

## **P 65** Effect of Phenylacetic Acid on Embryo Formation in Microspore Culture of *Paeonia lactiflora*

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### Objectives

Phenylacetic acid (PAA) is naturally occurring plant hormone that has auxin-like activity. It is stable in the presence of basal salts, withstands autoclaving, and is not degraded during storage. However, only a very limited number of studies has been done to examine the effects of PAA in tissue culture systems. The objectives of this study were to investigate the effects of PAA on embryo production in anther and microspore culture of *Paeonia lactiflora*.

### Materials and Methods

1. Plant materials: Anther and pollen of peony 'Euseongjakyak'
2. Anther culture:
  - Anthers pretreated for 10 days at 5°C.
  - Medium: anther culture; MS + 0 – 100 mg/L PAA + 40 g/L sucrose + 2 g/L gelrite embryo formation: MS + 40 g/L sucrose + 2 g/L gelrite

3. Microspore culture;

- Culture method: shed pollen culture
- Medium : MS + 0 – 10 mg/L PAA + 40 g/L sucrose

### Results and Discussion

The anthers and microspores of a herbaceous peony were cultured on MS medium with 0 to 100 mg/L PAA. MS medium with 2 mg/L PAA was superior to hormone-free medium in enhancing of direct embryogenesis and producing of normal embryo with two cotyledon from anther. However, the increase of PAA concentration promoted to callus formation from the anther. PAA affects significantly on the division of microspore and embryo formation in shed pollen culture. Best results was obtained from a medium supplement with 2 mg/L PAA. The precultured-anther for 10 days on the medium with 2 mg/L PAA was effective for embryo formation from shed microspore of herbaceous peony.