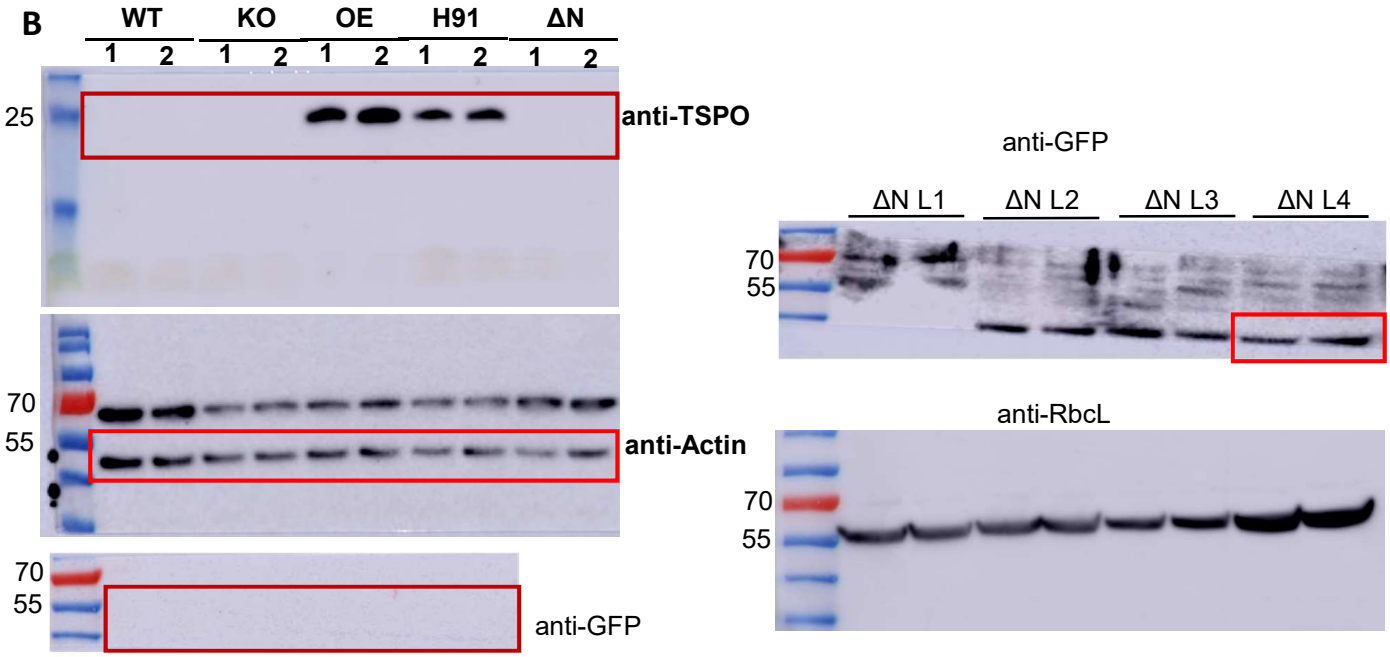
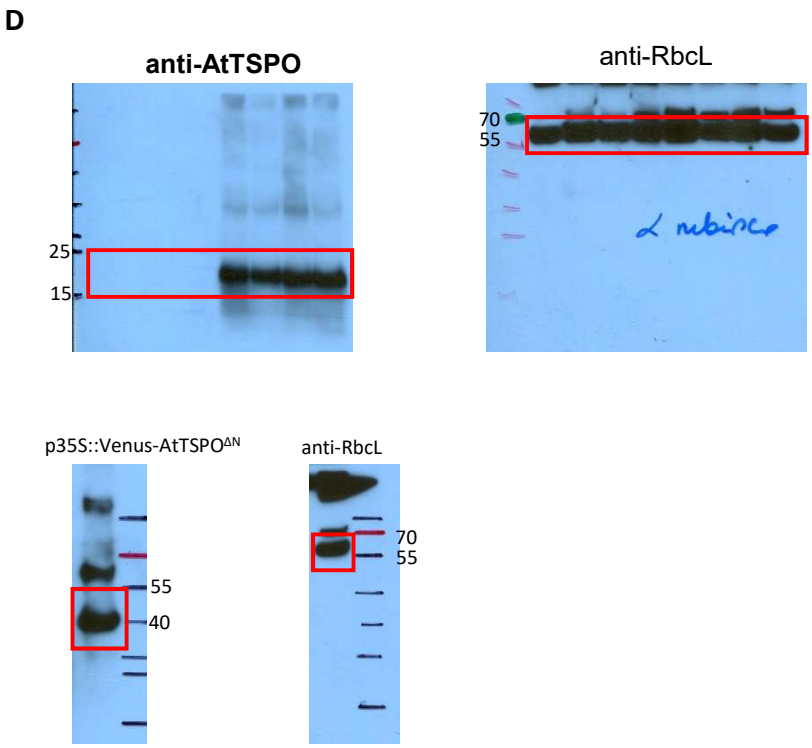
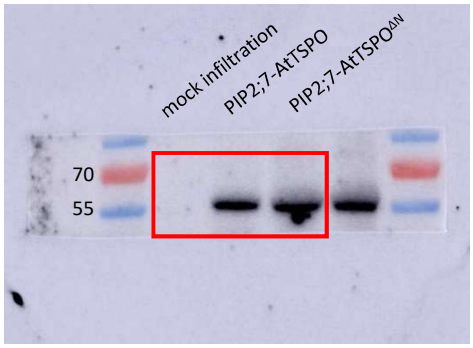
Original representative blots. Figure numbering in this section corresponds to the numbering used in the article.



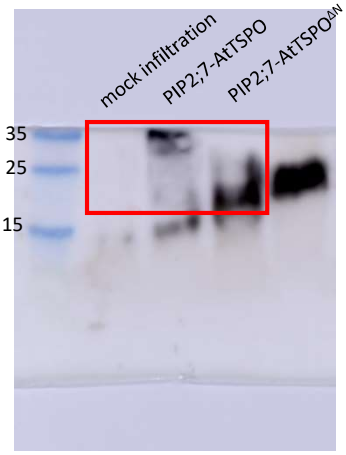


Data S1: Original blots used to prepare Figure 1. Arabidopsis plants expressing the N-terminus truncated AtTSPO are more affected by water loss as compared to plants overexpressing the full-length AtTSPO.

c



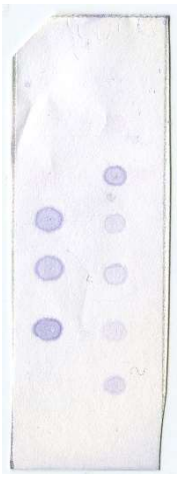
Venus$_N$-PIP2;7



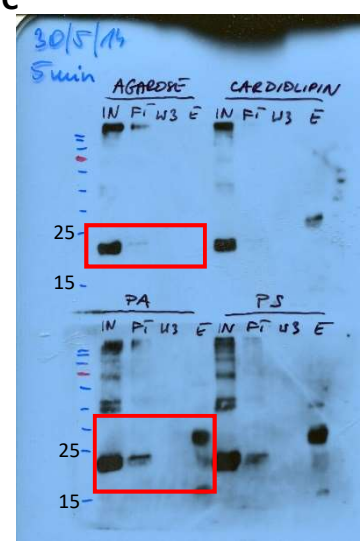
Venus$_C$-AtTSPO

Data S2: Original blots used to prepare Figure 2. The plant specific N-terminus extension of AtTSPO is required for AtTSPO interaction with the Arabidopsis PIP2;7 *in vivo*.

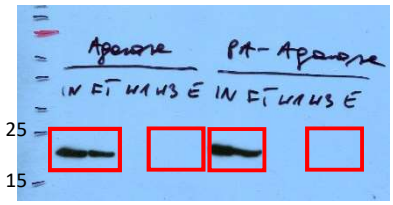
B



C

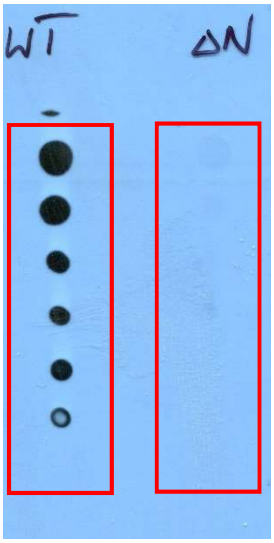


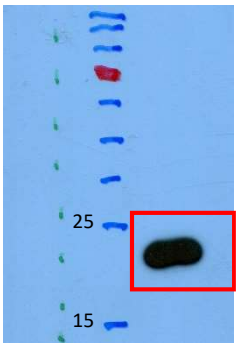
AtTSPO



AtTSPO$^{\Delta N}$

D



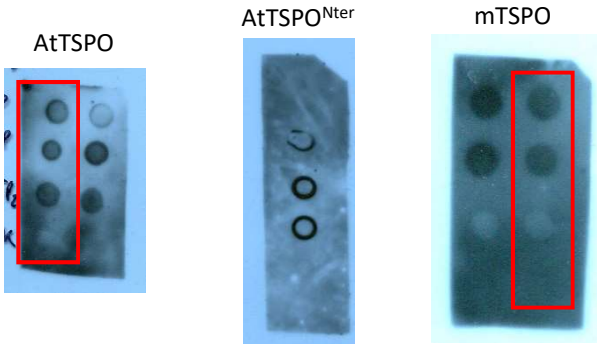


AtTSPO

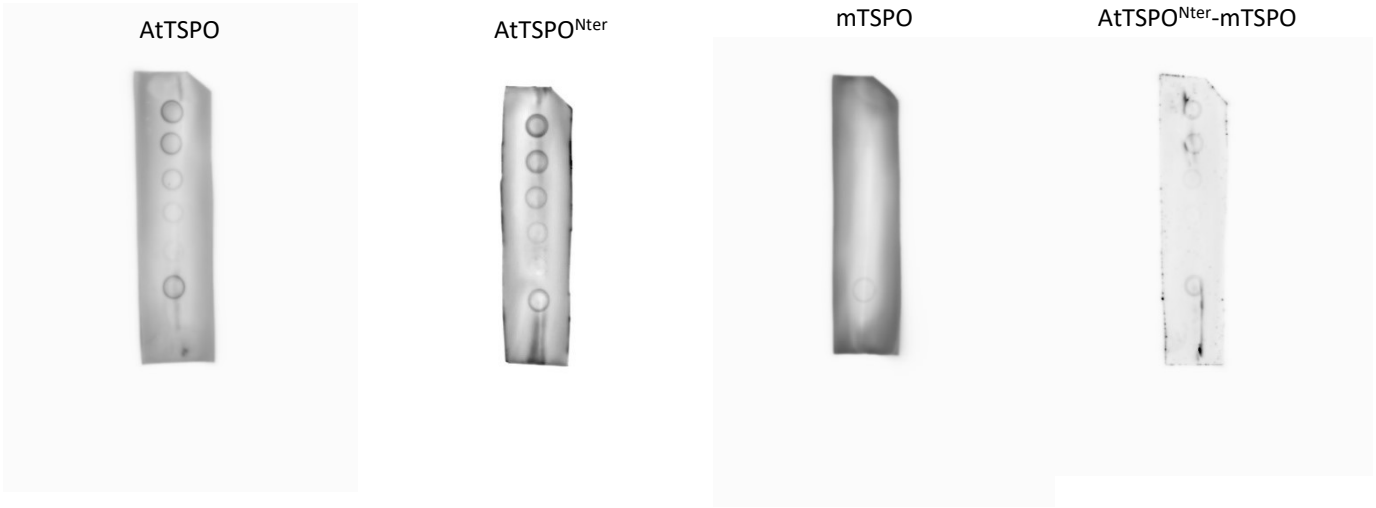
AtTSPO$^{\Delta N}$

Data S3: Original blots used to prepare Figure 3. Purified AtTSPO binds defined anionic lipids *in vitro* and the binding requires the N-terminal peptide.

B

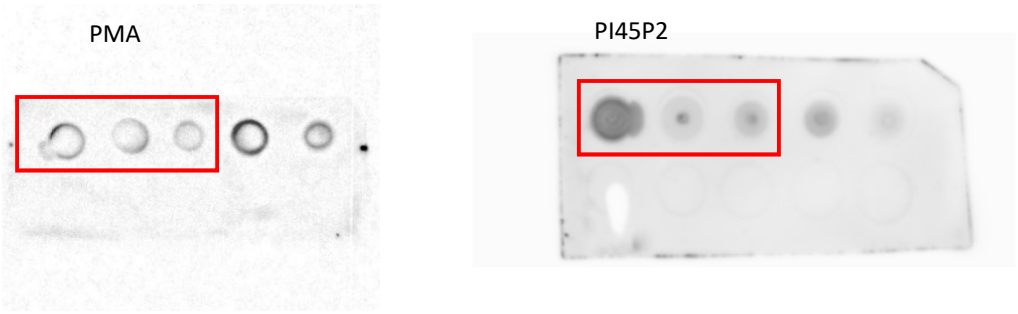


C



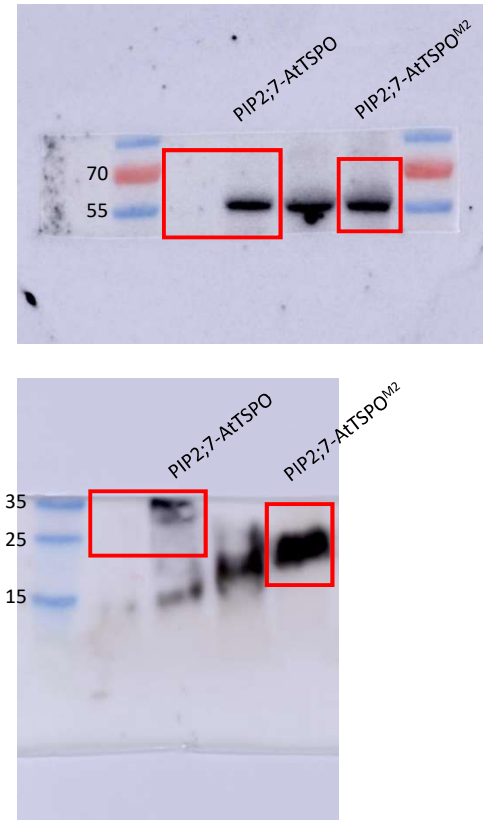
Data S4: Original blots used to prepare Figure 4. The AtTSPO N-terminal peptide is a PI(4,5)P_2 lipid binding moiety.

B

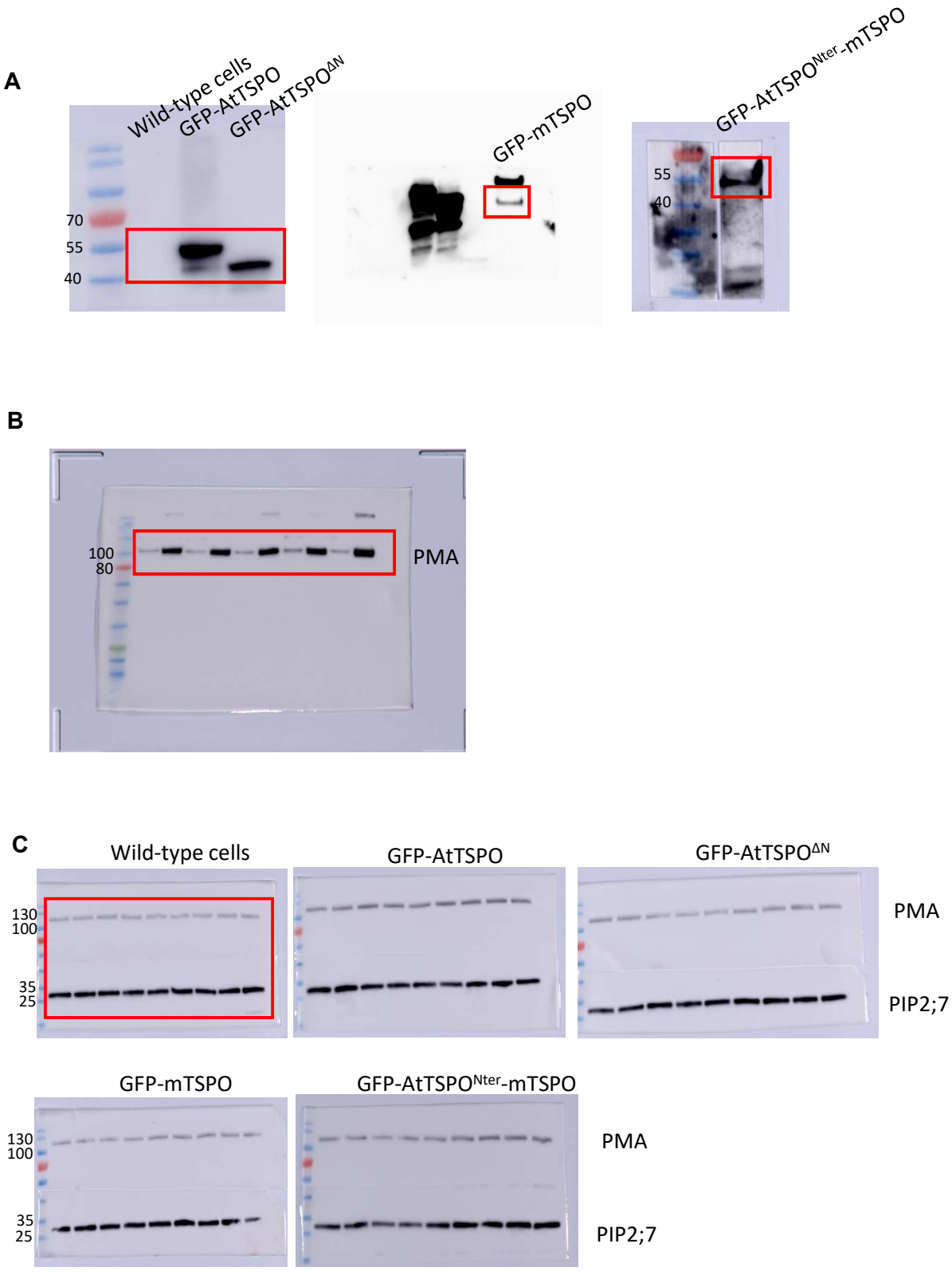


Data S5: Original blots used to prepare Figure 5. In presence of the full-length AtTSPO but not AtTSPO$^{\Delta N}$, the PI(4,5)P_2 biosensor was depleted from the plasma membrane and partially colocalized with AtTSPO in the Golgi membranes.

C

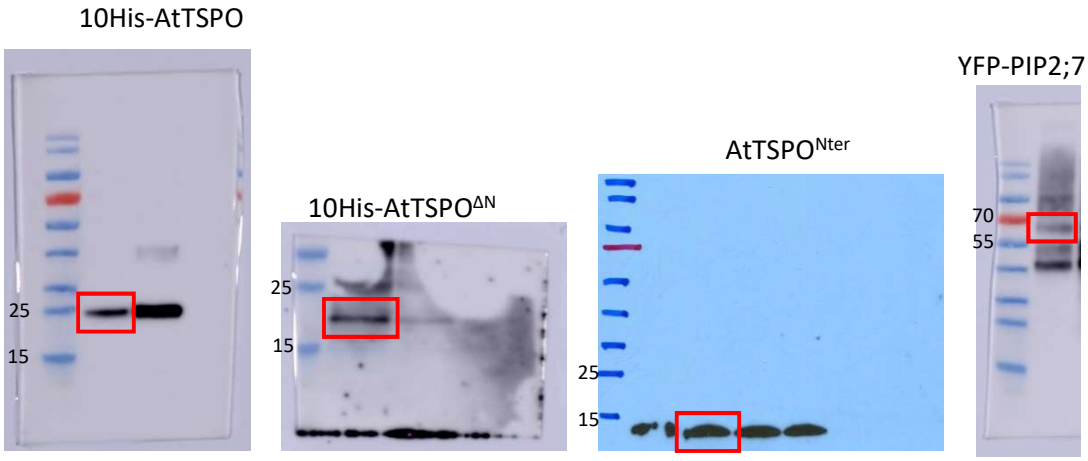


Data S6: Original blots used to prepare Figure S2. The first 20 amino acids of AtTSPO are required for AtTSPO interaction *in vivo* with PIP2;7.

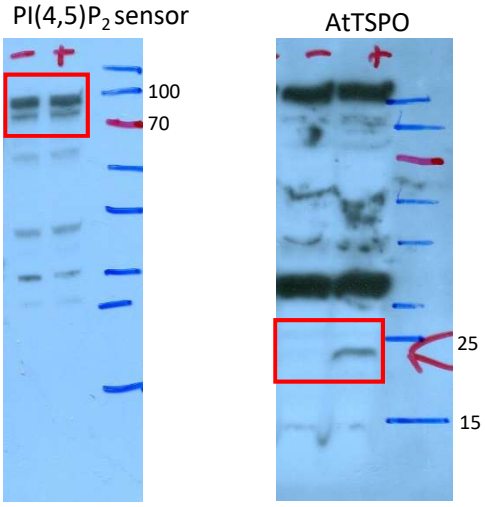


Data S7: Original blots used to prepare Figure S4. Representative western blots for PIP2;7 aquaporin signal quantification in the plasma membrane-enriched fractions.

Original blots used to prepare Figure S6. Isolated AtTSPO N-terminal peptide binds phospatidic acid (PA) *in vitro*.



Data S8: Original blots used to prepare Figure S7. Western blot performed on protein samples applied in thermophoresis experiments.



Data S9: Original blots used to prepare Figure S8. The PI(4,5)P_2 biosensor was depleted from the plasma membrane upon ABA treatment.