

## ‘Molecular scalpel’: Gene-editing technique promises greater precision

A scientific team from the Novo Nordisk Foundation Center for Protein Research (NNF-CPR), at the University of Copenhagen, has succeeded in visualizing and describing how a new system for genome editing, known as Cpf1, works. This protein belongs to the Cas family and enables the cleavage of double stranded DNA, thus allowing the initiation of the genome modification process. Guillermo Montoya, a researcher in the fields of biochemistry and molecular biology who led the study, explains that the new molecular scissors “will enable us to more safely modify and edit the instructions written in the genome, due to the utmost precision of the target DNA sequence recognition.”

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Researchers across the world are trying to perfect this genome editing technique with the aim of making it yet more precise and efficient. To achieve this, they have also focused on other proteins that specifically cut DNA, such as Cpf1, whose manipulation can direct them to specific locations in the genome. Montoya’s team has achieved this using X-ray Crystallography to decipher the molecular mechanisms controlling this process.

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In his opinion, “the main advantage of Cpf1 lies in its high specificity and the cleaving mode of the DNA, since it is possible to create staggered ends with the new molecular scissors, instead of blunt-ended breaks as is the case with Cas9, which facilitates the insertion of a DNA sequence.”

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These properties make this system “particularly suitable for its use in the treatment of genetic diseases and tumours,” he affirms.

**The GLP aggregated and excerpted this blog/article to reflect the diversity of news, opinion, and analysis. Read full, original post: [New Molecular Scalpel Acts as GPS to Improve Genetic Editing](#)**