

Table 1. The cation/proton antiporter (*CPAI*) genes involved in plant salt responses. TGN -*trans*-Golgi network, PVC - prevacuolar compartment.

Name	Gene ID in <i>Arabidopsis</i>	Subcellular localization	Tissue localization	Function	References
<i>NHX1</i>	At5g27150	tonoplast	roots and shoots, vasculature, guard cells	Na ⁺ (K ⁺)/H ⁺ antiporter, Na ⁺ /K ⁺ sequestration in vacuole, K ⁺ uptake for pressure potential	Yokoi <i>et al.</i> 2002, Shi and Zhu 2002, Aharon <i>et al.</i> 2003, Barragán <i>et al.</i> 2012, Andrés <i>et al.</i> 2014, Hamaji <i>et al.</i> 2009
<i>NHX2</i>	At3g05030	tonoplast	shoots and roots, meristems, guard cells	regulation and stomata function, vesicle trafficking	McCubbin <i>et al.</i> 2014, Liu <i>et al.</i> 2008, 2010, Li <i>et al.</i> 2009
<i>NHX3</i>	At5G55470	tonoplast	roots	K ⁺ /H ⁺ exchanger, K ⁺ accumulation in roots	Li <i>et al.</i> 2009
<i>NHX4</i>	At3g06370	tonoplast	seedling stem, stigma and calyces	Na ⁺ homeostasis	McCubbin <i>et al.</i> 2014, Liu <i>et al.</i> 2008, 2010, Li <i>et al.</i> 2009
<i>NHX5</i> <i>NHX6</i>	At1g54370 At1g79610	endosome, Golgi, TGN, PVC	seedling shoots and roots	pH and K ⁺ homeostasis, vesicle trafficking	Bassil <i>et al.</i> 2011b, Reguera <i>et al.</i> 2015, Wang <i>et al.</i> 2015, Wu <i>et al.</i> 2016
<i>NHX7/SOS1</i>	At2g01980	plasma membrane	root meristem zone and in the parenchyma cells surrounding the vascular tissue	Na ⁺ /H ⁺ antiport, Na ⁺ extrusion from the cytosol	Wu <i>et al.</i> 1996, Shi <i>et al.</i> 2000, 2002, 2003, Qiu <i>et al.</i> 2002, Oh <i>et al.</i> 2010, Ullah <i>et al.</i> 2016
<i>NHX8</i>	At1g14660		leaves, hypocotyles, primary roots and root hairs	Li ⁺ /H ⁺ antiport, Li detoxification	An <i>et al.</i> 2007, Puerma and Aguade 2013

Table 2. The *CPA2* genes involved in salt responses. ER - endoplasmic reticulum, TGN - *trans*-Golgi network, PVC - prevacuolar compartment.

Name	Gene ID in <i>Arabidopsis</i>	Subcellular localization	Tissue localization	Function in salt responses	References
<i>KEA1</i>	At1g01790	inner envelop membrane of chloroplasts	shoots and roots, vascular tissues, florescent organs, guard cells	K ⁺ efflux antiporter, responsive to salt stress and osmotic stress	Aranda-Sicilia <i>et al.</i> 2012, 2016
<i>KEA2</i>	At4g00630				Zheng <i>et al.</i> 2013, Kunz <i>et al.</i> 2014, Stephan <i>et al.</i> 2016, Han <i>et al.</i> 2015
<i>KEA3</i>	At4g04850	thylakoid membrane, Golgi			
<i>KEA5</i>	At5g51710	cytosol			
<i>CHX13</i>	At2g30240	plasma membrane	flowers, siliques, roots	high-affinity K ⁺ uptake	Zhao <i>et al.</i> 2008
<i>CHX14</i>	At1g06970	plasma membrane	widespread around the plant, xylem parenchyma of root, shoot vascular tissues	low-affinity K ⁺ efflux transporter	Zhao <i>et al.</i> 2015
<i>CHX16</i>	At1g64170	ER	root epidermis in the division zone, leaf epidermis	pH and K ⁺ homeostasis	Chanroj <i>et al.</i> 2011, 2013, Maresova and Sychrova 2006, Padmanaban <i>et al.</i> 2017
<i>CHX17</i>	At4g23700	PVC, plasma membrane, endosome, post-Golgi compartment	roots, stipules, developing seeds	pH and K ⁺ homeostasis, membrane trafficking, pollen wall formation	
<i>CHX18</i>	At5g41610	PVC, plasma membrane	sperm cell, micropylar and the peripheral endosperm at the pre-globular and globular embryo stage	pH and K ⁺ homeostasis, pollen wall formation	
<i>CHX19</i>	At3g17630		pollen tube		
<i>CHX20</i>	At3g53720	ER	leaf guard cells	light-induced stomatal opening, pH and K ⁺ homeostasis	
<i>CHX21</i>	At2g31910	plasma membrane	root endodermal cells, flower buds, flowers, pollen	transport of Na ⁺ into the stele	Hall <i>et al.</i> 2006, Evans <i>et al.</i> 2012, Lu <i>et al.</i> 2011
<i>CHX23</i>	At1g05580	chloroplast envelope, ER in pollen tubes	widespread around the plant, flowers, preferentially expressed in pollen	Na ⁺ (K ⁺)/H ⁺ antiporter, Na ⁺ sequestration in chloroplast	Song <i>et al.</i> 2004, Lu <i>et al.</i> 2011, Evans <i>et al.</i> 2012