGPI: Human Genome Project Information. (2011). Ethical, Legal, and Social Issues. US Department of Energy. Retrieved on June 26, 2013 from:

NCBI: National Centre for Biotechnological Information. (n. d). A Gene Map of the Human Genome. Retrieved on June 26, 2013 from:

Toriello, J. (2003). The Human Genome Project. New York: Rosen Pub. Group.