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

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Published in:
Frontiers in Plant Science

DOI:
[10.3389/fpls.2022.979956](https://doi.org/10.3389/fpls.2022.979956)

Publication date:
2022

Citation for published version (APA):

Li, C., Mur, L. A. J., Wang, Q., Hou, X., Zhao, C., Chen, Z., Wu, J., & Guo, Q. (2022). ROS scavenging and ion homeostasis is required for the adaptation of halophyte *Karelinia caspia* to high salinity. *Frontiers in Plant Science*, 13, [979956]. <https://doi.org/10.3389/fpls.2022.979956>

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Supplementary Material

Table S1. Primer sequences used in the experiments

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

<i>KcHPT1-R</i>	5'-ATGCACATTGCTGCCACGAGAG-3'
<i>Kc γ-TMT-F</i>	5'-TCACGGCTTCTACGACCCTGAC-3'
<i>Kc γ-TMT-R</i>	5'-AGGAACAGAGGCCGAAGAGGAGTG-3'
<i>KcHCT-F</i>	5'-GGAGGAGTGGGTCTTGGTTGTGG-3'
<i>KcHCT-R</i>	5'-AATGAAAGGTGGAATGGCTACGG-3'
<i>KcF3H-F</i>	5'-CAAAGTGTCCTAAGCCCGACCTAAC-3'
<i>KcF3H-R</i>	5'-TGTGATCCATGTCTTGCCACCATC-3'
<i>KcSAMS-F</i>	5'-AAGCTCAACCCCACCCTCATACTAG-3'
<i>KcSAMS-R</i>	5'-ACTCCAGCGGAAAACACATGCC-3'
<i>KcSMS-F</i>	5'-TGGCAGAGAGTATGTGGCTCCAC-3'
<i>KcSMS-R</i>	5'-GACGCTGGTCCATGCATAATGAATG-3'
<i>KcMEKK1-F</i>	5'-GTGATTTTCTTGGAAGTGGGTCGTT-3'
<i>KcMEKK1-R</i>	5'-TGCTTTCCTTTGGTCCCTTGGT-3'
<i>KcMKK2-F</i>	5'-GCCAATCTGATACTCCGCCACTT-3'
<i>KcMKK2-R</i>	5'-CACCGTTCCCTTTTCCA ACTACTTTA-3'
<i>KcMPK4-F</i>	5'-AGAGGAGCTTACGGAATTGTCTGTGC-3'
<i>KcMPK4-R</i>	5'-GGTCCGTTTGGCATCTATTCTGTTGT-3'
<i>KcMPK6-F</i>	5'-CGCAAGCCCTTATTCCTGGTAG-3'
<i>KcMPK6-R</i>	5'-GAAACCCCAATTCAGCTTCTGATGG-3'

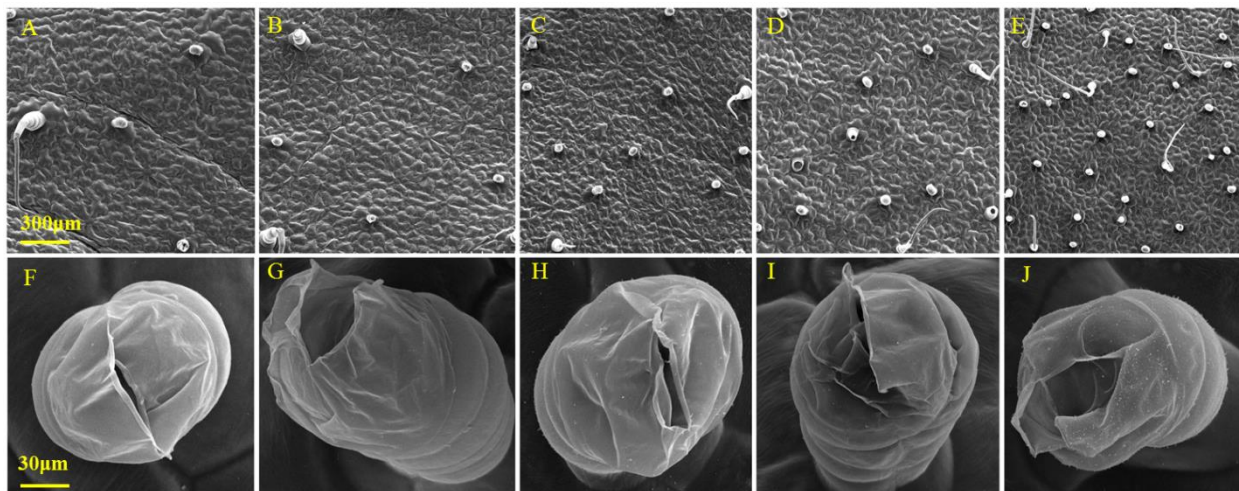


Figure S1 Salt glands of *K. caspia* under different NaCl treatments (A-F) distribution of salt glands on leaf surface; (F-J) salt glands; (A,F) CK, (B,G) 100 mM NaCl, (C,H) 200 mM NaCl, (D,I) 300 mM NaCl, (E,J) 400 mM NaCl

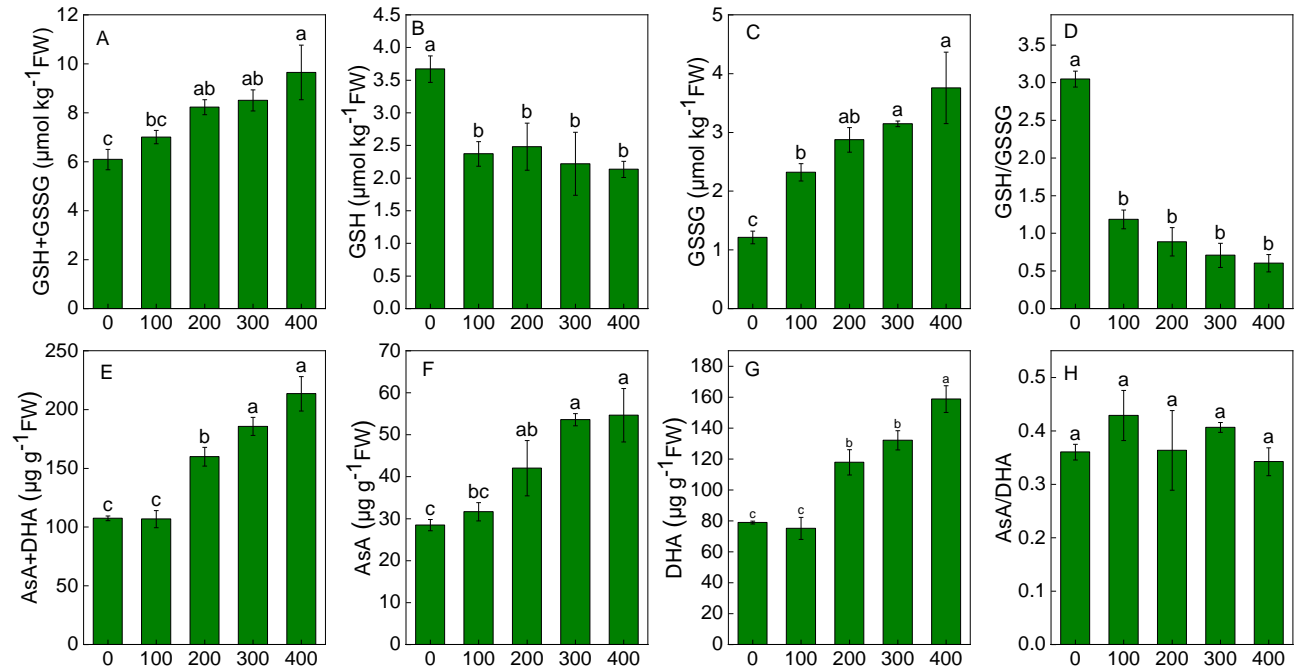


Figure S2 Changes in the glutathione and ascorbate content of *K. caspia* in response to salinity. (A) total glutathione (GSH+GSSG), (B) reduced glutathione (GSH), (C) oxidized glutathione (GSSG), (D) GSH/GSSG ratio. (E) reduced ascorbate(AsA), (F) oxidized ascorbate (DHA), (G) total ascorbate (AsA+DHA),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

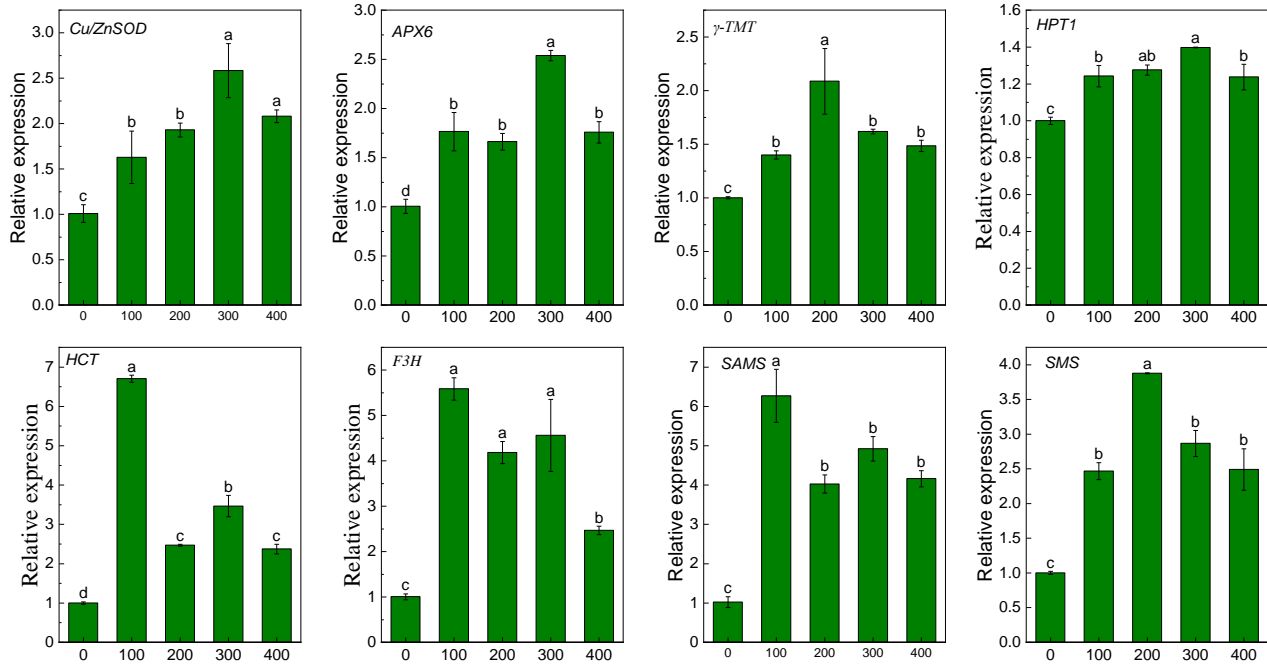


Figure S3 Expression level of antioxidant enzyme genes and antioxidant synthesis related genes in leaves of *K.caspia*. (A) *Cu/Zn SOD*; (B) ascorbate peroxidase6 (*APX6*); (C) homogentisate phytyltransferase (*HPT1*); (D) γ -tocopherol methyltransferase (*γ -TMT*); (E) hydroxycinnamoyl transferase (*HCT*);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

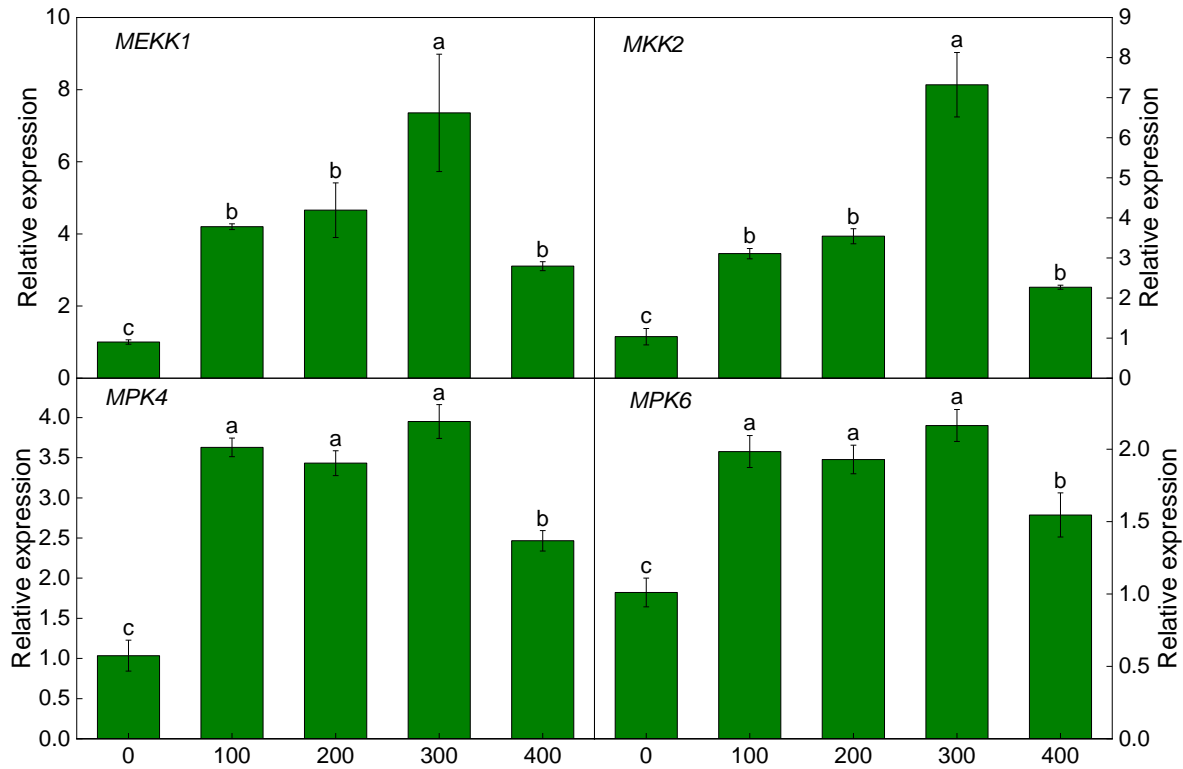


Figure S4 Expression level of MAPK pathway related genes in leaves of *K. caspia*. (A) mitogen-activated protein kinase kinase kinase 1 (*MEKK1*); (B) mitogen-activated protein kinase kinase2 (*MKK2*); (3) mitogen-activated protein kinase4 (*MPK4*); (4) mitogen-activated protein kinase6 (*MPK6*)