P 54

Somatic Embryogenesis and Plant Regeneration from Seeds of *Dicentra spectabilis* (L.) LEM

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Objectives

Dicentra spectabilis L. (LEM), one of the famous wild plants in korea, of which the flower is very beautiful, sometimes using as blooming plant, in garden, in park, and in terrace all over the country. However, there are some characteristic problem, to develope blooming plants, such as a dull color, short blooming time, and long length of the plants, and so on.

For transformation of *D. spectabilis*, We carried out regeneration via somatic embryogenesis from seeds of wild *Dicentra spectabilis L.* (LEM). To progress callus induction, mature seeds were cultured by cold treatment.

Materials and Methods

1. Materials: Seed and the callus from *Dicentra spectabilis* (L.) LEM .

2. Methods: Somatic embryogenesis, Plant regeneration

Results and Discussion

After culture for 90d, the initial callus were induced from seeds. The medium containing 1.0 mg/l 2.4-D was the most efficiency (90.84%) for inducing embryogenic calli.

To shorten of callus induction periods, we carried out low temperature treatment. The fastest initial callus induction was observed in use of low temperature treatment in 4℃ for 30 d after culture during 13 d. The highest callus induction rate also were observed in use of low temperature treatment in 4℃ for 30 d. In the presence of 1.0 mg/l KIN or 2.0 mg/l BAP produced the highest frequency of globular embryos producing topedo- and cotylendon somatic embryos.

Cotyledon somatic embryos at the cotyledonary stage were collected from the previous expe-riments and cultured on the same medium for 4 more weeks.

In the presence of 1.0 mg/l KIN or 2.0 mg/l BAP were also the highest efficiency for germ-ination. But, on the media containing 1.0 mg/l of KIN, somatic embryos were developed into normal plantlets, whereas, on the media containing 2.0 mg/l of BAP, somatic embryos were developed into abnormal *plantlets*.

The germinated plantlets were subcultured on 1/2-strength MS basal medium supplemented with 15 g/l sucrose, phytagel (2, 4 or 6 g/l). The best condition of root development were obs-erved on 1/2-strengh MS basal medium supplement 15 g/l sucrose, 2 g/l phytagel. In the pres-ent of 2 g/l phytagel, roots formation rate was appeared 64.2% of plantlets. So we deduced that the initial roots were induced in medium containing low-strength phytagel (2 g/l).

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