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Molecular cloning and characterization of *BcCSP1*, a Pak choi (*Brassica rapa* ssp. *chinensis*) cold shock protein gene highly co-expressed under ABA and cold stimulation

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Cold shock proteins (CSPs) are a kind of evolutionarily conserved nucleic acid binding protein widely distributed from prokaryotes to eukaryotes. In this study, *BcCSP1*, a novel CSP was isolated from a Pak choi stress induced cDNA library by the rapid amplification of cDNA ends method. This gene had an open reading frame (ORF) of 822 base pairs encoding 273 amino acids. *BcCSP1* contained an N-terminal CSD domain and a glycine rich region interspersed with seven CCHC type zinc fingers at its C-terminus. Multi alignment and phylogenetic analyses showed that *BcCSP1* shared high similarity to AtCSP1 and AtCSP3. Real-time polymerase chain reaction analysis showed that *BcCSP1* was induced and co-expressed under cold stress and abscisic acid treatments. In addition, a *BcCSP1*-YFP fusion protein was localized to the nucleus and cytoplasm. These results indicated that *BcCSP1* plays an important role in responses to cold and ABA treatments in Pak choi. This work may be useful for future functional analysis of other CSP genes in Pak choi.

Biography

Feiyi Huang is currently a PhD student at Nanjing Agricultural University in China majoring in Vegetable Breeding and Molecular Biology. Her research focuses on cold stress and controlling flowering time in non-heading Chinese cabbage. She has published a paper entitled "Molecular cloning and characterization of *BcCSP1*, a Pak-choi (*Brassica rapa* ssp. *chinensis*) cold shock protein gene highly co-expressed under ABA and cold stimulation" in *Acta Physiologiae Plantarum*.

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