# Article information:

Programmed DNA destruction by miniature CRISPR-Cas14 enzymes - PubMed  
<https://pubmed.ncbi.nlm.nih.gov/30337455/>

# Article summary:

1. CRISPR-Cas14 is a family of exceptionally compact RNA-guided nucleases that can target single-stranded DNA (ssDNA) without restrictive sequence requirements.

2. Cas14 proteins are capable of targeted single-stranded DNA cleavage and can be used for high-fidelity single-nucleotide polymorphism genotyping (Cas14-DETECTR).

3. Metagenomic data suggests that multiple CRISPR-Cas14 systems evolved independently, providing evidence for the potential evolutionary origin of single-effector CRISPR-based adaptive immunity.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article provides an overview of the newly discovered miniature CRISPR systems from uncultivated archaea, which contain Cas14, a family of exceptionally compact RNA-guided nucleases. The article is well written and provides detailed information about the capabilities of Cas14 proteins in terms of their ability to target ssDNA without restrictive sequence requirements and their use for high fidelity single nucleotide polymorphism genotyping (Cas14-DETECTR). The article also presents metagenomic data that suggests multiple CRISPR-Cas14 systems evolved independently, providing evidence for the potential evolutionary origin of single effector CRISPR based adaptive immunity.

The article appears to be unbiased and does not appear to have any promotional content or partiality towards any particular point of view. It presents both sides equally and does not make unsupported claims or omit counterarguments. The authors provide evidence to support their claims and present possible risks associated with using Cas14 proteins. However, there is some missing evidence for certain claims made in the article, such as the claim that Cas14 proteins are capable of targeted ssDNA cleavage without restrictive sequence requirements, which could have been further supported by additional experiments or data. Additionally, there is some missing points of consideration regarding the potential implications or applications of this discovery that could have been explored further in the article.

# Topics for further research:

* Cas14 protein applications
* Cas14-DETECTR genotyping
* CRISPR-Cas14 evolutionary origin
* Metagenomic data analysis
* Single effector CRISPR adaptive immunity
* Targeted ssDNA cleavage mechanisms

# Report location:

<https://www.fullpicture.app/item/60c982224f65159758615cfe32203e5d>