ROS scavenging and ion homeostasis is required for the adaptation of halophyte Karelinia caspia to high salinity

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Supplementary Material

Table S1. Primer sequences used in the experiments

Primer	Sequence (5'-3')
KcActin-F	5'-CTTGCGTATGTGGCTCTTGACT-3'
KcActin-R	5'-TGGAACAAAACCTCTGGACAAC-3'
KcSOS1-F	5'-TGTGTGGTCTGGTTTGAGGGGT-3'
KcSOS1-R	5'-TCTGATTGGGTATGAGGGTGGA-3'
KcSOS2-F	5'-GAAGCTGGAACCTGTGGCGAAG-3'
KcSOS2-R	5'-CATGTCCCTGGAGCCTCAAACTG-3'
KcSOS3-F	5'-TCCACATTCTCAGTCGCTGTAAGTG-3'
KcSOS3-R	5'-ACACCGTCGTTGATGATGGAGTTG-3'
KcNHX1-F	5'-GGGTGTGGTAAATGATGCAACAT-3'
KcNHX1-R	5'-CAACAAAAACTCCCAACAAGGTG-3'
KcCAX-F	5'-AACTTTGGACTCACCGCCACATC-3'
KcCAX-R	5'-CCTAGCACTGGGGTTTCATCTTCAC-3'
KcAVP-F	5'-GAGACGGCAGTTCAACACCATCC-3'
KcAVP-R	5'-AACAAGAGCACCAGGAGGAATCATC-3'
KcCu/Zn SOD-F	5'-GTCACAGTTGGCGAAGACGGTAC-3'
KcCu/Zn SOD-R	5'-ATCAGGGTCAGCATGGACAACAAC-3'
KcAPX6-F	5'- TTTAGGGAGGTCCCGACCAGAAC -3'
KcAPX6-R	5'-GCCACTTCACTGTCCAAGACTGTC -3'
KcHPT1-F	5'-GGTTGGATGGATTGTTGGTTCATGG-3'

KcHPT1-R	5’-ATGCACATTGCTGCCACGAGAG-3’
Kc γ-TMT-F	5’-TCACGGCTTCTACGACCCTGAC-3’
Kc γ-TMT-R	5’-AGGAACAGAGGCGAAGAGGAGTG-3’
KcHCT-F	5’-GGAGGAGTGGGTCTTGGTTGTGG-3’
KcHCT-R	5’-AATGAAAGGTGGAATGGCTACGG-3’
KcF3H-F	5’-CAAAGTGTCCTAAGCCCGACCTAAC-3’
KcF3H-R	5’-TGTGATCCATGTCTTGCCACCATC-3’
KcSAMS-F	5’-AAGCTCAACCCCACCCTCATACTAG-3’
KcSAMS-R	5’-ACTCCAGCGGAAAACACATGCC-3’
KcSMS-F	5’-TGGCAGAGAGTATGTGGCTCCAC-3’
KcSMS-R	5’-GACGCTGGTCCATGCATAATGAATG-3’
KcMEKK1-F	5’-GTGATTTTCTTGGAAGTGGGTCGTT-3’
KcMEKK1-R	5’-TGCTTTCCTTTGGTCCCTTGGT-3’
KcMKK2-F	5’-GCCAATCTGATACTCCGCCACTT-3’
KcMKK2-R	5’-CACCGTTCCCTTTTCCAACTACTTTA-3’
KcMPK4-F	5’-AGAGGAGCTTACGGAATTGTCTGTGC-3’
KcMPK4-R	5’-GGTCCGTTTGGCATCTATTCTGTTGT-3’
KcMPK6-F	5’-CGCAAGCCCTTATTTCCTGGTAG-3’
KcMPK6-R	5’-GAAACCCCAATTCAGCTTCTGATGG-3’

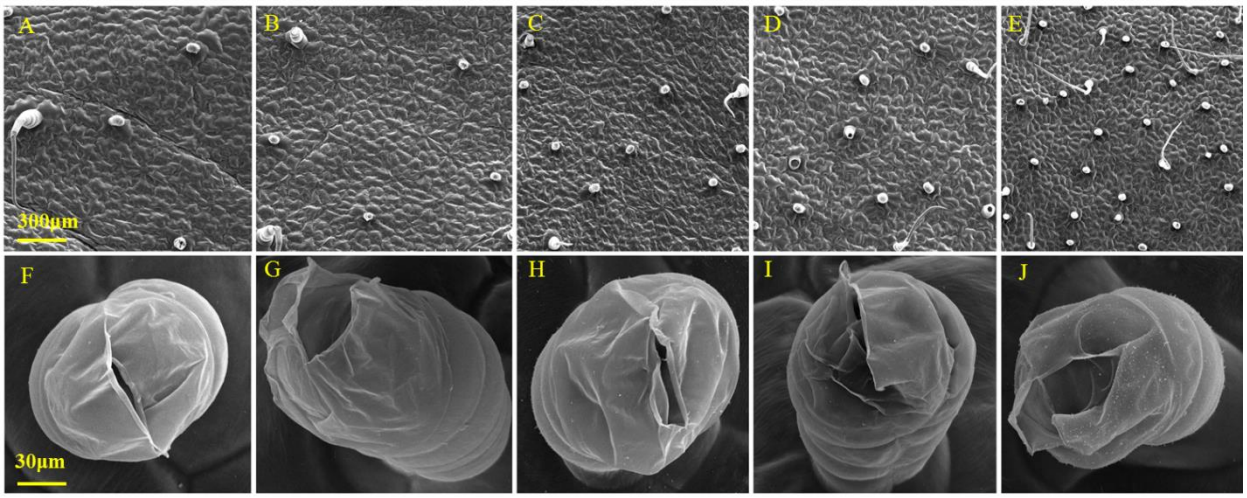

Figure S1 Salt glands of *K. caspia* under different NaCl treatments (A-F) distribution of salt glands on leaf surface; (F-J) salt glands; (A,F) CK, (B,G) 100 mM NaCl, (C,H) 200 mM NaCl, (D,I) 300 mM NaCl, (F,J) 400 mM NaCl

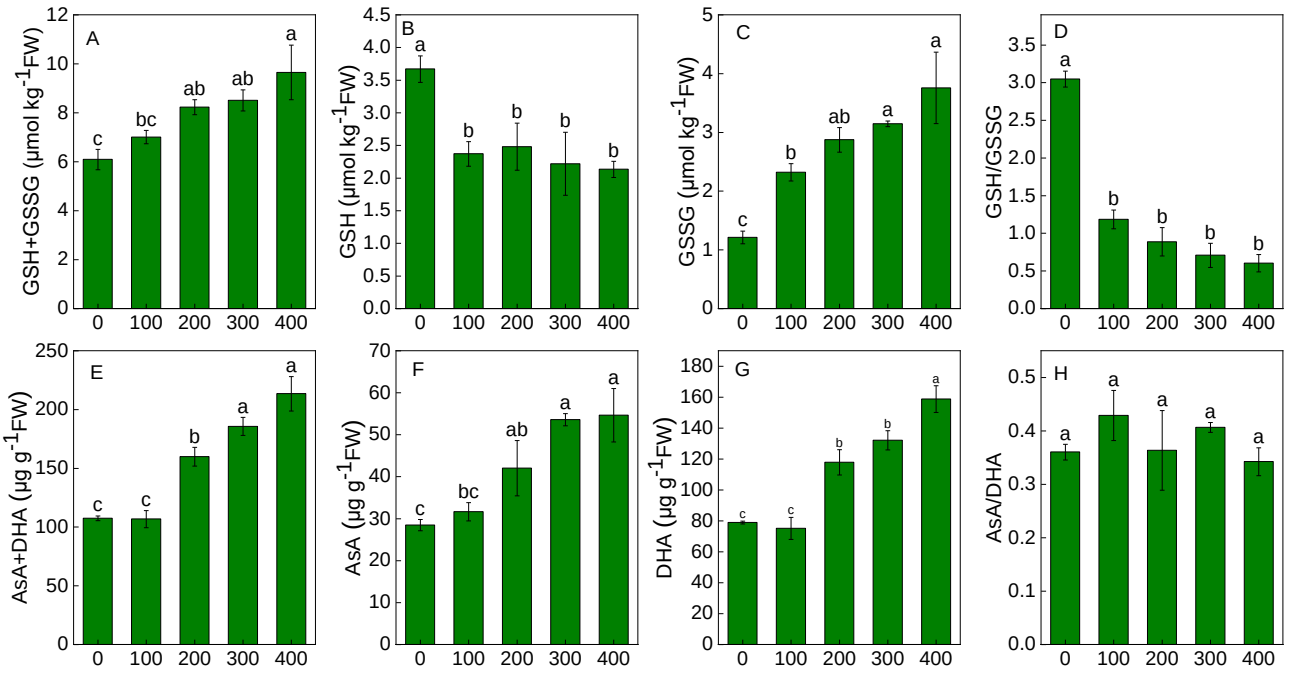

Figure S2 Changes in the glutathione and ascorbate content of *K. caspia* in response to salinity. (A) total glutathione (GSH+GSSG), (B) reduced glutathione (GSH), (C) oxidized glutathione (GSSG), (D) GSH/GSSG ratio. (E) reduced ascorbate(AsA), (F) oxidized ascorbate (DHA), (G) total ascorbate (AsA+DHA), (H) AsA/DHA ratio.

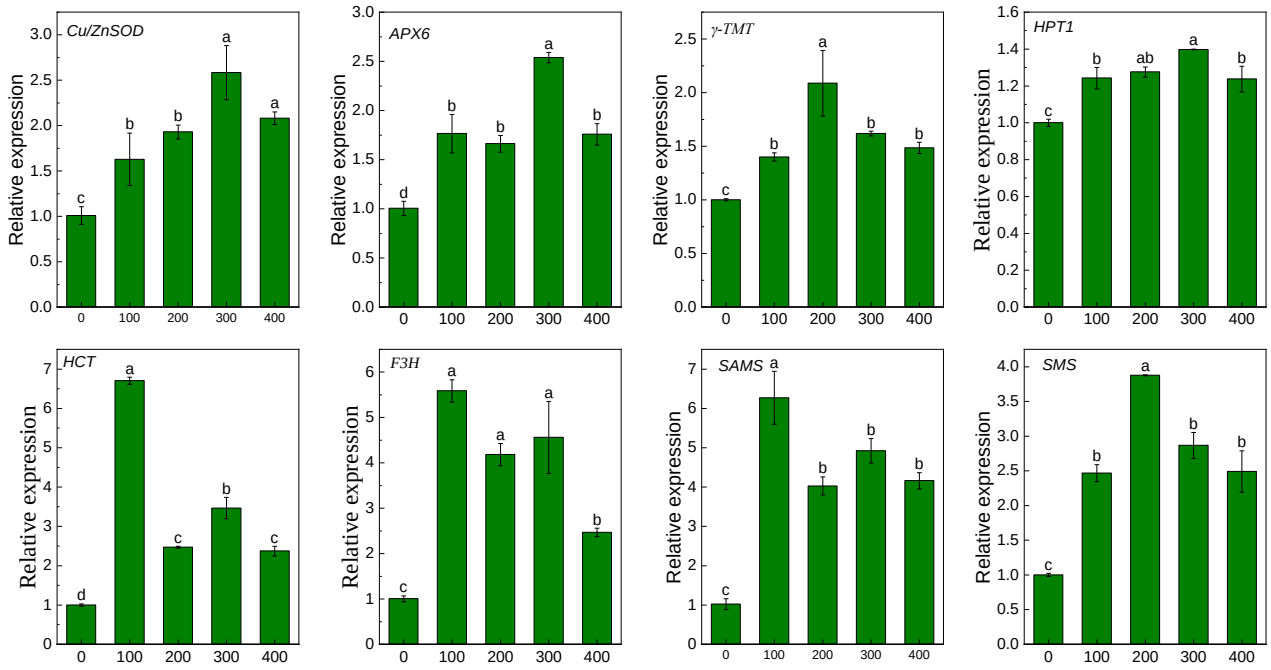

Figure S3 Expression level of antioxidant enzyme genes and antioxidant synthesis related genes in leaves of *K.caspia*. (A) *Cu/Zn SOD*; (B) ascorbate peroxidase6 (*APX6*); (C) homogentisate phytyltransferase (*HPT1*); (D) γ-tocopherol methyltransferase (*γ-TMT*); (E) hydroxycinnamoyl transferase (*HCT*); (F) flavanone 3-hydroxylase (*F3H*)

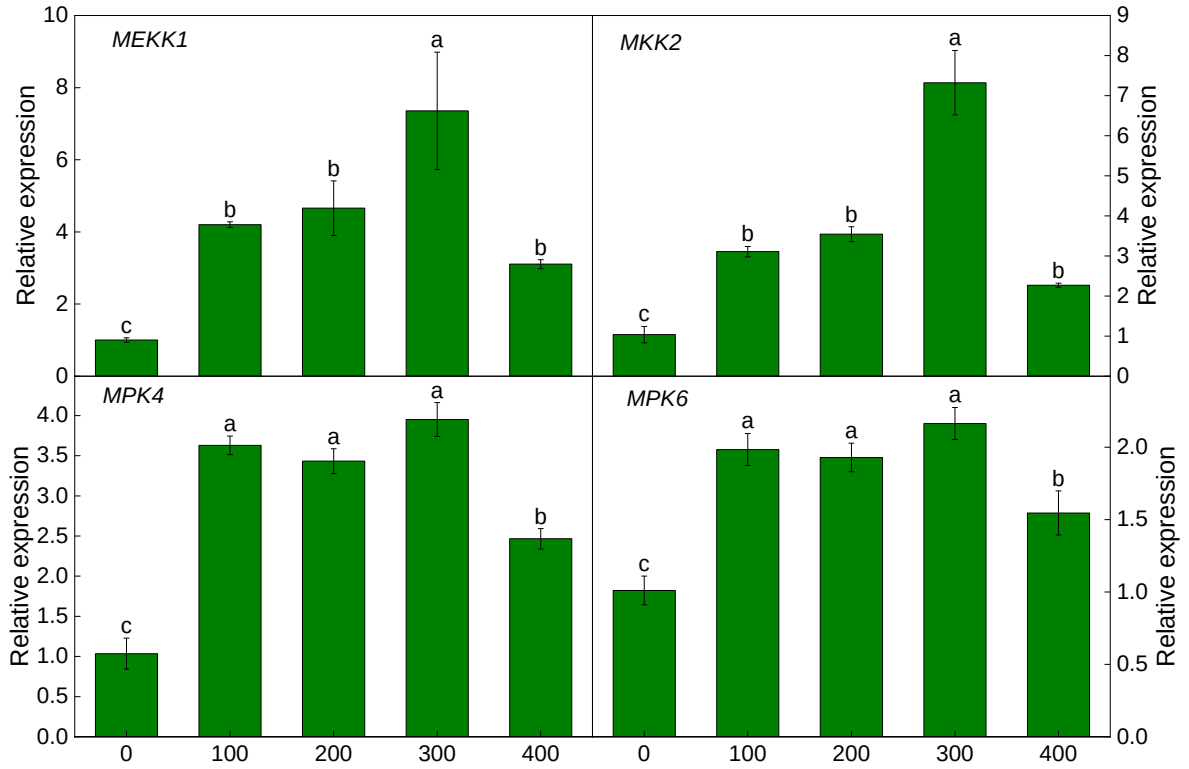

Figure S4 Expression level of MAPK pathway related genes in leaves of *K. caspia*. (A) mitogen-activated protein kinase kinase kinase 1(*MEKK1*); (B) mitogen-activated protein kinase kinase2 (*MKK2*); (3) mitogen-activated protein kinase4 (*MPK4*); (4) mitogen-activated protein kinase6 (*MPK6*)