

**Title** Expression of ethylene receptor gene from *Oncidium* Gower Ramsey during Dower senescence

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#### **Abstract**

The process of flower senescence is influenced by the plant hormone, ethylene. In *Arabidopsis*, ethylene perception is controlled by a family of five genes, including *ETHYLENE RESPONSE 1 (ETR1)*, *ETHYLENE RESPONSE SENSOR 1 (ERS1)*, *ETHYLENE RESPONSE 2 (ETR2)*, *ETHYLENE RESPONSE SENSOR 2 (ERS2)* AND *ETHYLENE INSENSITIVE 4 (EIN4)*. They fall into two subfamilies based on their sequence similarities. In flower, it has been reported that similar set of genes are also involved. We are interested in studying changes in gene expression in ethylene signaling during senescence of orchid flowers. Total RNA was extracted from the self-pollinated *Oncidium* Gower Ramsey flowers followed with reverse transcriptase-polymerase chain reaction (RT - PCR). The results demonstrated that we have cloned an ethylene gene named *ER2<sub>5</sub>*, which encodes for a protein that has a missing region in the histidine kinase domain as compared to the sequence of ER protein for a similar orchid hybrid. In addition, expression of the isolated gene was detected by real-time RT-PCR at a very low level in the tested flower tissues, as well as in roots. Our results suggest that *ER2<sub>5</sub>* may be involved in the development of different plant tissues.