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Superoxide dismutase (SOD) gene transferred into cultivars and breeding lines of *Petunia hybrida*

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Objectives

To develop new petunia cultivars resistant to environmental stress, we have conducted genetic transformation for introduction of superoxide dismutase (SOD) gene.

Materials and Methods

Four cultivars and 15 breeding lines of *Petunia hybrida* were cultured on MS medium supplemented with 1.0 mg/L BA and 2 mg/L IAA after co-culturing with *Agrobacterium tumefaciense* including SOD gene isolated from *Escherichia coli*. The host plants were 4 cultivars (Millenium White, Glory Red, Glory Blue, and Glory Purple) and 15 breeding lines. Kanamycin was used as a selective agent. Leaf segments were inoculated with the disarmed strain *Agrobacterium tumefaciens* strain GV3101 containing pBI121 vector which SOD gene was introduced as sense in the direction. The shoots survived at the first selection medium containing 50 mg/L kanamycin and 400 mg/L cefortaxime for 4~6 weeks were transferred to the second selection medium containing 100 mg/L kanamycin and 400 mg/L cefortaxime for 3~4 weeks. To confirm the putative transgenic plants, PCR analysis was conducted using the neomycin phosphotransferase ? (*npt* II) and SOD gene specific primers. Transgenic plants, which were confirmed by PCR analysis, were transferred to MS medium containing 200 mg/L cefotaxime for rooting for 3 weeks.

Results and Discussion

The number of plants, which were survived on the second selection medium, was as many as 75. From PCR analysis, 58 plants derived from 4 cultivars and 2 breeding lines were found to contain both *npt II* and SOD genes.

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