

Figure S1 SDS-PAGE of expressed recombinant His-APX1 protein and GST-MaMsrb2 from *E. coli* BL21. “Before” and “After” referred to before and after protein purification.

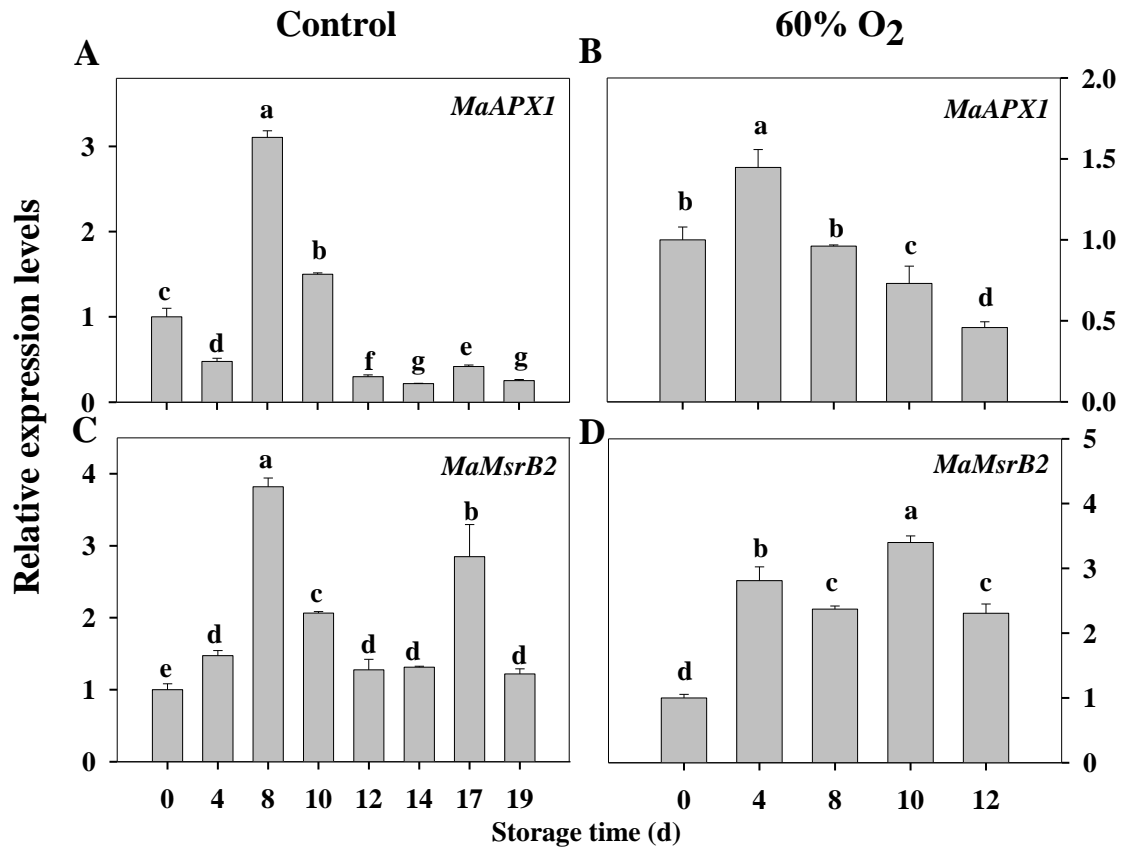


Figure S2 Expression of *MaAPX1* and *MaMsrB2* genes of banana fruit stored under air (control) or 60% oxygen at 25 °C. (A, C) control fruit. (B, D) fruit stored under 60% oxygen. The expression levels were expressed as a ratio relative to that of 0 d for control fruit, which was set as 1. Each value represents the mean \pm SE of three biological replicates. Different letters indicated statistically significant differences between the samples (Student's t test; $P < 0.05$).

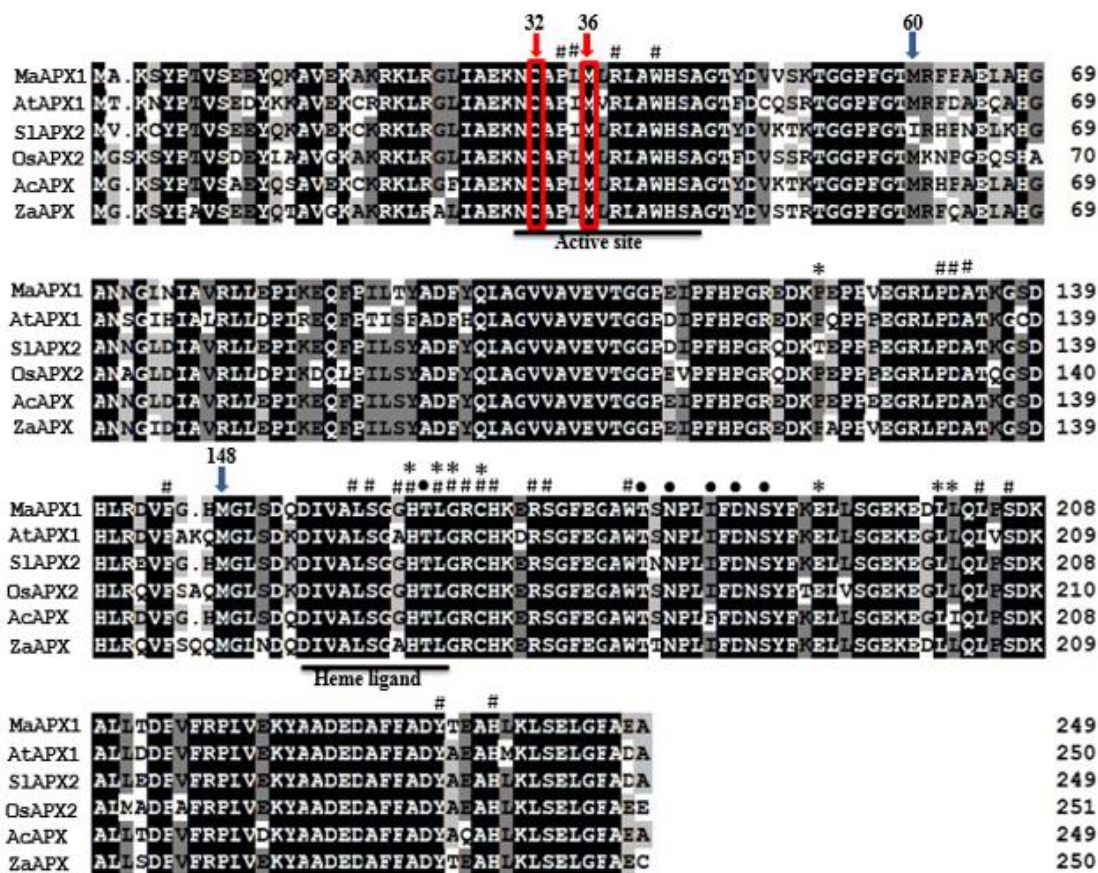


Figure S3 Multiple alignment of MaAPX1 with AtAPX1 (*Arabidopsis thaliana*, NP_001030991.2), SlAPX2 (*Solanum lycopersicum*, NP_001318094.1), OsAPX2 (*Oryza sativa*, XP_015646556.1), AcAPX (*Ananas comosus*, XP_020108209.1), ZaAPX (*Zantedeschia aethiopica*, AAC08576.1). #: heme binding site; *: substrate binding site; ●: K⁺ binding site).

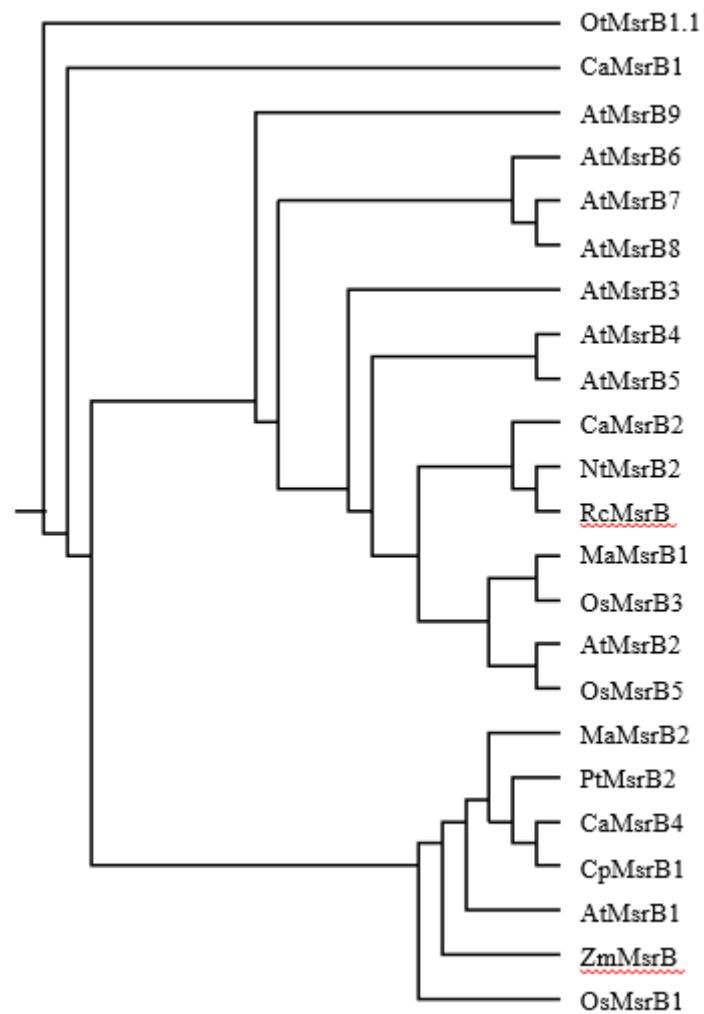


Figure S4 Phylogenetic alignment of MaMsrB1 and MaMsrB2 with MsrBs from *Arabidopsis thaliana*, *Capsicum annuum*, *Carica papaya*, *Medicago truncatula*, *Oropetium thomaeum*, *Oryza sativa*, *Populus trichocarpa*, *Ricinus communis* and *Zea mays*.

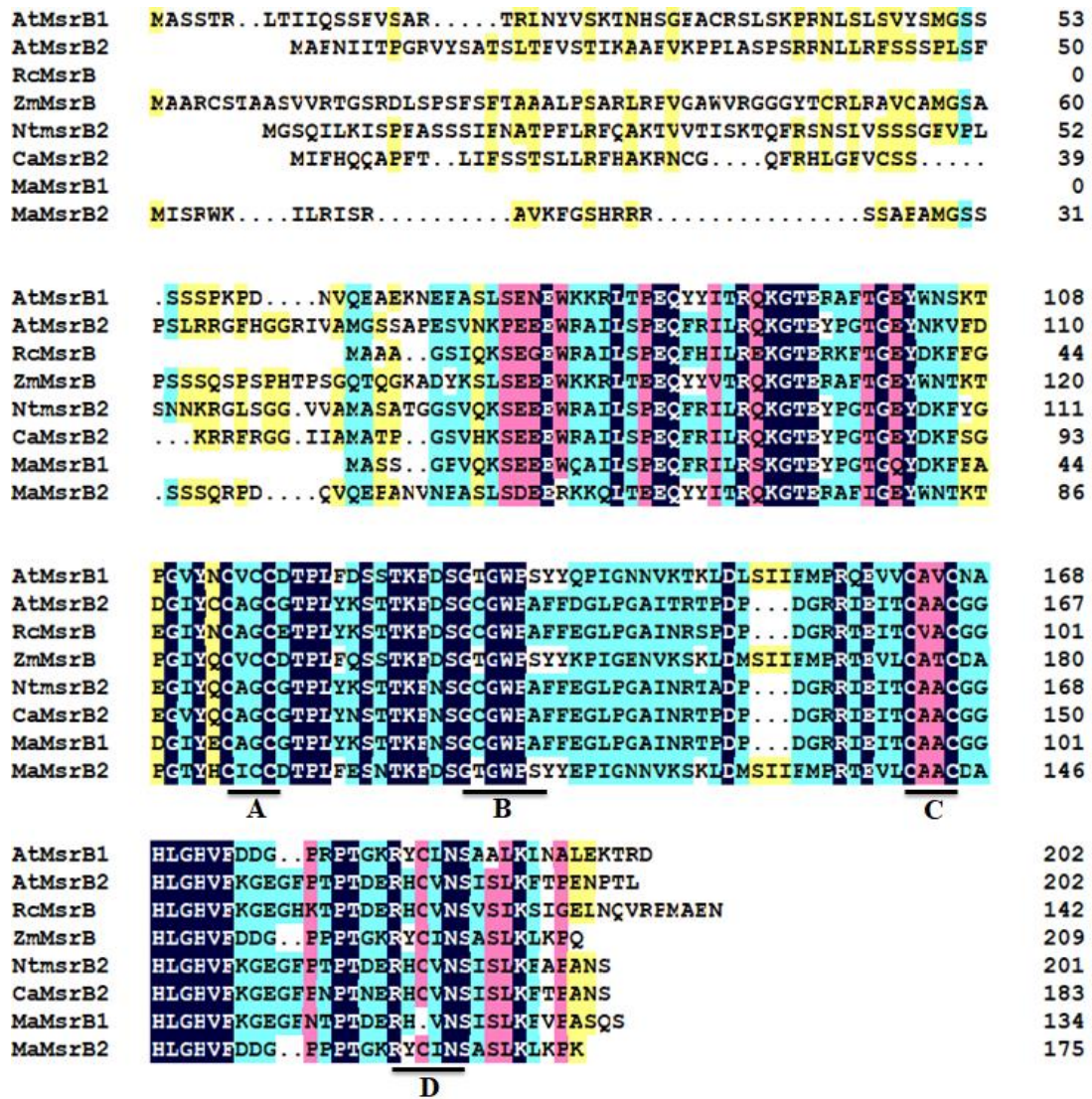


Figure S5 Multiple alignment of MaMsrB1 and MaMsrB2 with AtMsrB1, AtMsrB2, RcMsrB, ZmMsrB, NtMsrB2 and CaMsrB2. The conserved recycling motifs (B), conserved catalytic domain (D) and the zinc fixation motifs (A and C) are indicated by black lines.

Table S1 Summary of primers used in this study.

Gene	Forward(5'-3')	Reverse(5'-3')
For full length cloning		
<i>MaAPX1</i>	ATGGCGAAGTCGTATCCGACGG TGAGTG	TTAAGCCTCAGCAAATCCGAGTT CTGA
<i>MaMsrB2</i>	ATGATCAGTCGATGGAAAATCC TCCGC	CTACTTCGGCTTCAGCTTTAGGG ATGC
For qRT-PCR in banana		
<i>MaAPX1</i>	GGGCTCAACATCGCTGTCAGGC TCTT	GGCACCTTCCCAGTGTGTGTCCA CCA
<i>MaMsrB2</i>	TCTTTGTGCTGCCTGCGAT	CAGATGTCCGATAGATTTTGTC
<i>MaActin</i>	TGGTATGGAAGCCGCTGGTA	TCTGCTGGAATGTGCTGAGG
For qRT-PCR in Arabidopsis		
<i>MaAPX1</i>	TCTTGTGGAGAAATATGCTGCC	TTGGGACAACCTCCAGTGAAA
<i>AtUBQ</i>	GATCTTTGCCGGAAAACAATTG GAGGATGG	CGACTTGTCATTAGAAAGAAAG AGATAACA
For overexpression in Arabidopsis		
<i>MaAPX1-1302</i>	GGACTCTTGACCATGGTAATGG CGAAGTCGTATCCGACGGTGA	GTCAGATCTACCATGGTAGCCTC AGCAAATCCGAGTTCT
For subcellular localization		
<i>MaAPX1-GFP</i>	GGACTCTTGACCATGGTAATGG CGAAGTCGTATCCGACGGTGA	GTCAGATCTACCATGGTAGCCTC AGCAAATCCGAGTTCT
<i>MaMsrB2-GFP</i>	GGACTCTTGACCATGGTAATGA TCAGTCGATGGAAAATCCTCCG C	GTCAGATCTACCATGGTCTACTT CGGCTTCAGCTTTAGGGATGC
For site-directed mutagenesis of Met residues to glutamine and valine		
<i>MaAPX1M36Q</i>	AACTGTGCCCGTTGCAGCTCC GGCTC	GAGCCGGAGCTGCAACGGGGCA CAGTT

MaAPX1M AACTGTGCCCCGTTGGTGCTCC GAGCCGGAGCACCAACGGGGCA
36V GGCTC CAGTT

For BiFC

*MaAPX1-
YC* CGCGCCACTAGTGGATCCATGG GGGAGCGGTACCCTCGAGAGCC
CGAAGTCGTATCCGACGGTGAG TCAGCAAATCCGAGTTCTGA
TG

*MaAPX1-
YN* CGCGCCACTAGTGGATCCATGG GGGAGCGGTACCCTCGAGAGCC
CGAAGTGGACTTGAAGAAGTCG TCAGCAAATCCGAGTTCTGA
TG

*MaMsrB2-
YC* CGCGCCACTAGTGGATCCATGA GGGAGCGGTACCCTCGAGCTTC
TCAGTCGATGGAAAATCCTCCG GGCTTCAGCTTTAGGGATGC
C

For Y2H

*MaAPX1-
BD* GAGGAGGACCTGCATATGGCGA ACGGATCCCCGGGAATTCTTAA
AGTCGTATCCGACGGTGAGTG GCCTCAGCAAATCCGAGTTCT

*MaAPX1-
AD* CCAGATTACGCTCATATGGCGA CCCACCCGGGTGGAATTCTTAA
AGTCGTATCCGACGGTGAGTG GCCTCAGCAAATCCGAGTTCT

*MaMsrB2-
AD* CCAGATTACGCTCATATGATGA CCCACCCGGGTGGAATTCCTACT
TCAGTCGATGGAAAATCCTCCG TCGGCTTCAGCTTTAGGGATGC
C

*MaMsrB2-
BD* GAGGAGGACCTGCATATGATGA ACGGATCCCCGGGAATTCCTACT
TCAGTCGATGGAAAATCCTCCG TCGGCTTCAGCTTTAGGGATGC
C

For protein expression

*MaAPX1-
His* CCGCGCGGCAGCCATATGGCGA AGTCATGCTAGCCATATGTTAAG
AGTCGTATCCGACGGTGAG CCTCAGCAAATCCGAGTTCT

*MaMsrB2-
GST* CTGGTTCCGCGTGGATCCATGA CCGGGAATTCGGGGATCCCTAC
TCAGTCGATGGAAAATCCTCCG TTCGGCTTCAGCTTTAGGGATGC
C
