Supplemental information

A guide to plant TPX2-like and WAVE-DAMPENED2-like proteins

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Table S1. Positions of conserved domains in *Arabidopsis* TPX2-family proteins.

Protein Name	SFG	Aurora-binding	TPX2 Signature	TPX2-C
WDL1				126-212
WVD2				86-172
WDL2				164-250
WDL3				193-279
WDL4				248-330
WDL5				206-292
WDL6				181-267
WDL7	22-72			329-390
WDL8	27-78			322-387
WDL9	34-84			403-461
TPX2		21-55	330-455	649-729
TPXL1/MDP60				376-456
TPXL2		31-65	259-376	
TPXL3		23-57	267-383	
TPXL4		30-75	221-321	
TPXL5				386-466
TPXL6/MAP20				72-152
TPXL7				210-290
TPXL8		20-59	209-325	
MDP40	22-72			

Supplemental Table 2. Functions of TPX2-family proteins.

Protein name	Functions	References
WDL1	Anisotropic cell expansion, organ twisting	(Perrin *et al.*, 2007; Yuen *et al.*, 2003)
WVD2	Anisotropic cell expansion, organ twisting	(Perrin *et al.*, 2007; Yuen *et al.*, 2003)
WDL2	Unknown	
WDL3	Anisotropic cell expansion in response to the light	(Lian *et al.*, 2017; Liu *et al.*, 2013)
WDL4	Unknown	
WDL5	Anisotropic cell expansion in response to ethylene in the dark, slat stress tolerance	(Dou *et al.*, 2018; Ma *et al.*, 2016)
WDL6	Unknown	
WDL7	Unknown	
WDL8	Unknown	
WDL9	Unknown	
TPX2	Activating Aurora kinase, nuclear envelope breakdown, mitotic spindle assembly	(Boruc *et al.*, 2019; Vos *et al.*, 2008)
TPXL1/ MDP60	Binds microtubules and contributes to anisotropic cell expansion in response to ethylene in the light, submergence stress tolerance	(Ma *et al.*, 2018; Tomastikova *et al.*, 2020; Wang *et al.*, 2020)
TPXL2	Microtubule targeting and activating Aurora kinase; mitotic spindle assembly	(Boruc *et al.*, 2019; Tomastikova *et al.*, 2020)
TPXL3	Microtubule targeting and activating Aurora kinase; mitotic spindle assembly	(Boruc *et al.*, 2019; Tomastikova *et al.*, 2020)
TPXL4	Localizes on microtubules and inside nucleus in *N. benthamiana* leaf pavement cells, activates Aurora kinase	(Tomastikova *et al.*, 2020)
TPXL5	Binds microtubules in *N. benthamiana* leaf pavement cells	(Tomastikova *et al.*, 2020)
TPXL6/ MAP20	Xylem size, vascular pits size and pit membrane thickness, drought tolerance	(Rajangam *et al.*, 2008a; Smertenko *et al.*, 2020)
TPXL7	Localizes in the cytoplasm and nuclear envelope in *N. benthamiana* leaf pavement cells	(Tomastikova *et al.*, 2020)
TPXL8	Localizes on microtubules and inside nucleus in *N. benthamiana* leaf pavement cells, activates Aurora kinase	(Tomastikova *et al.*, 2020)
MDP40	Anisotropic cell expansion in response to brassinosteroids in the dark	(Wang *et al.*, 2012)