Title Expression of ethylene receptors Dl-ERS1-3 and Dl-ERS2, and ethylene response during flower senescence in Delphinium

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Abstract

To clarify the relationships of flower senescence, especially sepal abscission, and ethylene receptor gene expression in different flower parts, we isolated two cDNAs encoding ethylene receptors *Dl-ERS1-3* and *Dl-ERS2* from *Delphinium* flowers. Deduced polypeptides possessed no response regulator domain, indicating that they belong to a family of ethylene response sensor (ERS) ethylene receptors. *Dl-ERS1-3* and *Dl-ERS2* exhibited constitutive levels during flower senescence. Exogenous ethylene increased transcript levels in sepals, which are influenced by ethylene but not in gynoecia and receptacles, which produce ethylene. It was suggested that expression of ethylene receptor genes under ethylene exposure was differentially regulated in each organ of the flower.

Abbreviations: DAA, day(s) after anthesis; EIN, ethylene insensitive; ETR, ethylene resistant; ERS, ethylene response sensor; PCR, polymerase chain reaction; RT, reverse transcription