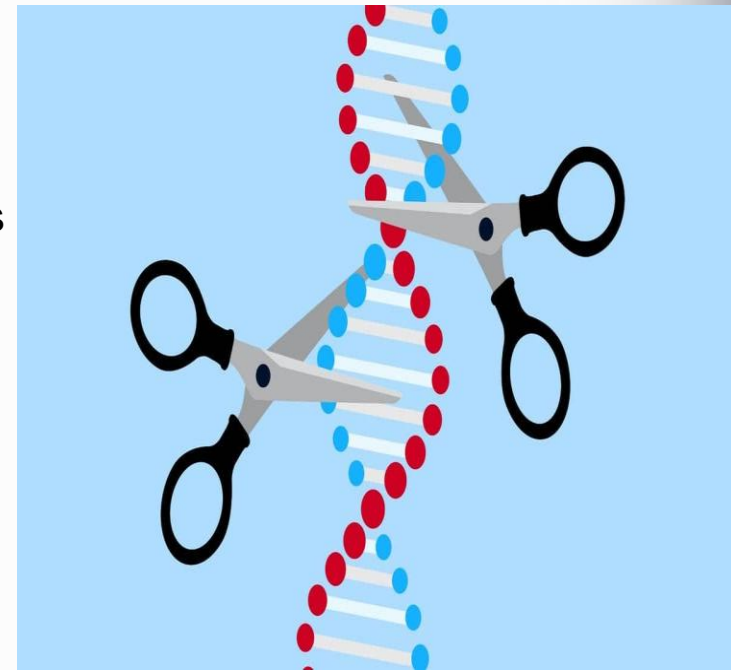


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Genome Editing

Genome editing is a method that lets scientists change the DNA of many organisms, including plants, bacteria, and animals. Editing DNA can lead to changes in physical traits, like eye color, and disease risk. Scientists use different technologies to do this. Overview Genome editing technologies enable scientists to make changes to DNA, leading to changes in physical traits, like eye color, and disease risk. Scientists use different technologies to do this. These technologies act like scissors, cutting the DNA at a specific spot. Then scientists can remove, add, or replace the DNA where it was cut. The first genome editing technologies were developed in the late 1900s. More recently, a new genome editing tool called CRISPR, invented in 2009, has made it easier than ever to edit DNA. CRISPR is simpler, faster, cheaper, and more accurate than older genome editing methods. Many scientists who perform genome editing now use CRISPR.



CRISPR Technology

CRISPR Technology is a simple yet powerful tool for editing genomes. It allows researchers to easily alter DNA sequences and modify gene function. Its many potential applications include correcting genetic defects, treating and preventing the spread of diseases and improving crops.

However, its promise also raises ethical concerns. In popular usage, "CRISPR" (pronounced "crisper") is shorthand for "CRISPR-Cas9." CRISPRs are specialized stretches of DNA. The protein Cas9 (or "CRISPR-associated") is an enzyme that acts like a pair of molecular scissors, capable of cutting strands of DNA.

DNA

DNA is the molecule that is the hereditary material in all living cells. Genes are made of DNA, and so is the genome itself. A gene consists of enough DNA to code for one protein, and a genome is simply the sum total of an organism's DNA.

What is genetic engineering?

Genetic engineering refers to the direct manipulation of DNA to alter an organism's characteristics (phenotype) in a particular way.