Ⅱ-113

Quinclorac, an auxin-type herbicide, induces embryogenic callus and somatic embryogenesis of *Chelidonium Majus* L.

Department of Crop Science, Chungnam National University
Woo Tae Park, Sang Un Park*

Objectives

Quinclorac is a new auxin-type herbicides which was introduced by BASF Aktiengesellschaft in 1985. Quinclorac applied to embryogenic callus and somatic embryo induction of *Chelidonium Majus* tissue cultures. Embryogenic callus and somatic embryos were induced from In the intact root cultures of *C. Majus* using quinclorac, 0.5 mg L^{-1}quinclorac was the most suitable concentrations for callus induction and somatic embryogenesis. Quinclorac successfully induced embryogenic callus and somatic embryos from tissue cultures of *C. Majus.* In these results, we propose quinclorac as a new plant growth regulator for plant tissue culture.

Materials and Methods

○ Plant Material

Seeds of *Chelidonium Majus* were collected in experimental farm of Chungnam National University. The seeds were placed on 25 mL of agar-solidified culture medium in petri dishes (100 x 15 mm). At least 10 seeds were cultured in each petri dish.

○ Methods

For embryogenic callus and somatic embryo induction from different tissue of *Chelidonium Majus,* the medium was supplemented with various concentrations of quinclorac and 2,4-D (0.01, 0.05, 0.1, 0.5, 1 and 2mg L^{-1}). The explant tissues were subcultured every 2 weeks on MS medium with quinclorac and 2,4-D. Mature somatic embryos were transferred to hormone-free solid MS medium to promote somatic embryo germination and plant development. Isolated somatic embryos were incubated at 25 ℃ in a growth chamber with a 16 h photoperiod under standard cool white fluorescent tubes (35 mol s^{-1} m^{-2}) for 5 weeks.

Results

Chelidonium Majus L. (Papaveraceae) has a long history as being useful for the treatment of many diseases in European and Asian countries. We established the protocol of somatic embroygenesis in *Chelidonium Majus* L. using quinclorac. Embryogenic calli and somatic embryos were induced from intact roots of *C. Majus* cultured on MS medium supplemented with 0.1-1.0mg L^{-1} quinclorac and 1.0-2.0 mg L^{-1} 2,4-D. 0.5 mg L^{-1} quinclorac and was the most suitable concentrations for callus induction and somatic embryogenesis(Figure.1).

(Corresponding author) : Sang Un Park E-mail : supark@cnu.ac.kr Tel : 010-6379-5519

*시험성적

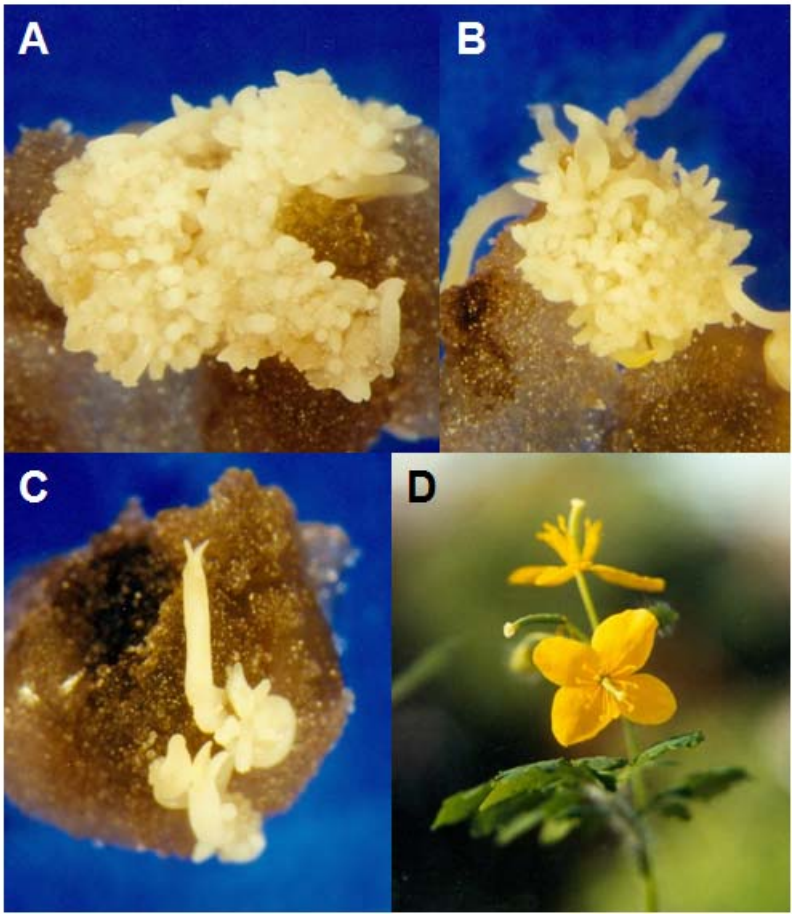

Figure 1. Somatic embryogenesis and plant regeneration in *Chelidonium Majus* L. A) Numerous globular and heart B) heart and torpedo C) cotyledon stage somatic embryos are shown developing on the surface of embryogenic calli cultured on solid MS medium supplemented with 0.5 mg L^{-1}quinclorac. D) Regenerated plant flowered within 3 months.