

**Title** The role of ethylene receptors in avocado ripening  
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#### **Abstract**

To elucidate the role of ethylene receptors in avocado ripening and storage, we have isolated avocado (*Persea americana* Mill. 'Arad') homologues of the ethylene receptor genes, referred to as *PaETR* and *PaERS1*. The basal levels of *PaETR* and *PaERS1* mRNA in avocado mesocarp were very low at harvest and were hyper-induced by exogenous ethylene treatment. The expression of both genes also increased in parallel to the onset of climacteric ethylene peak, suggesting that increase in endogenous ethylene leads to increase in these genes' expression. Application of the ethylene inhibitor, 1-methylcyclopropene (1-MCP) at harvest delayed ethylene production and down-regulated expression of *PaETR* and *PaERS1* genes. *PaETR* mRNA expression in tissues taken from various distances from the seed revealed that the expression was highest close to the base of the seed and was reduced gradually toward the blossom end. We suggest that ethylene receptors are involved in regulation of ethylene responsiveness during ripening and act to protect the tissue against ethylene injury.