



Figure 1

Light-induced hydroxyl radical formation in SD and LD leaf disks and washed thylakoid membranes in wild type and redoxin mutants. Generation of hydroxyl radicals originating from $O_2^{\bullet-}/H_2O_2$ was detected by spin trapping with 4-POBN. A: Typical EPR spectra of the 4-POBN/ α -hydroxyethyl adduct are shown. After infiltration with assay medium containing 4-POBN/ethanol/FeEDTA, leaf disks were incubated in the same medium for 30 min in light ($200 \mu\text{mol quanta m}^{-2}\text{s}^{-1}$) before detection of the radicals in the medium. Difference in EPR signal size for leaf samples (B) and thylakoid membranes (C). Thylakoid membranes ($20 \mu\text{g ml}^{-1}$) were illuminated for 2 min ($500 \mu\text{mol quanta m}^{-2}\text{s}^{-1}$) in the presence of the spin trapping assay before detection of the radical. Grey bars: SD, white bars: LD. All EPR signals were normalized to the signal of SD thylakoids without addition (100%). Mean values are shown ($n \geq 6$, biological replicates; *, $P < 0.05$ (comparison between SD and LD growth conditions for each genotype) according to Tukey test.