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TRANSIENT EXPRESSION OF HDA19 RECOMBINANT PROTEIN IN NICOTIANA BENTAMIANA

Maryam Jamshidnia, Institute of Biochemical Plant Pathology, Helmholtz Zentrum München, German Res. Center for Environmental Health, Neuherberg, Germany; Maryam.Jamshidnia58@gmail.com (Presenting author)
Assist. Prof. Sayed Kamal Kazemitabar, Department of Plant Breeding Biotechnology, Sari Agricultural Sciences, and Natural Resources University SANRU, Sari, Iran; k.kazemitabar@sanru.ac.ir
Dr. Christian Lindermayr, Institute of Biochemical Plant Pathology, Helmholtz Zentrum München, German Res. Center for Environmental Health, 85764 Neuherberg, Germany; lindermayr@helmholtz-muenchen.de
Assist. Prof. Hamid Najafi Zarini, Department of Plant Breeding Biotechnology, Sari Agricultural Sciences, and Natural Resources University SANRU, Sari, Iran; h.najafi@sanru.ac.ir

Expression of recombinant proteins in plants has been the center of significant attention in the last two decades. Plants are among promising and appropriate platform systems for the production of recombinant biopharmaceutical proteins due to several features such as safety, no need for fermentation, inexpensive investment, and fast and easy scale-up. Transient gene expression has been developed to provide a more rapid means of assessing plant tissues as a protein production platform because generating stably transformed transgenic plants is a labor-intensive and time-consuming process. This study reports the expression of *HDA19* gene in *Nicotiana bentamiana* by means of transient transformation. Upon biotic stresses such as wounding and pathogen infection, HDA19 regulates gene expression in jasmonic acid and ethylene signaling pathway. It has also been shown to regulate light mediated processes. After the extraction of RNA and generation of cDNA, Gateway adapters and His6-tag encoding nucleotides at the 3´or 5´end were attached by PCR in order to enable the production of HDA19 with a C-terminal or N-terminal His 6 tag. Then, the constructs were shifted into the plant expression vector pB2GW7 by homologous recombination using the Gateway technology. The plasmids were transformed into *E.coli* DH5α; and after purification, the correct nucleotide sequences were confirmed by restriction analyses and sequencing. The recombinant construct was transferred into *Agrobacterium tumefaciens* strain GV3101 and was used for *Agrobacterium* mediated transformation of plants. The expression of the protein in transgenic lines was confirmed by immune-dot blot assay and SDS-PAGE.

Keywords: HDA19, Recombinant protein, Nicotiana bentamiana, pB2GW7