Supplementary figures and tables:

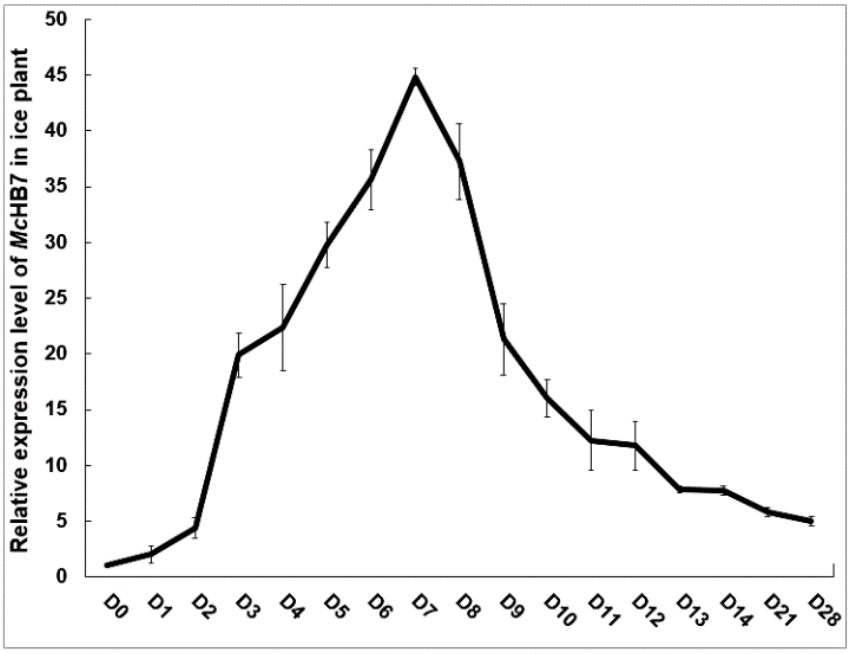

Figure S1. Relative expression level of *McHB7* gene in infiltrated ice plant leaves; D0-D28, The infiltrated leaves from day 0 to day 28.

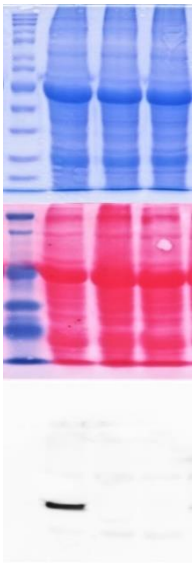

Figure S2. Original gel and Western images of the results shown in different main Figures.

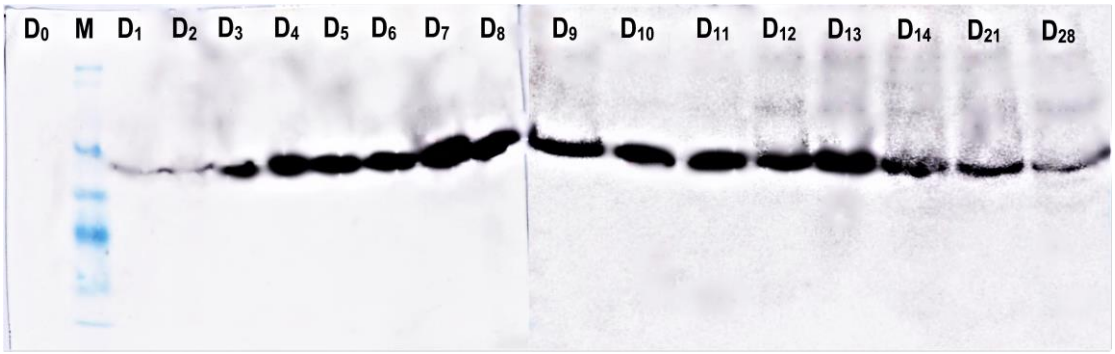

Figure 1C. Western blot analysis of extracted proteins from the ice plant leaves 1–3.

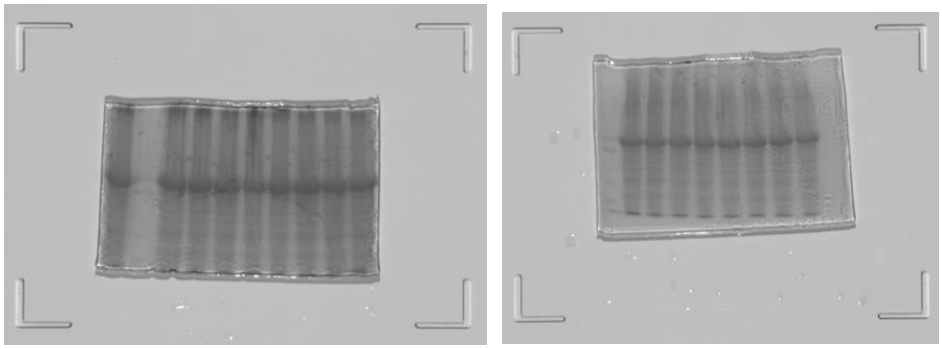

Figure 1E. Western blot of transgenic ice plant leaves from day 0 (D0) to day 28 (D28).

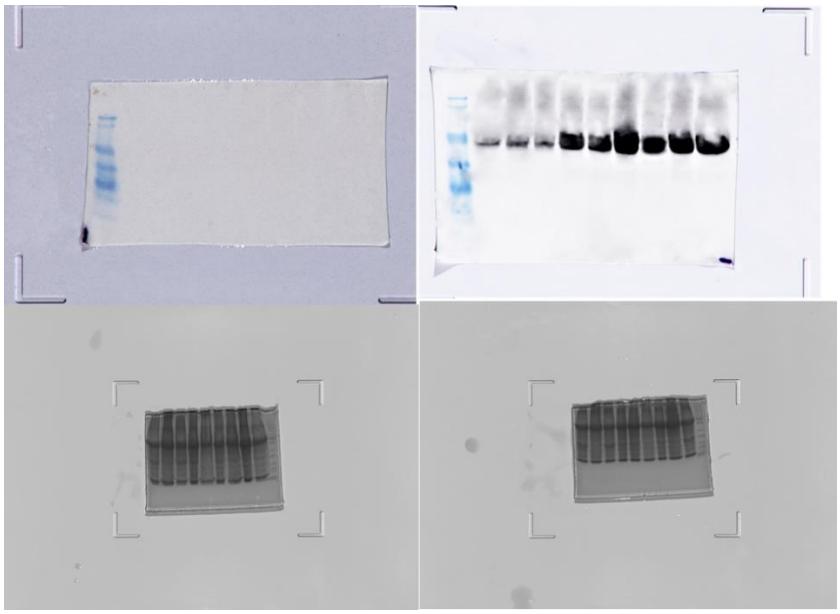

Figure 2D. *Mc*HB7 protein levels in the OE under control and drought stress compared with WT.

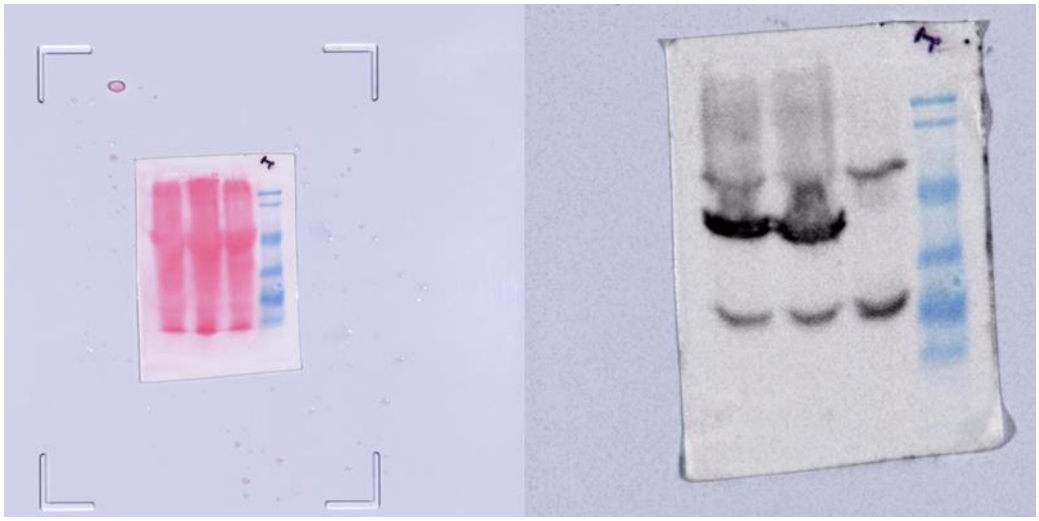

Figure 7A. IP result with the *Mc*HB7 bait.

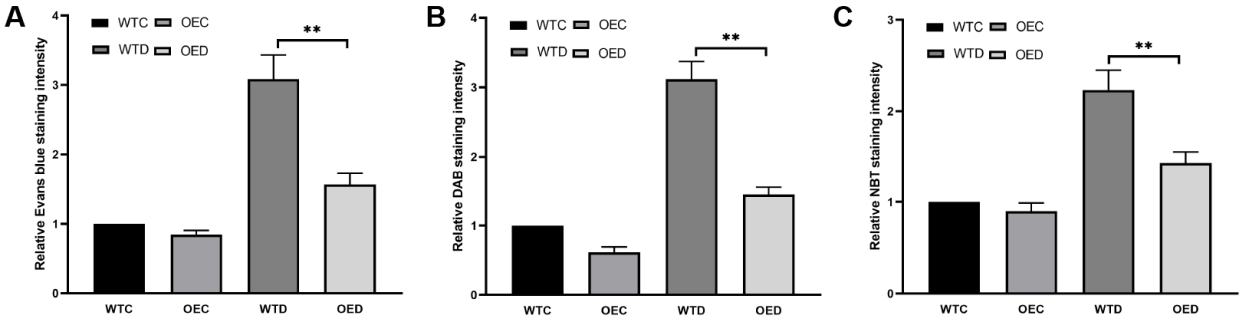

Figure S3. Data analysis of Evans blue, DAB and NBT staining corresponding to Figure 3H; (**A**) Relative Evans blue staining intensity; (**B**) Relative DAB staining intensity; (**C**) Relative NBT staining intensity.

Supplementary Table S1. List of primers, their sequences and purpose for this study.

Primer Name	Primer Sequence (5′-3′)	Purpose
fMcHB7F	CGCGGATCCATGATGTATGAAGAAGGAGAA	For the construction of *McHB7-pCAMBIA1300-FLAG*
fMcHB7R	CGGTCTAGATCAGGCGCCTTTGTCATCGTCATCCTTGTAG-TCTCCGCCTTTATCGTCATCGTCTTTATAATCTCCGCCTTTGTCATCGTC ATCCTTGTAGTCTCCGCCCGACCAAAATTCCCACCATTG	
McPIP1;2F	GATGCCAAGAGGAGTGCTAG	Internal primers used for RT-qPCR
McPIP1;2R	GTTCCAGTGATTGGGATGGTT	
rtMcHB7F	CGAGACGAACAGCAATAATAGT	Primers for *McHB7*quantification by RT-qPCR
rtMcHB7R	CTTCACACACATCGCATTTCT	
AD-McHB7F	GGAATTCATGATGTATGAAGAAGGAGAA	Primers used for the construction of *AD-McHB7* for yeast one-hybrid assay
AD-McHB7R	CGAGCTCTCACGACCAAAATTCCCACCA	
p1F	AGCTTACGTAACGTAACGTAGAGCT	Primers used for the construction of *pAbAi-ACGTA*
p1R	TTACGTTACGTTACGTG	
P2F	AGCTT TGTCATGTCATGTCAGAGCT	Primers used for the construction of *pAbAi-TGTCA*
P2R	TTGACATGACATGACAG	
P3F	AGCTTTGTCGTGTCGTGTCGGAGCT	Primers used for the construction of *pAbAi-TGTCG*
P3R	TCGACACGACACGACAG	
P4F	AGCTTCACATCACATCACATGAGCT	Primers used for the construction of *pAbAi-CACAT*
P4R	TATGTGATGTGATGTGG	
BD-McHB7F	CCATGGCCATGATGTATGAAGAAGGAGAA	Primers used for the construction of BD-*Mc*HB7 for transactivation assay
BD-McHB7R	GTCGACTCACGACCAAAATTCCCACCA	
BD-McHB7aF	CCATGGCCATGATGTATGAAGAAGGAGAA	Primers used for the construction of *BD-McHB7a*
BD-McHB7aR	GTCGACTCTCTTGTTCATCATCTTCTT	
BD-McHB7bF	CCATGGCCCGATTCAGCGACGATCAAGTG	Primers used for the construction of *BD-McHB7b*
BD-McHB7bR	GTCGACTCACGACCAAAATTCCCACCA	
BD-McHB7cF	CCATGGCCATGATGTATGAAGAAGGAGAA	Primers used for the construction of *BD-McHB7c*
BD-McHB7cR	GTCGACCTTGTAACGAGCCCTCTTGTT	
BD-McHB7dF	CCATGGCCAAGCAGCTAGAGCACGAGTAT	Primers used for the construction of *BD-McHB7d*
BD-McHB7dR	GTCGACTCACGACCAAAATTCCCACCA	
BD-McHB7eF	CCATGGCCATGATGTATGAAGAAGGAGAA	Primers used for the construction of *BD-McHB7e*
BD-McHB7eR	GTCGACATCTTTCAACTTCTGTATCTG	
BD-McHB7fF	CCATGGCCATAGCGGCGAGGAAGGGAGAA	Primers used for the construction of *BD-McHB7f*
BD-McHB7fR	GTCGACTCACGACCAAAATTCCCACCA	