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Genetic transformation of sweet orange to overexpress a *CsPR-8* gene aiming for *Candidatus* Liberibacter asiaticus resistance

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A strategy to produce HLB-resistant citrus using genetic engineering is the overexpression of genes identified in the citrus genome. Plants respond to pathogen attacks by producing several pathogenesis-related (PR) proteins. Therefore, individual PR overexpression in transgenic plants can lead to an increased resistance. In this study, we have chosen to use one *PR-8* isoform cloned from *Citrus sinensis* (*CsPR-8*). The PR-8 is an endochitinase that also has lysozyme activity, to be potentially used against bacterial attacks. We constructed an expression transformation vector (pCAMBIA2201) containing the *CsPR-8* gene and the selection gene *npt*II that confers kanamycin resistance in plants, both driven by the CaMV35S constitutive promoter. Epicotyl segments collected from *in vitro* seedlings of 'Hamlin' sweet orange (*Citrus sinensis* L. Osbeck) were used for transformation via *Agrobacterium tumefaciens* strain EHA105. The developed shoots were excised from the explants and *in vitro* grafted onto Carrizo citrange [*C. sinensis* x *Poncirus trifoliata* (L.) Raf] seedlings. The grafted plants were analyzed by PCR, using specific primers for detection of the *npt*II gene. Acclimation of transgenic plants is under way in order to be transferred to the greenhouse. These plants will be analyzed by Southern blot to confirm the integration of the transgene and by RT-qPCR to evaluate the transgene expression, prior to their evaluation for *Candidatus* Liberibacter asiaticus resistance.