

Supplementary Table 1. A survey of PP2A subunits relevant to this review. Question marks refer to proposed, but not fully proven localizations.

Subunit	Plant	Subcellular localization	Functions in relation to drought/salt/ temperature stresses	References
Scaffolding (A) subunits				
A1 (RCN1)	<i>A. th.</i> , <i>T. ae.</i>	nucleus, MTs, plasma membrane, ER membrane?, cytosol/cytoplasm	• ABA-induced stomatal closure, regulation of ABA signaling at the plasma membrane and cytosolic levels • Responses to salt stress at multiple levels (e.g. plasma membrane, MTs) including regulation of PIN phosphorylation/ tissular auxin distribution • Promotion of ET signaling • Promotion of the UPR	Blakeslee et al., 2008; Yang et al., 2013; Waadt et al., 2015; Ko et al., 2023; Liu et al., 2026
A2	<i>A. th.</i>	nucleus, plasma membrane?, cytosol	• Necessary for HDA14 activity to regulate drought, salt and temperature stress • ET mediated activation of the auxin efflux carrier EIR1	Tran et al., 2012; Ueda et al., 2017; Shao et al., 2022
A3	<i>A. th.</i>	cytosol, membranes	• Regulation of ABA signaling as an interactor of OST1	Blakeslee et al., 2008; Waadt et al., 2015
Regulatory (B) subunits				
B α	<i>A. th.</i>	plasma membrane?	• Interacts with FERONIA kinase to maintain phosphorylated state of PIN3, which regulates auxin transport under salt/ osmotic stress	Liu et al., 2026
B β	<i>A. th.</i>	plasma membrane?	• During ET signaling, this subunit activates PP2A to promote auxin transport by EIR1 under stress	Shao et al., 2022
B' α , B' β	<i>A. th.</i>	nucleus, cytosol	• Interact with OST1: PP2A is inhibited during ABA signaling in an organ-dependent manner to maintain OST1 in an activated (phosphorylated) state	Waadt et al., 2015
Members of the B' η subfamily (B' γ , B' η)	<i>A. th.</i>	nucleus, cytosol	• B' η contributes to the dephosphorylation of PRP18 to promote splicing of heat-responsive pre-mRNA transcripts • Besides B'α, B'β, B'γ is an interactor of OST1	Konert et al., 2015b; Jo et al., 2022, 2025

B'' α	<i>T. ae.</i>	plasma membrane, nucleus, cytoplasm	Expressed mainly in roots; regulates root growth under osmotic and salt stress.	Liu et al., 2014
B''71	<i>G. max</i>	nucleus	Contributes to ROS elimination during drought/salt stress	Xiong et al., 2022
B'' FASS (TON2) and related TaPP2AbB''- γ	<i>A. th.</i> , <i>T. ae.</i>	nucleus?, MTs, cytosol, membranes?	- Regulates the phosphorylation of histone H2AX and H3 and of other, yet unknown substrates during oxidative stress. - Regulates cellular ROS content and Cu/Zn-SOD activity - The wheat homologue regulates osmotic/salt and cold stress responses.	Spinner et al., 2013; Liu et al., 2019; Freytag et al., 2023; Máthé et al., 2023; Garda et al., 2025; Kelemen et al., 2025a
TIP41/TAP46	<i>T. ae.</i>	nucleus, cytoplasm	Involved in the TOR pathway, they inhibit PP2A activity during ABA signaling.	Ahn et al., 2011; Punzo 2018; Ma et al., 2023
Catalytic (C) subunits				
Subfamily I: C2	<i>A. th.</i>	cytosol	Regulates ABA signaling in an organ-dependent manner (see information for the interactors A1, A3 and B'α, B'β above, in this Table).	Waadt et al., 2015
Subfamily II: C3, C4	<i>A. th.</i> , <i>T. ae.</i>	nucleus, MTs, plasma membrane, cytosol	- Regulates histone H3 and H2AX dephosphorylation during oxidative stress (together with FASS, see above). - Dephosphorylate α-tubulin to re-build MTs after recovery from salt stress. - Dephosphorylate PINs during salt stress to redistribute auxin. During ABA signaling, they may be inhibited to block PIN recycling (A1-C3/C4 complexes are affected, see above).	Spinner et al., 2013; Yoon et al., 2018; Li et al., 2020; Shao et al., 2022; Liu et al., 2026

Abbreviations: *A.th.*- *Arabidopsis thaliana*; ET- ethylene; *G. max* - *Glycine max*, soybean; HDA14- histone deacetylase 14; MT- microtubule, OST1- Open Stomata 1; ROS- reactive oxygen species; *T. ae.*- *Triticum aestivum*, wheat; TOR – Target of Rapamycin; UPR- unfolded protein response