

**Title** Transformation of *Kalanchoe blossfeldiana* for ethylene insensitivity  
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#### **Abstract**

*Kalanchoe blossfeldiana* leaf explants were infected and transformed with *Agrobacterium tumefaciens* harbouring the plasmid pBEO210. This construct contains the mutated ethylene receptor gene *etr1-1* from *Arabidopsis thaliana* under the control of the flower-specific *fbp1*-promoter from *Petunia*. Flowers of eight putative transgenic T0 plants exhibiting a significant NPTII protein content showed lower ethylene sensitivity than control plants after ethylene exposure. One of the transgenic lines (line 324) showed altered vegetative and flowering architecture and infertility. The T0 line with lowest ethylene sensitivity (line 300) was analyzed for expression and copy-number of the *etr1-1* gene and crossed with the ethylene-sensitive cultivar 'Celine' to create progeny. The *etr1-1* gene was found to be expressed in petals and stamens but not in carpels, sepals and leaves, confirming that the *fbp1* promoter induces *etr1-1* expression in a flower-specific manner. Southern blotting, segregation data from the crossing, and PCR analysis of progeny plants revealed two unlinked T-DNA copies in line 300, which are segregated in Mendelian fashion to T1 plants. T1 plants with only one T-DNA copy are as ethylene resistant as the T0 plants and may be useful in breeding to confer ethylene insensitivity to other *Kalanchoe* cultivars.