

Cloning and Heterologous Expression of a New 3'-Hydroxylase Gene from *Lycoris radiata*

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A full-length cDNA (LC3'H) was obtained from a cDNA library of *Lycoris radiata* by DOP-PCR (degenerate oligonucleotide primer PCR), 3' race and 5' race methods. Compared with the other reported enzymes from different plants, the deduced amino acid sequence of LC3'H exhibits significant homologies to 3'-hydroxylases that are involved in the caffeic acid biosynthesis. These findings suggest that the new gene is closely related to the biosynthesis of caffeic acid, which is also an important step of the galanthamine biosynthesis in Amaryllidaceae plants.

Key words: Galanthamine Biosynthesis, 3'-Hydroxylase, Amaryllidaceae