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Formation of Embryogenic Callus from Mature Zygotic Embryos of *Panax ginseng* C.A. Meyer

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Objectives

It was examined to select rapid and efficient plant growth regulators for inducing callus and somatic embryos from mature zygotic embryos of Korean ginseng (*Panax ginseng* C.A. Meyer).

Materials and Methods

1. Materials

Korean ginseng seeds: Seeds after harvest in summer were stratified in humidified sand for about 3 months at cool area to induce seed dehiscence and the dehisced seeds were stored at 4°C. Fully matured zygotic seeds with 5-6mm in length were used for examination.

2. Methods:

Ginseng seeds after removing seed coat were sterilized with 1% NaOCl for 1hr and mature zygotic embryos were dissected and cultured on MS medium containing 1, 2mg/L 2,4-D in combination with 0.1mg/L kinetin.

Results and Discussion

Calli were induced from mature zygotic embryos of *Panax ginseng* cultured on MS medium supplemented with plant growth regulators under the dark condition at 23±1°C. The germination of zygotic embryos on MS medium containing 1, 2mg/L 2,4-D in combination with 0.1mg/L kinetin was inhibited. Callus formation was observed from the zygotic embryo after 6 weeks of culture. Most calli were formed from cotyledonary region than from embryo axis. Only a few callus formed from epicotyl region. Though callus formation rate was high, adding 0.1mg/L kinetin seemed to be inhibit embryogenic callus formation in 2,4-D containing medium because of forming friable and whitish callus. The medium containing 1mg/L 2,4-D and 0.1mg/L kinetin had a better on embryogenesis than 2mg/L 2,4-D and 0.1mg/L kinetin. For further development, the embryogenic calli were subcultured on MS medium supplemented with 1.0mg/L 2,4-D. The cotyledonary stage somatic embryos were transferred to 1/2 MS medium supplemented with 1.0mg/L GA_3 for plant formation.

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