# Article information:

Whole brain functional recordings at cellular resolution in zebrafish larvae with 3D scanning multiphoton microscopy | Scientific Reports
<https://www.nature.com/articles/s41598-021-90335-y>

# Article summary:

1. Zebrafish larvae are a suitable model organism for investigating the underlying circuit mechanisms of neuronal activity across the brain.

2. Recent advances in protein engineering and imaging technologies have enabled high sensitivity recordings of physiological events with cellular resolution.

3. A novel hardware design has been developed to record neuronal activity across three dimensions of the brain, using an 8-kHz resonant scanner and an electrically tunable lens.

# 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 is generally reliable and trustworthy, as it provides a comprehensive overview of recent advances in protein engineering and imaging technologies that enable high sensitivity recordings of physiological events with cellular resolution in zebrafish larvae. The authors provide evidence for their claims by citing relevant research studies, which adds to the trustworthiness of the article. Furthermore, the authors present a novel hardware design for recording neuronal activity across three dimensions of the brain, which is described in detail and supported by evidence from previous studies.

However, there are some potential biases that should be noted. For example, while the authors discuss various approaches to imaging whole brain activity in zebrafish larvae (e.g., SPIM, SIM, LFM), they focus primarily on their own approach (i.e., using an 8-kHz resonant scanner and an electrically tunable lens). This could lead to a one-sided reporting of the available methods and may not present all sides equally or explore counterarguments to their approach. Additionally, while the authors provide evidence for their claims from previous studies, they do not provide any evidence for their own approach or discuss any possible risks associated with it. This could lead to an incomplete understanding of the potential benefits and drawbacks of this method compared to other approaches discussed in the article.

In conclusion, while this article is generally reliable and trustworthy due to its comprehensive overview of recent advances in protein engineering and imaging technologies as well as its detailed description of a novel hardware design for recording neuronal activity across three dimensions of the brain, there are some potential biases that should be noted such as one-sided reporting or lack of evidence/discussion regarding possible risks associated with this method compared to other approaches discussed in the article.

# Topics for further research:

* Protein engineering techniques
* Cellular resolution imaging
* SPIM imaging
* SIM imaging
* LFM imaging
* Electrically tunable lens technology

# Report location:

<https://www.fullpicture.app/item/2339b9b71a3f634f61ed6f29b951aad3>