



**Fig. S1.** Leaf metabolism and characterization. (A) Starch production rate and sucrose pool size (SEM,  $n \geq 3$ ). Four-week-old plants were grown at  $200 \mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$ . Subsequent labeling experiments were performed near midday when plants exhibited pseudosteady state metabolism. (B) Leaf biomass and photosynthetic characterization acclimated to different light levels (SEM,  $n \geq 3$ ) for LL and HL-ACC conditions. High light resulted in an altered ratio of Chl a/b consistent with other reports (1). (C) Chloroplast ultrastructure imaged in TEM (Scale bars:  $2 \mu\text{m}$ .)

1. Athanasiou K, Dyson BC, Webster RE, Johnson GN (2010) Dynamic acclimation of photosynthesis increases plant fitness in changing environments. *Plant Physiol* 152(1):366–373.