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Deletion of glycine decarboxylase in Arabidopsis is lethal under nonphotorespiratory conditions.

Engel N, van den Daele K, Kolukisaoglu U, Morgenthal K, Weckwerth W, Pärnik T, Keerberg O, Bauwe H

Plant Physiol 2007 Jul **144**(3):1328-35 [abstract on PubMed]
[citations on Google Scholar] [related articles] [FREE full text]

Selected by | Alisdair Fernie / Lee Sweetlove
First evaluation 25 Sep 2007 | Latest evaluation 26 Sep 2007
Relevant Sections

Faculty Comments

Faculty Member	Comments
Alisdair Fernie MPI-MP, Germany PLANT BIOLOGY Confirmation New Finding	**This paper presents compelling evidence for a non-photorespiratory function for glycine decarboxylase.** A double mutant of both isoforms of the P protein subunit of glycine decarboxylase is revealed to cause great problems in Arabidopsis, despite the fact that the single mutants were little altered from wild type. The fact that this mutation is lethal in the absence of photorespiratory conditions reveals that the enzmye must also contribute to other pathways of mitochondrial metabolism. **Competing interests:** None declared Evaluated 25 Sep 2007 How to cite this evaluation
Lee Sweetlove University of Oxford, United Kingdom PLANT BIOLOGY New Finding	**This paper demonstrates that glycine decarboxylase (GDC) has metabolic functions outside of its well-known role as a photorespiratory enzyme.** While such a role in C1 metabolism has been speculated upon, there has been no definitive proof. Here, it is shown that a GDC double mutant fails to develop beyond the cotyledon stage under non-photorespiratory conditions, clearly demonstrating that GDC is required for essential non-photorespiratory processes. **Competing interests:** None declared Evaluated 26 Sep 2007 How to cite this evaluation

Faculty Comments

How to cite the Faculty of 1000 Biology evaluation(s) for this paper

1) To cite all the evaluations for this article:

Faculty of 1000 Biology: evaluations for Engel N et al *Plant Physiol* 2007 Jul 144 (3) :1328-35 http://www.f1000biology.com/article/id/1091927/evaluation

2) To cite an evaluation by a specific Faculty member:

Alisdair Fernie: Faculty of 1000 Biology, 25 Sep 2007 http://www.f1000biology.com/article/id/1091927/evaluation

Lee Sweetlove: Faculty of 1000 Biology, 26 Sep 2007 http://www.f1000biology.com/article/id/1091927/evaluation