



Figure 8

Model of redox regulation of O₂ reduction at photosystem I. Reduced cysteine residues in PsaF favor higher O₂ reduction activity. The redox state of PsaF is modified by two thiol modulating redox systems. The first one is required for reduction of the disulfide bond, the second one for their oxidation. Trx m is a central player for controlling the reduction state of PsaF. Trx m is reduced by FTR. Under SD conditions, Trx m associates to the thylakoid membrane and reduces CCDA which reduces via HCF164 finally PsaF. In LD conditions, reduced PsaF is oxidized by LTO1, which itself is oxidized by CCDA (blue arrows). 2-Cys-PRX attaches to the membrane, allowing the oxidation of CCDA. In addition, it can oxidize Trx m (blue arrows).