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The effecting factors for particle gun bombardment were studied in *Dendrobium* Jaquelyn Thomas. Three different plasmids, pActin1-D, pAHC27, and P2K7, containing different promoters, Act-1, Ubi-1, and CaMV35S, respectively, fused to *β-glucuronidase* (*gus*) gene and Nos terminator were introduced into the orchid sepal. The Gus activity under the control of Act-1 and CaMV35S promoters showed high level of expression, while Ubi-1 promoter was poor. Transgenic orchids were established by co-bombardment of pMNK1005 and pBpSA13 or pC1SA12. The pMNK1005 contained *hygromycin phosphotransferase* (*hgh*) gene fused to *green fluorescent protein* (*gfp*) genes driven by a Ubi-1 promoter. The plasmids pBpSA13 and pC1SA12 consist of *B-peru* and *C1* genes of maize transcription factors, respectively, under controlled by Act-1 promoter. The transgenic orchid was sequential screened on medium supplemented with 5mg/l, 25mg/l, and 30mg/l hygromycin. The high transformation efficiency of 19.87% and no-chimera cells were obtained. The integration of the transgene in chromosome of transgenic plantlets was confirmed by PCR and Southern blot hybridization. The results of co-transformation with two groups of transcription factor gene families showed the accumulation of red-purple pigments in the epidermal layer of the leaf sheaths of independent transgenic lines compared with the green tissues of the untransformed plantlet. Northern blot and RT-PCR analysis were utilized in determine expression of the genes involved in the anthocyanin biosynthesis.

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