Title Cloning and expression analysis of a cDNA partially encoding glutamate dehydrogenase in lettuce during storage

Author Dulal Chandra, Toshiyuki Matsui, Haruo Suzuki, Yusuke Kosugi and Koichi Fujimura

Citation Journal of Crop Science and Biotechnology, 12, Number 2, 73-78, 2009

Keywords Ammonium; cDNA; gene expression; glutamate dehydrogenase; *Lactuca sativa*

Abstract

The changes in ammonia content as well as activity and gene expression of glutamate dehydrogenase (GDH; EC 1.4.1.2) were investigated in lettuce during storage. GDH amination activity increased with the increases in ammonia content in the outer leaf portion after 24 h of storage. GDH amination activity was substantially higher than deamination activity. The isolated partial cDNA clone referred to as *LsGDH* (*Lactuca sativa* glutamate dehydrogenase; AB334207) consisted of 757 nucleotides and was highly homologous with the GDH genes of other plants. Although the transcript of *LsGDH* was found in both the outer and inner leaves, the level of transcript gradually increased in the outer leaves with the progress of storage, but was only expressed in the inner leaves when higher enzyme activity was observed. Results suggest that GDH expression in lettuce is controlled by tissue specific manner and/or multiple levels of regulations.

http://www.springerlink.com/content/0261555174435480/fulltext.pdf