Title Effect of yeast saccharide treatment on nitric oxide accumulation and chilling injury in cucumber fruit during cold storage

Author Jufang Dong, Qin Yu, Li Lu and Maojun Xu

Citation Postharvest Biology and Technology. Volume 68, June 2012, Pages 1–7

Keywords Yeast saccharide (YS); Cucumber (*Cucumis sativus* L.); Chilling injury; Nitric oxide (NO)

Abstract

The effects of a saccharide fraction prepared from yeast cell walls on chilling injury and endogenous nitric oxide (NO) generation in cucumbers and the role of NO in yeast saccharide (YS)-induced cold tolerance of the fruit during postharvest storage, were investigated. Chilling injury index, malondialdehyde (MDA) content, and ion leakage of fruit treated with 0.5 g/L YS were significantly reduced as compared with those of control fruit stored at 4 °C, showing that YS treatment may reduce chilling injury in cucumber. Moreover, treatment with YS triggered a marked increase in endogenous NO levels. An NO scavenger and NO synthase inhibitors not only diminished YS-triggered NO generation but also suppressed YS-enhanced cold tolerance. Together, our results indicate that YS could have potential postharvest application for reducing chilling injury in cucumber fruit. Furthermore, we found that YS-induced cold tolerance is linked with the induction of endogenous NO accumulation.