

# BIOCOTIDIE

## GENE EDITING



## WHAT IS GENE EDITING?

[What Is Gene Editing  
And How Does It Work?](#)

Genome editing (also called gene editing) is a group of technologies that give scientists the ability to change an organism's DNA. These technologies allow genetic material to be added, removed, or altered at particular locations in the genome. Several approaches to genome editing have been developed. The CRISPR-Cas9 system has generated a lot of excitement in the scientific community because it is faster, cheaper, more accurate, and more efficient than other existing genome editing methods. [Read More...](#)

## PROCESS OF GENE EDITING

[How CRISPR Works](#)

Gene editing is performed using enzymes, particularly nucleases that have been engineered to target a specific DNA sequence, where they introduce cuts into the DNA strands, enabling the removal of existing DNA and the insertion of replacement DNA. [Read More...](#)

## APPLICATIONS

Gene Editing is valuable for modelling diseases.

Genome editing tools are used to target genes or alter their function. Through these tools, investigators can study the cellular behavior and develop effective drug candidates for treating diseases.

Disease treatments that can be bettered with Gene Editing:

- Cancer
- Cardiovascular Diseases
- Metabolic Diseases
- Neurogenerative Diseases
- Viral Diseases
- Heredity Eye Diseases
- Hematological Diseases

Genome editing is a promising new approach for the treatment of diseases caused by defective genes. Since the ex-vivo genome editing of cells has been the most widely used method, it has been carried out in vitro. In the past couple of years, various clinical trials have been conducted in the US and China to develop effective treatments for diseases such as cancer. [Read More...](#) [Watch...](#)

## FUTURE PROSPECTS

- Cancer immunotherapy consisting of gene editing looks set to address the shortcomings of current CAR T designs.
- Through the concept of precision medicine, various drugs have been developed for the treatment of various diseases. Some of these targeted drugs are known to kill cancer cells without affecting normal tissues. Although molecular targeting may help patients respond to certain drugs, it is not ideal for everyone which is where Gene Editing comes in to bridge this gap.
- The cancer predisposition genes are known to cause an increased risk of developing cancer. The identification of these sensitive genes is critical to prevent cancer. Gene editing gave promising results in the early experiments and definitely looks on track to improve the identification. [Read More...](#) [Watch...](#) [Watch...](#)

