

**Figure S4. Putative phosphorylation sites in aquaporins.** Ser residue in PIPs and Thr residue in TIPs aquaporins in loop B (A), loop D (B) and C-terminal (C) are tentative phosphorylation sites. Consensus sequences are framed and conserved residues are indicated as red triangle. Aquaporins cloned in the present study are marked with red arrows. Accession numbers of presented protein sequences are: *At*PIP1;2 (Q06611), *At*PIP1;4 (Q39196), *At*PIP2;1 (P43286), *At*-deltaTIP2 (CAB10515), *At*-gammaTIP3 (AAC62778), *At*-alphaTIP (AAC42249), *Fa*PIP2;1 (ADJ67992), *So*PIP2;1 (4JC6\_N), *VvPn*PIP1;1 (CAO41326), *VvTn*PIP1;1 (HQ913643), *VvPn*PIP1;4 (CAO39626), *VvTn*PIP1;4 (KJ697714), *VvPn*PIP2;1 (CAN75442), *VvTn*PIP2;1 (KJ697715), *VvPn*PIP2;2 (CAO47394), *VvTn*PIP2;2 (HQ913642), *VvPn*PIP2;3 (CAO18152), *VvTn*PIP2;3 (KJ697716), *VvPn*TIP1;1 (CAO69259), *VvTn*TIP1;1 (KJ697717), *VvPn*TIP2;1 (CAO45860), *VvTn*TIP2;1 (HQ913640), *VvPn*TIP2;2 (CAO23095), *VvTn*TIP2;2 (KJ697718), *VvPn*TIP4;1 (CAO44039), *VvTn*TIP4;1 (KJ697719), *Zm*PIP2;1 (Q84RL7), *Zm*PIP2;4 (Q9ATM6), *Zm*PIP2;5 (Q9XF58). *At*: *Arabidopsis thaliana*, *Fa*: *Fragaria x ananassa*, *Pv*: *Phaseolus vulgaris*, *So*: *Spinacia oleracea*, *VvPn*: *Vitis vinifera* cv. Pinot noir, *VvTn*: *V. vinifera* cv. Touriga nacional, *Zm*: *Zea mays*.

A

RK-X-S-XX-R/K

PIP1s	AtPIP1;2	LARKLSLTRAVY
	AtPIP1;4	LARKLSLTRAVF
	VvPnPPIP1;1	LARKLSLTRAVY
	VvTnPPIP1;1	LARKLSLTRAVY
PIP2s	VvPnPPIP1;4	LARKLSLTRAVF
	VvTnPPIP1;4	LARKLSLTRAVF
	ZmPIP2;1	LARKVSLVRALL
	FaPIP2;1	LARKVSLVRAVM
TIPS	SoPIP2;1	LARKVSLLRALV
	AtPIP2;1	LARKVSLPRALL
	VvPnPPIP2;1	LARKVSLIRAIL
	VvTnPPIP2;1	LARKVSLIRAIL
PIP1s	VvPnPPIP2;2	LARKLSLTRAVY
	VvTnPPIP2;2	LARKVSLIRALA
	VvPnPPIP2;3	LARKVSLVRAVM
	VvTnPPIP2;3	LARKVSLVRAVM
PIP2s	ZmPIP2;5	LARKVSLVRALL
	ZmPIP2;4	LARKVSLVRALL
	VvPnPPIP2;1	IGGHITLLRGIL
	VvTnPPIP2;1	IGGHITLLRGIL
TIPS	VvPnPPIP2;1	VGGQITILTGIL
	VvTnPPIP2;1	VGGQITILTGIL
	VvPnPPIP2;2	IGGHITILTGIF
	VvTnPPIP2;2	IGGHITILTGIF
PIP1s	VvPnPPIP4;1	VGGHITVVRSVL
	VvTnPPIP4;1	VGGHITVVRSVL
	At-deltaTIP2	VGGNITVITGFF
	At-gammaTIP3	IGGNITLLRAIL
TIPS	At-epsilonTIP	LGGHISVFR AFL
	Pv-alphaTIP	IGGRISVIRAVY

S/T

B

N/S-ARDSH

PIP1s	AtPIP1;2	KRNARDSH
	AtPIP1;4	KRSARDSH
	VvPnPPIP1;1	KRNARDSH
	VvTnPPIP1;1	KRNARDSH
PIP2s	VvPnPPIP1;4	KRNARDSH
	VvTnPPIP1;4	KRNARDSH
	ZmPIP2;1	KRNARDSH
	FaPIP2;1	KRSARDSH
TIPS	SoPIP2;1	KRSARDSH
	AtPIP2;1	KRSARDSH
	VvPnPPIP2;1	KRSARDSH
	VvTnPPIP2;1	KRSARDSH
PIP1s	VvPnPPIP2;2	KRNARDSH
	VvTnPPIP2;2	KRSARDSH
	VvPnPPIP2;3	KRNARDSH
	VvTnPPIP2;3	KRNARDSH
PIP2s	ZmPIP2;5	KRNARDSH
	ZmPIP2;4	KRSARDSH
	VvPnPPIP1;1	PKK---GN
	VvTnPPIP1;1	PKK---GN
TIPS	VvPnPPIP2;1	PKK---GS
	VvTnPPIP2;1	PKK---GS
	VvPnPPIP2;2	PKK---GS
	VvTnPPIP2;2	PKK---GS
PIP1s	VvPnPPIP4;1	AQKS--AH
	VvTnPPIP4;1	AQKS--AH
	At-deltaTIP2	PKK---GS
	At-gammaTIP3	PKK---GD
TIPS	At-epsilonTIP	PKK---GS
	Pv-alphaTIP	PKR---GA

S

S

C

K-K/X-XX-S-X-R/K-S

PIP1s	AtPIP1;2	PFKSRS-----
	AtPIP1;4	PFKSKS-----
	VvPnPPIP1;1	PFKSK-----
	VvTnPPIP1;1	PFKSK-----
PIP2s	VvPnPPIP1;4	PFKSRA-----
	VvTnPPIP1;4	PFKTRA-----
	ZmPIP2;1	AIKALGSFRSNA----
	FaPIP2;1	AVKALGSFRSNA----
TIPS	SoPIP2;1	AIKALGSFRSNPTN--
	AtPIP2;1	GSKSLGSFRSAAV--
	VvPnPPIP2;1	AVKALGSFRSTTHV--
	VvTnPPIP2;1	AIKALGSFRSTTHV--
PIP1s	VvPnPPIP2;2	PFKSK-----
	VvTnPPIP2;2	AIKALGSFRSNPTN--
	VvPnPPIP2;3	AVKALGSFKSSSHM--
	VvTnPPIP2;3	AVKALGSFKSSSHM--
PIP2s	ZmPIP2;5	AAK-LGSSASF SR---
	ZmPIP2;4	ATK-LGSYRSNA----
	VvPnPPIP1;1	T-----HEQLPTTDY-
	VvTnPPIP1;1	T-----HEQLPTTDY-
TIPS	VvPnPPIP2;1	D-----HQPLASSEF-
	VvTnPPIP2;1	D-----HQPLASSEF-
	VvPnPPIP2;2	Y-----ASVPTSDEYA
	VvTnPPIP2;2	Y-----ASVPTSDEYA
PIP1s	VvPnPPIP4;1	PHLRLPTRDEEEEEGF
	VvTnPPIP4;1	PHLRLPTRDEEEEEGF
	At-deltaTIP2	Y-----APAPTTESYF
	At-gammaTIP3	NG-----HEPLPSNDF-
TIPS	At-epsilonTIP	PHV--PVADDEQPLLN
	Pv-alphaTIP	EPPPHHHQPLATEDY-

S

S