# Article information:

Energy-dissipative supercomplex of photosystem II associated with LHCSR3 in Chlamydomonas reinhardtii | PNAS
<https://www.pnas.org/doi/full/10.1073/pnas.1222606110>

# Article summary:

1. Plants and green algae have a low pH-inducible mechanism in photosystem II (PSII) that dissipates excess light energy, measured as the nonphotochemical quenching of chlorophyll fluorescence (qE).

2. A mutant strain of the green alga Chlamydomonas reinhardtii called npq4 was recently reported to be qE-deficient and lack the light-harvesting complex stress-related protein 3 (LHCSR3).

3. The PSII supercomplex containing LHCSR3 exhibited a normal fluorescence lifetime at a neutral pH (7.5) but a significantly shorter lifetime at pH 5.5, which mimics the acidified lumen of thylakoid membranes in HL-exposed chloroplasts.

# 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 evidence for its claims and presents both sides of the argument equally. The authors provide detailed information on their research methods and results, which are supported by previous studies in the field. Furthermore, they discuss potential biases and risks associated with their findings, such as the possibility that other proteins may be involved in qE quenching or that other factors may affect qE induction in C. reinhardtii.

However, there are some points of consideration that are not explored in depth or missing from the article altogether. For example, while the authors discuss how LHCSR3 is involved in qE quenching, they do not explore how other proteins may also be involved or what role they might play in this process. Additionally, while they mention that qE induction requires prolonged exposure to HL or low CO2 levels in C. reinhardtii, they do not discuss what other environmental factors may influence this process or how these factors interact with each other to induce qE quenching.

In conclusion, while this article is generally reliable and trustworthy due to its evidence-based approach and balanced presentation of both sides of the argument, there are some points of consideration that could be further explored to gain a better understanding of qE quenching mechanisms in C. reinhardtii.

# Topics for further research:

* Proteins involved in qE quenching
* Environmental factors influencing qE induction
* Interaction between environmental factors and qE quenching
* Role of other proteins in qE quenching
* Effects of prolonged exposure to HL on qE induction
* Effects of low CO2 levels on qE induction

# Report location:

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