

Title The mitochondrial elongation factor LeEF-Ts_{mt} is regulated during tomato fruit ripening and upon wounding and ethylene treatment

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Abstract

A gene encoding an elongation factor LeEF-Ts_{mt} that participates in the protein synthesis process in mitochondria shows strong expression in ripening fruit as compared to other organs. It is strongly up-regulated during the first stages of the ripening process in parallel with the climacteric rise in respiration. *LeEF-Ts_{mt}* expression is stimulated by ethylene, wounding and high temperature but ethylene-insensitive mutants exhibit normal expression. Transgenic fruit have been generated in which *LeEF-Ts_{mt}* has been constitutively up- and down-regulated. Surprisingly, altering the expression of the gene by genetic transformation with antisense and sense *LeEF-Ts_{mt}* constructs did not affect the pattern of respiration and ethylene production during ripening and upon wounding. In addition, expression of the alternative oxidase gene which is known to play an important role in respiratory climacteric was not affected. Possible reasons for the absence of effect on respiration of variations of *LeEF-Ts_{mt}* gene expression are discussed.