EFFECT OF GENOTYPE ON TRANSFORMATION EFFICIENCY OF AVOCADO EMBRYOGENIC CULTURES

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An efficient transformation protocol using *A. tumefaciens* and somatic embryos as the target material has been established for avocado. Embryogenic cultures with globular stage structures (1-2 mm in length) were inoculated with *A. tumefaciens* strain AGL1 harbouring the plasmid pBINUbiGUSint which contained neomycin phosphotransferase II (*nptII*) and β-glucuronidase (*uidA*) as marker genes. Transgenic embryos were obtained after 5 months, following progressive increases of kanamycin concentration in selection medium. Using this protocol, the genotype effect on transformation efficiency has been evaluated. Embryogenic lines derived from zygotic embryos of cultivar Duke 7: D2, D2.3 and D6, showed transformation rates ranging from 0.8% to 3.3%.

This protocol is currently being used to obtain transgenic avocados with increased tolerance to *Rosellinia necatrix*, one the main problems of avocado orchards in southern Spain. Embryogenic line D.6 is being transformed with the NPR-1 gene from *A. thaliana*. The NPR1 protein has important regulatory functions in transduction of SA and JA/ethylene signals leading to acquired resistance responses.