

A Brief Note on Genetic Engineering

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Introduction

Genetic engineering, also known as genetic alteration or gene modification, is the use of biotechnology to directly manipulate an organism's genes. This is a set of technologies used to alter the genetic structure of cells, such as gene delivery within and throughout species boundaries, in order to generate enhanced or novel microbes. New DNA is created by separating and trying to copy the genetic information of interest utilizing dna Recombinant methods or by synthesizing the DNA artificially. Typically, a structure is formed and then used to insert this Genome into the host organism. Paul Berg created the first recombinant Dna in 1972 by incorporating DNA from of the monkey virus SV40 with DNA from the lambda virus. In addition to inserting a gene, the method could be used to remove or delete genes can be "knocked out." The new DNA can be implanted at irregular intervals or specifically focused on a specific region of the genome, A genetic modification (GM) organism is one that is created through genetic engineering, and the eventually results entity is a genetically modified organism (GMO). Herbert Boyer and Stanley Cohen created the first GMO in 1973 with a bacterium. In 1974, Rudolf Jaenisch formed the very first GM animal by inserting foreign DNA into a mouse. Genentech, the first company to focus on genetic engineering, was established in 1976 and began

producing human proteins. Human insulin was genetically modified in 1978, and insulin-producing bacteria were commercialized in 1982. That since discharge of the Flavr Savr tomato in 1994, genetically modified food has been available to buy. The Flavr Savr was designed to have a longer shelf life, but the majority of the current GM crops are not modified to enhance insect and herbicide tolerance GloFish, the very first GMO formed to be used as a pet, was launched in the United States in December 2003. Salmon that were genetically altered with a growth hormone have been sold in 2016. Genetic engineering was used in a wide range of applications, such as research, medicine, manufacturing biotechnology, and agriculture. GMOs are used in order to examine genetic mutations and expression via loss of function, gain of function, tracking, and expression experiments. It is possible to build animal study organisms of diseases by knocking out genetic traits responsible for specific circumstances. Genetic modification has the potential to cure genetic diseases through gene therapy, in addition to generating hormones, vaccines, as well as other drugs. The same methods used it to manufacture drugs could also be used to manufacture enzymes for laundry detergent, cheeses, as well as other products. The commercialization of genetically engineered plants has benefited farmers in so many various countries, but it's also been the source of much of the controversies surrounding the technology. Its been present ever since inception; anti-GM activists destructed the first field trials. Despite scientific consensus that presently offered food genetically modified (gm crops poses no greater hazard to public health than conventional food, critics are concerned about GM food security. Gene flow, the effect on non-target organisms, world's food regulates, and intellectual property have all been mentioned as possible concerns.

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