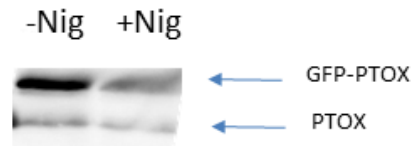
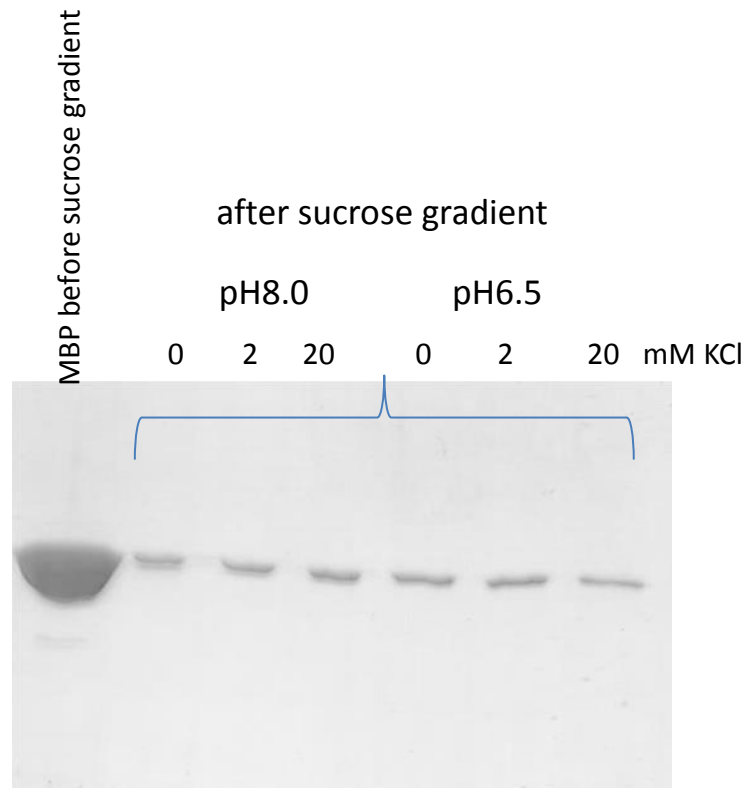


**Western Blot of leaf extract from *A. thaliana* overexpressing GFP:PTOX**



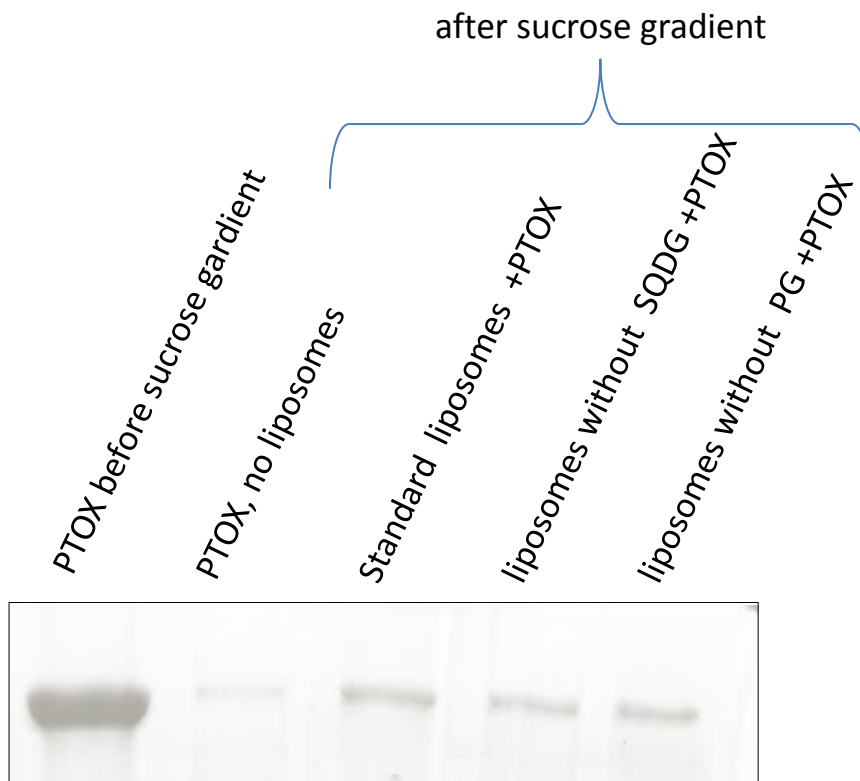
Leaves were exposed for 30 min to high light ( $500 \mu\text{mol photons m}^{-2}\text{s}^{-1}$ ) in the absence or presence of  $1 \mu\text{M}$  nigericin. Leaf extracts were centrifuged and the PTOX content of the membrane fraction was analyzed by SDS-PAGE and immunoblotting. Gels were loaded based on chlorophyll content ( $10 \mu\text{g Chl}$  per lane).

**MBP attachment to liposomes as a function of pH and salt concentration.**



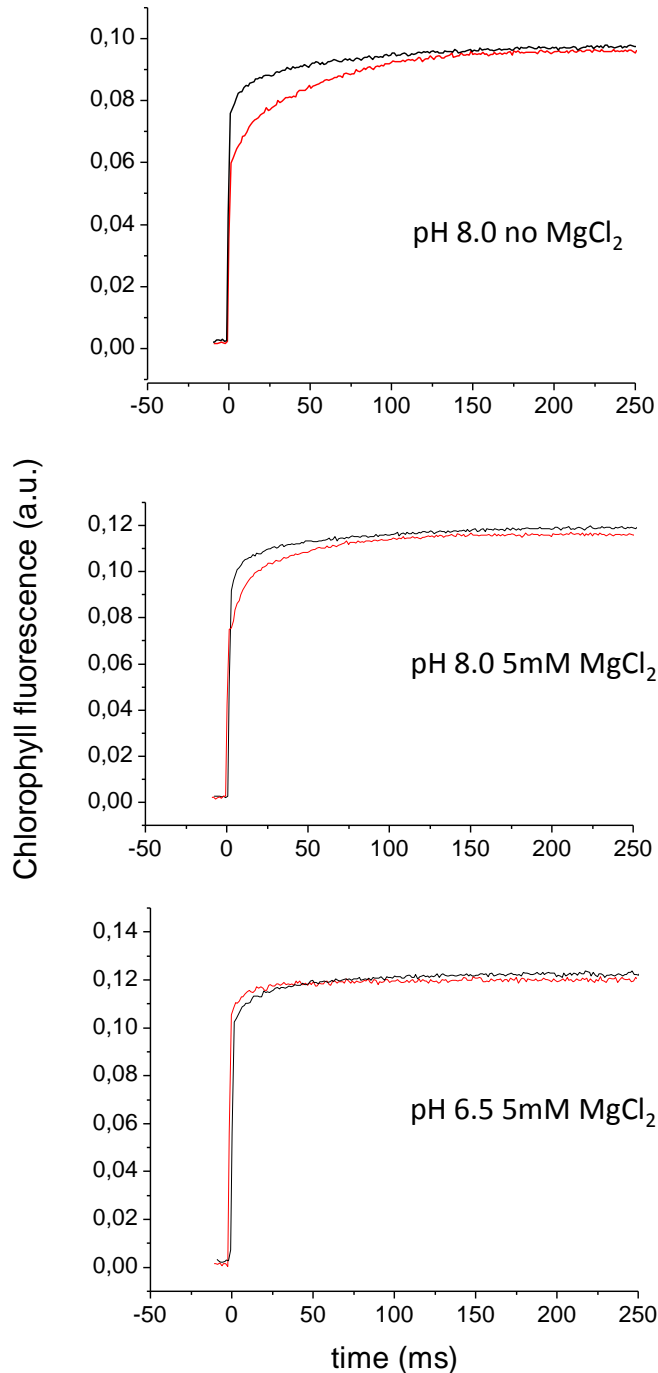
Purified recombinant MBP was adsorbed to liposomes. Not absorbed MBP was removed by centrifugation using sucrose gradients. MBP content was analyzed by SDS-Page and CBB staining. MBP attachment is shown at pH 6.5 and pH 8.0 in the presence of 2 and 20 mM KCl, respectively.

**PTOX attachment to liposomes as a function of lipid composition.**



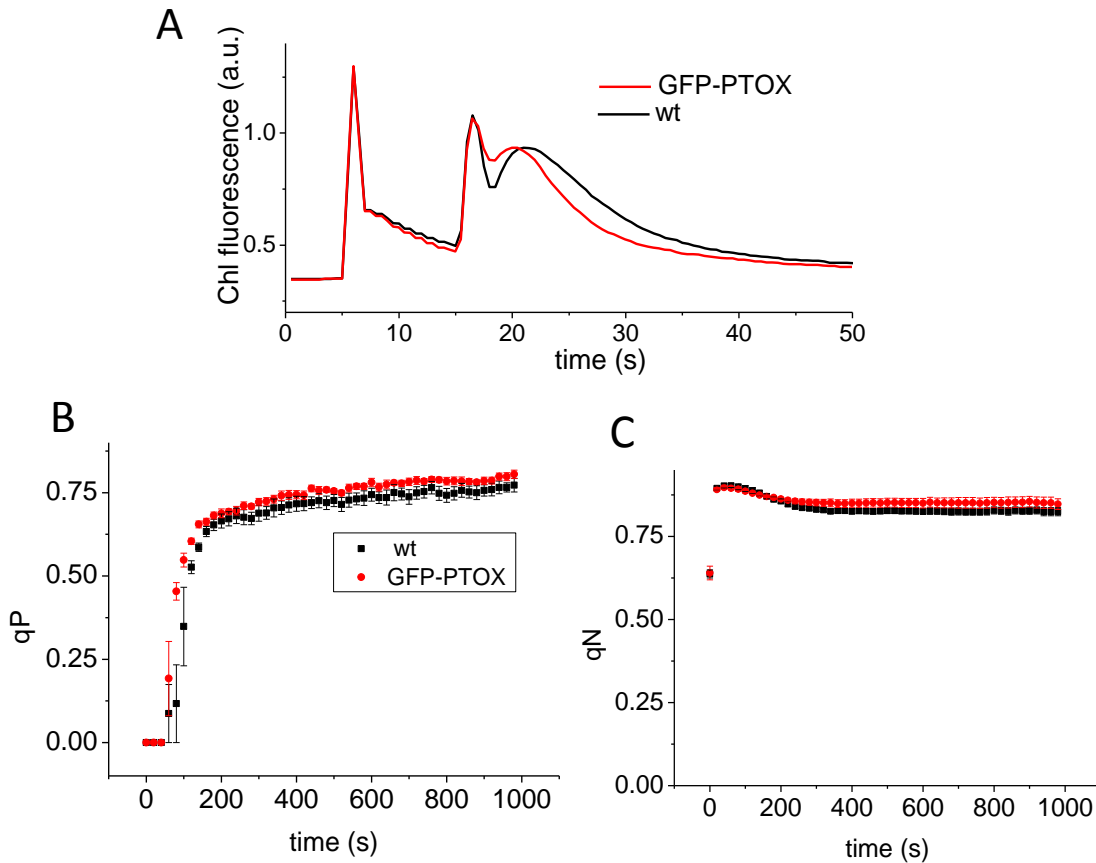
Purified recombinant MBP-OsPTOX protein (1  $\mu$ g protein) was adsorbed at pH 8,0, 2 mM KCl to three different types of liposomes : liposomes containing SQDG and PG, liposomes lacking SQDG or PG. Not absorbed PTOX was removed by centrifugation using sucrose gradients. PTOX content of the recovered liposomes was analyzed by SDS-Page and CBB staining.

**Effect of MBP-PTOX on chlorophyll induction curves in isolated thylakoid membranes.**



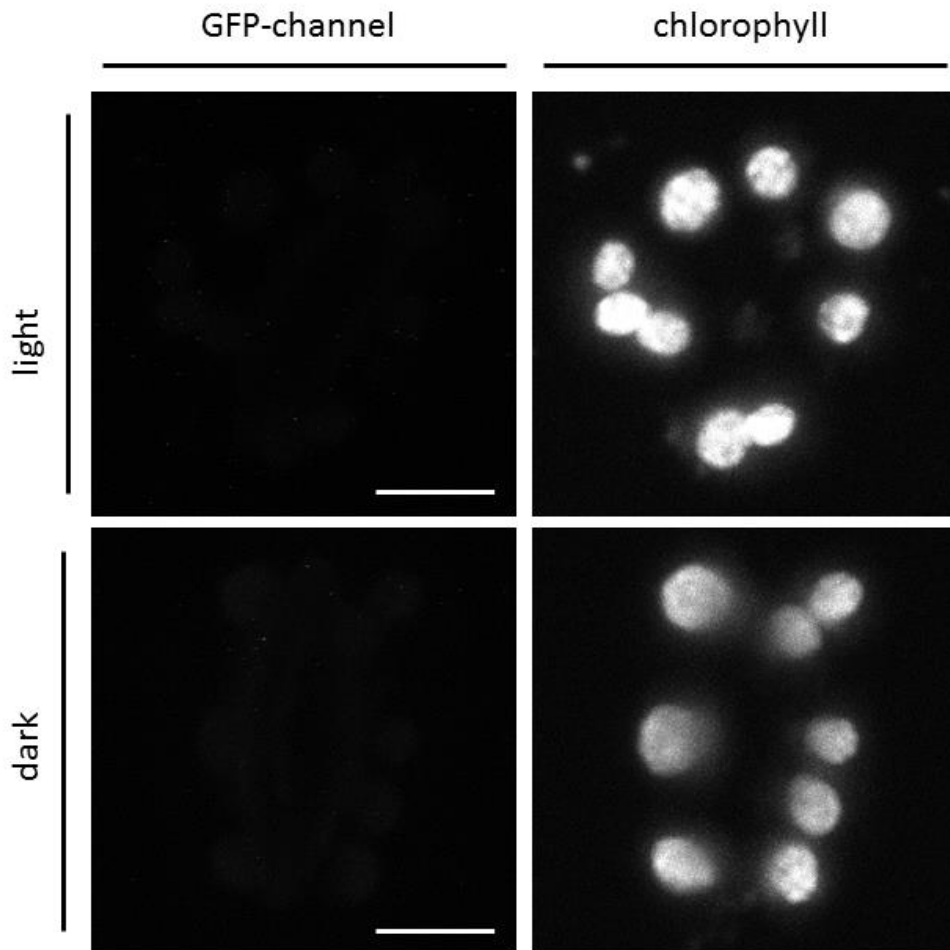
Thylakoid membranes ( $20 \mu\text{g ml}^{-1}$ ) were incubated at pH 8.0 or pH 6.5 with MBP-PTOX (red lines) or without PTOX (black lines) in the absence or in the presence of 5 mM  $\text{MgCl}_2$ . Prior to the measurement, samples ( $20 \mu\text{g chl ml}^{-1}$ ) without or with  $1.5 \mu\text{g ml}^{-1}$  MBP-OsPTOX (red lines) were dark-adapted for 1 min prior to the measurement. A multiple turnover flash (duration 300 ms) was switched on at  $t_0$ .

**Comparison of photochemical and non-photochemical quenching between wild type and GFP-PTOX expressing *A. thaliana*.**



A: Chlorophyll fluorescence measured with Dual-PA. 5 s: saturating light pulse; 15 s onset of actinic light ( $I=40 \mu\text{mol quanta m}^{-2}\text{s}^{-1}$ ); B photochemical quenching and C non-photochemical quenching measured with Imaging-PAM on 7 individual leaves from two plants of each genotype. Intensity of the actinic light:  $460 \mu\text{mol quanta m}^{-2}\text{s}^{-1}$ .

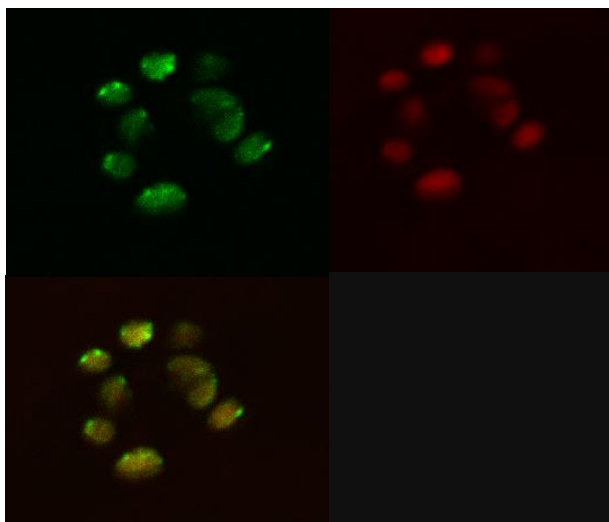
**Maximum-projection of a z-stack of confocal images of wild-type leaves.**



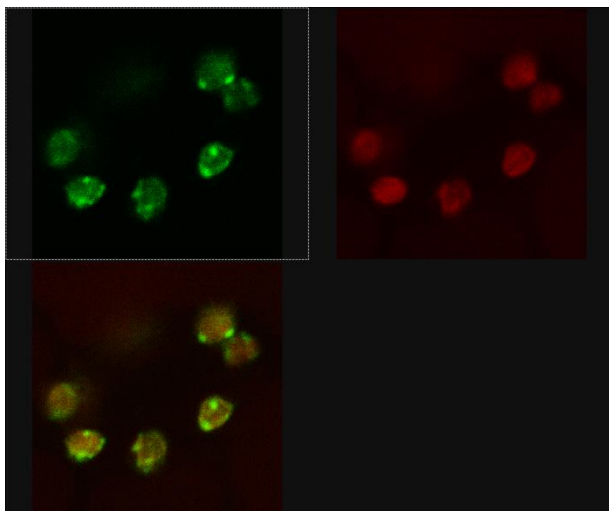
Leaves were exposed to red light ( $150 \mu\text{mol quanta m}^{-2}\text{s}^{-1}$ ) for 30 min prior to microscopy or left in the dark. Scale bar is 5  $\mu\text{m}$ . Note the absence of green auto fluorescence signal in the GFP-channel.

**Confocal fluorescence microscopy of guard cells of *A. thaliana* expressing GFP-PTOX.**  
Plants were dark adapted for 20 min before imaging.

Non-stressed plants

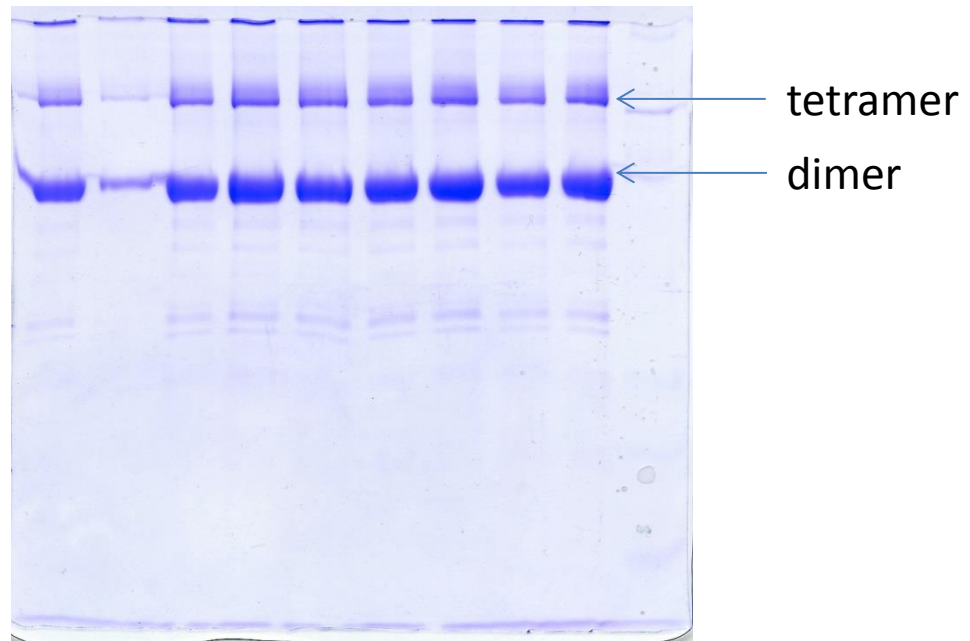


Plants high light stressed for 24 h  
(light intensity:  $1000 \mu\text{mol quanta m}^{-2}\text{s}^{-1}$  at  $15^\circ\text{C}$ )



Plants were dark adapted for 20 min before imaging.

**Oligomerization state of MBP-PTOX solubilized with  $\beta$ -dodecyl-maltoside.**



Purified MBP-PTOX was solubilized with 1,2%  $\beta$ -dodecyl-maltoside, separated on a native PAGE (8%), in which SDS was replaced by CHAPS in the sample buffer and in the gel. Proteins were stained with CBB.