특강2

Flower-specific Gene Expression Directed by the Promoter of a Chalcone Synthase Gene from *Genitiana triflora* in *Petunia hybrida*

Dr. Saburo Yamamura

Iwate Biotechnology Research Center
22-174-4 Narita, Kitakami-shi, Iwate-ken 024
Japan

For analysis of the promoter of a gene for chalcone synthase (*GTCHSI*) form *Gentiana triflora*, a cDNA was cloned for chalcone synthase (CHS) form a cDNA library of petals of *Gentiana*. Using the sequence of *GTCHSI*, the promoter region of *GTCHSI* was cloned by the inverse polymerase chain reaction. The promoter was fused to a gene for β-glucuronidase (GUS) and the construct was introduced into *Petunia hybrida*. Measuroments of the GUS activities of transformants indicated that the *GTCHSI* promoter strongly directed the expression of GUS in flower libms, while the 35S promoter of cauliflower mosaic virus (CaMV) directed expression of the reporter gene in all tissues. Histochemical staining of GUS activity revealed that the *GTCHSI* promoter strongly directed the expression of GUS in the inner epidcrmis, at sites where most of the anthecyapin accumulated. The sequence of the *GTCHSI* promoter included a consensus sequence of the MYB protein-binding site, five consensus sequences of the MYC protein-binding site, one core sequence of a G-box and three P-box-like sequences.

Keywords: chalcone synthase, promoter, *Gentiana triflora*, flower-specific gene expression, *Petunia hybrida*