

Introduction

CRISPR-CAS9 is a revolutionary gene editing tool that allows scientists to precisely edit DNA sequences. It consists of two main components: CRISPR (Clustered Regularly Interspaced Short Palindromic Repeats) and CAS9 (CRISPR-Associated Nuclease 9).

The CRISPR array contains short DNA sequences called spacers, which are flanked by repeat sequences. These repeats are transcribed and processed into small RNA molecules (crRNA). The crRNA, along with a trans-activating crRNA (tracrRNA), forms a complex with the CAS9 protein. This complex then binds to a target DNA sequence, and CAS9 makes a precise cut in the DNA.