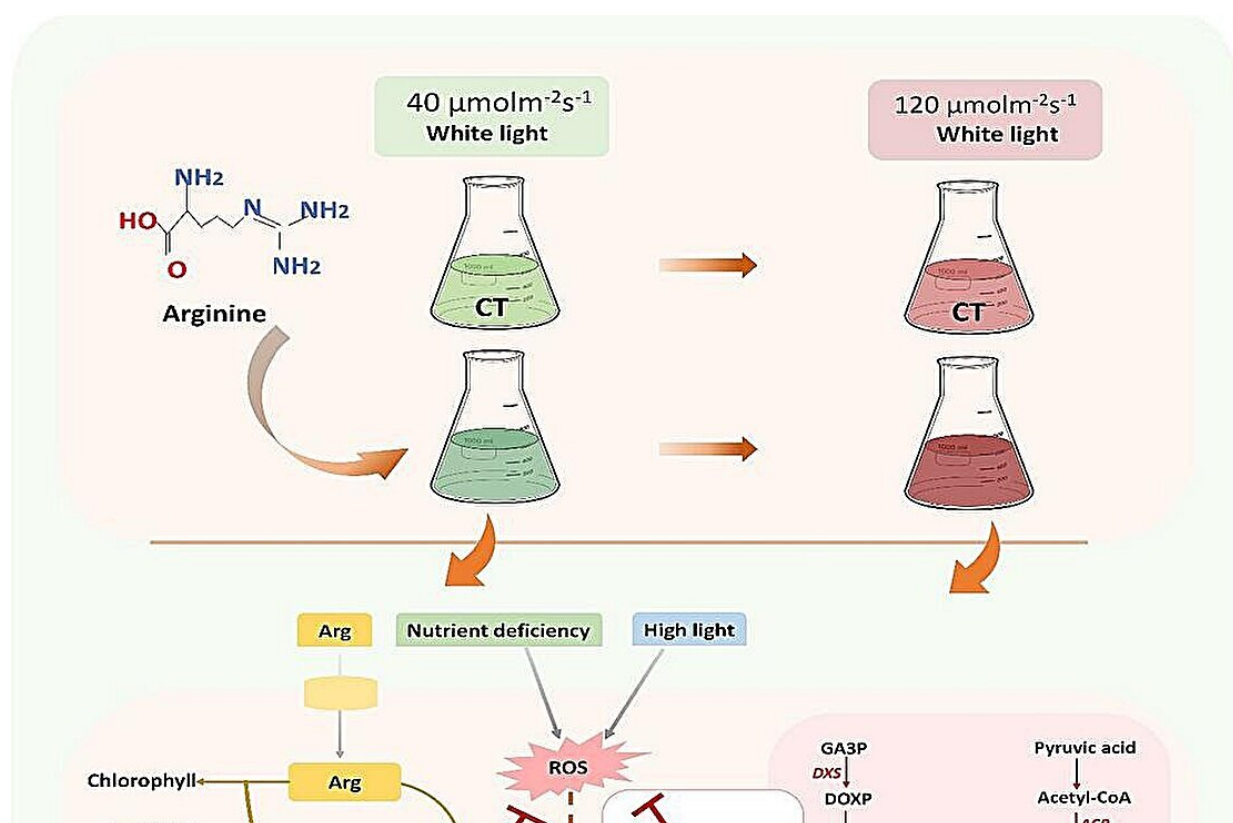


# Exogenous arginine promotes coproduction of biomass and astaxanthin in *Haematococcus pluvialis*

December 7 2023, by Zhang Nannan



Graphical abstract. Credit: *Bioresource Technology* (2023). DOI: 10.1016/j.biortech.2023.130001

Researchers led by Prof. Huang Qing from the Hefei Institutes of

Physical Science of the Chinese Academy of Sciences (CAS) have shown that arginine supplementation can improve the growth and astaxanthin production of *Haematococcus pluvialis* (*H. pluvialis*).

[The study](#) was published in *Biosource Technology*.

Astaxanthin is a potent ketocarotenoid, best known for its strong antioxidant properties. It has been used in food, pharmaceutical, medicinal, and cosmetic industries. *H. pluvialis* is one of the best natural sources of astaxanthin found in nature.

"We have been looking for an economical, faster and healthier way to produce astaxanthin in *H. pluvialis*," said Prof. Huang, "and this is what we found."

In this study, the researchers compared different substances that can help a type of algae called *H. pluvialis* grow and produce astaxanthin, a valuable compound. They discovered that arginine was one of the most effective and economical additives for this purpose.

Through this study, they found that arginine works by activating specific pathways in the algae, controlling certain [genes](#) related to [carotenoids](#) and lipids, improving how the algae uses [carbon](#), and increasing the expression of several genes involved in lipid and astaxanthin production. This combination of effects results in better [algae](#) growth, higher astaxanthin levels, and increased lipid production.

**More information:** Adolf Acheampong et al, Exogenous arginine promotes the coproduction of biomass and astaxanthin under high-light conditions in *Haematococcus pluvialis*, *Bioresource Technology* (2023). [DOI: 10.1016/j.biortech.2023.130001](https://doi.org/10.1016/j.biortech.2023.130001)

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