

Genetic Engineering:

Advantages & Disadvantages

The process of genetic engineering involves splicing an area of a, a gene, that controls a certain of the body. The enzyme endonuclease is used to split a DNA sequence and split the gene from the rest of the chromosome. For example, this gene may be programmed to produce an antiviral protein. This gene is removed and can be placed into another For example, it can be placed into a bacteria, where it is sealed into the DNA chain using ligase. When the chromosome is once again sealed, the is now effectively re-programmed to replicate this new antiviral protein. The bacteria can continue to live a healthy life, though genetic engineering and human has actively manipulated what the bacteria actually is. Genetic engineering is rapidly becoming part of our everyday world, and yet whilst there is no doubt that there are advantages, but there are also with the process too.

disadvantages	characteristic	organism	chromosome	intervention	bacteria
---------------	----------------	----------	------------	--------------	----------

Consequence of genetic engineering	Advantage	Disadvantage
Genetic engineering borderlines on many moral issues, particularly involving religion, which questions whether man has the right to manipulate the laws and course of nature.		
Disease could be prevented by detecting people/plants/animals that are genetically prone to certain hereditary diseases, and preparing for the inevitable.		
Animals and plants can be 'tailor made' to show desirable characteristics. Genes could also be manipulated in trees for example, to absorb more CO ² and reduce the threat of global warming.		
Infectious diseases can be treated by implanting genes that code for antiviral proteins specific to each antigen.		
Nature is an extremely complex inter-related chain consisting of many species linked in the food chain. Some scientists believe that introducing genetically modified genes may have an irreversible effect with consequences yet unknown .		
Genetic Engineering could increase genetic diversity, and produce more variant alleles which could also be crossed over and implanted into other species. It is possible to alter the genetics of wheat plants to grow insulin for example.		

Information taken from http://www.biology-online.org/2/13_genetic_engineering.htm