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# Turnover of D1 Protein in Stress Resistant Transgenic Chrysanthemum

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## Objectives

To determine the turnover of D1 protein in stress resistant transgenic Chrysanthemum

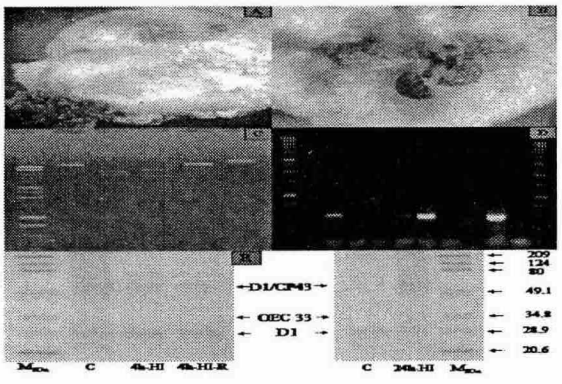
## Materials and methods

1) Plant materials: Chrysanthemum (*Dendrathema grandiflourm*)

2) Methods: Stress resistant transgenic plants will be produced by transferring the gene in *Chrysanthemum*. From the PSII complex, various polypeptides such as D1, D2, CP 43, and CP 47 will be isolated. Degradation and repair mechanism of D1 protein will be study with the use of various techniques like Western blotting and 2-D SDS-Urea/PAGE, Southern, Northern blotting, RT-PCR.

## Result and Discussion

Light, low temperature and salt stresses causes significant damage to photosystem II (PSII) membrane proteins. Among membrane proteins, cleavage and degradation,and reassembly of the D1 protein and the other subunits of PSII are the fundamental processes under above stresses. Using Gene gun, cold regulated gene (BN115) hasbeen injected in Chrysanthemum and transgenic plantlets have been produced successfully on the selection media. After isolation of genomic DNA, PCR-amplification indicated the presence of cold regulated gene (BN115). Northern and Southern blotting on the transformants is in progress. High irradiance (HI) effect on the turnover of PSII polypeptides was also investigated. SDS/Urea-PAGE of isolated PSII polypeptides indicated the HI-induced degradation of D1 protein, formation of D1/CP43 and removal of OEC33. More detailed investigationwith the use of 2-D IEF/SDS-Urea PAGE, Western blotting with antibodies of specific polypeptides, Southern and Northern blotting, and PCR are in progress.

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