

SUPPRESSION OF BOTH ELIP1 AND ELIP2 IN *ARABIDOPSIS THALIANA* DOES NOT AFFECT TOLERANCE TO PHOTOINHIBITION AND PHOTOOXIDATIVE STRESS

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ELIPs (Early Light-Induced Proteins) are thylakoidal proteins transiently expressed during the early stage of greening and in mature plants exposed to photoinhibitory treatments. In addition it has been reported that ELIPs bind chlorophylls and lutein and, when constitutively expressed, confer resistance to photooxidation. So the current idea is that ELIPs have a photoprotective function. To test this hypothesis, we have generated *Arabidopsis thaliana* mutant plants null for the two *elip* genes present (*Elip1* and *Elip2*) and we have analyzed their sensitivity to a high light and cold treatment. Plants null for ELIPs have a normal phenotype when grown in standard condition, with only a slight reduction in the chlorophyll content (during the greening process but also in mature green plants) and a lower zeaxanthin accumulation in high light. More important however, the absence of ELIPs during high light stress did not modify the plant sensitivity to photoinhibition and photooxidation and the ability to recover from light stress. These results raise doubts about the photoprotective function of these proteins (Casazza *et al* (2005) *Plant Mol. Biol.* **58**:41-51; Rossini *et al*, submitted).