GENOMICS AND GENE EDITING

Gene editing is a group of technologies that give scientist the ability to change an organism's DNA.
These techonologies allow genetic material to be added,remove or altered at particular location in the Genome.

THE SCIENCE

1. Genome editing technologies-Zinc finger nucleases,TALENS and meganucleases-allmake use of genetically engineered version of naturally occuring restriction enzymes,that cut DNA at specific locations.

2. CRISPR/Case 9 is a powerful bacterial defence system that has been reprogrammed by scientist to edit genomes.

3. It is much more flexible system to design and control becaude the part that locates DNA sequence(RNA) is separate from the part that cuts.

HOE COULD IT HELP

Advancing disease reasearch

Revolutioning research through use in the development of new cell and animal models. Some mouse models can now be created im months using editing compared to 1-2 years previously.

Medical Applications

Genome editing of non-sex cell could treat a range of genetic disease, last year a one year
old girl advanced acute lymphoblastic lcukemia was successfully treated using gene edited T cells.