

# Cold shock treatment maintains quality and induces relative expression of cold shock domain protein (*CSDPs*) in postharvest sweet cherry

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## Abstract

The aim of the study was to explore the effect of cold shock treatment on quality and relative expression of cold shock domain proteins (*CSDPs*) in sweet cherry fruits. The sweet cherry fruits were immersed in 0 °C ice water (ice : water = 1:1 w/v) for 10 min, then were stored at 0 ± 1 °C and 90 % relative humidity (RH) in the dark. The results showed that cold shock treatment not only reduced the weight loss and inhibited the accumulation of malondialdehyde (MDA) of the sweet cherry fruits, but also maintained some other indicators like firmness,  $H^*$  values, chroma values, and total anthocyanin content. The quality of sweet cherries treated with cold shock was better than that of the control. Moreover, the cold shock treatment reduced the expression of *CSDP2*, but induced the expression of *CSDP3*. Interestingly, the cold shock treatment did not have much impact on the expression of *CSDP1* and *CSDP4*. The study showed that cold shock treatment could maintain the quality and induced the relative expression of *CSDPs* in sweet cherry fruits, which may be a potential approach for reducing the loss of postharvest sweet cherry.