# Article information:

Superresolution intrinsic fluorescence imaging of chromatin utilizing native, unmodified nucleic acids for contrast | PNAS
<https://www.pnas.org/doi/10.1073/pnas.1602202113>

# Article summary:

1. This article presents a new technique for label-free superresolution nanoscopic imaging of macromolecular structures with nucleotide topologies.

2. This technique utilizes photoswitching of native, unmodified deoxyribonucleic acid (DNA) using visible light to facilitate the label-free nanoscale imaging of chromatin structures based on the principle of single-molecule photon localization microscopy (PLM).

3. This study paves a way for revealing nanoscopic features of chromatin without the need for exogenous labels and could substantially expand understanding of the structure–function relationship of chromatin.

# Article rating:

Appears well balanced: The article presents the information in a reliable and balanced way, without biases and prejudices. The claims made in the article are well supported and, where applicable, all sides of the argument are given opportunity to present their point of view. The article appears trustworthy and reliable.

# Article analysis:

This article is reliable and trustworthy in its presentation of a new technique for label-free superresolution nanoscopic imaging of macromolecular structures with nucleotide topologies. The authors provide evidence to support their claims, such as demonstrating sub–20-nm resolution, providing quantitative analysis of DNA occupancy level, and achieving nanoscopic imaging of interphase nuclei and mitotic chromosomes. The article also provides an extensive background on related techniques and research in this field, which further supports its reliability.

The article does not appear to have any potential biases or one-sided reporting; it presents both sides equally by discussing traditional superresolution techniques that require exogenous labels as well as the new technique presented in this study that does not require labels. Additionally, there are no unsupported claims or missing points of consideration; all claims are supported by evidence from experiments conducted by the authors or other studies mentioned in the article. Furthermore, all possible risks associated with this technique are noted in the discussion section.

In conclusion, this article is reliable and trustworthy due to its thorough presentation and support for its claims through evidence from experiments conducted by the authors or other studies mentioned in the article.

# Topics for further research:

* Label-free superresolution imaging
* Nucleotide topology imaging
* Sub-20 nm resolution
* Quantitative analysis of DNA occupancy
* Nanoscopic imaging of interphase nuclei
* Mitotic chromosome imaging

# Report location:

<https://www.fullpicture.app/item/2989f8847d0b445877b4fa23627ef59a>