P 79 Transformation of *Artemisia adamsii, endemic to a Gobi desert*, with CLP, Dhn5 to Enhance Environmental Stress Tolerance

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Objectives

Freezing and drought tolerance in plants are very important for survival in the desert. In an effort to reduce desertification in Gobi, a molecular breeding of *Artemisia adamsii* using the CLP and Dhn5 cDNAs from barley (*Hordeum vulgare* L.) is being performed by constructing those genes in pGA748 under 35S promoter and introducing them into *Artemisia adamsii* via *Agrobacteria*. The transgenic cell lines were established and presence of the transgene was confirmed.

Materials and Methods

1. Materials
   - plant *Artemisia adamsii*
   - vector: pGA748
   - medium: MSA (modified MS medium with NAA, BA added), MSAR (regeneration medium)
2. Methods: Vector construction, *Agrobacterium*-mediated Transformation, PCR, Callus culture

Results and Discussion

- We had found the optimal hormone combination of NAA 0.05 mg/L and BA 0.5 mg/L for the best growth of callus of *Artemisia adamsii*. In addition, the highest rate of callus induction was observed with hypocotyl. as an initial explant to start.
- The CLP, DHN5 gene were constructed in pGA748 and introduced into *Agrobacterium* (LBA4404).
- The explants of leaf, stem, root from 14 weeks-old seedling of *Artemisia adamsii* were cocultivated with *Agrobacterium tumefaciens* and several transgenic cell lines were stably established.
- An introduction of the CLP gene was confirmed by PCR with CLP primer as well as NPR Ⅱ primer showing the expected bands of 430 bp and 700 bp respectively.

Figure 1. Plants of *Artemisia adamsii* grown in the pot.

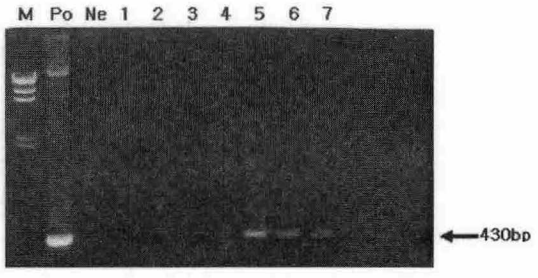

Figure 2. Confirmation of the presence of CLP gene introduced in transgenic callus cell by PCR with CLP primers.

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