B-7(04-2-39)

Efficient micropropagation via somatic embryogenesis of Phytophthora resistant cultivar *Aralia elata* S. 'Zaoh',

Ji Ah Kim, Heung Kyu Moon*, Ho Duck Kang[1]

Biotechnology Division, Korea Forest Research Institute(KFRI), Suwon, Kyonggido 441-350, Korea
[1]Depart. of Forestry Resources, Dongguk University, Seoul 100-715, Korea

Objectives

Spring fresh buds of *Aralia elata* has long been used for edible vegetable and medicinal purposes and are famous for farmers cash crops in Korea. In nursery cultivation of the species, an effective control of the Phytophthora infection is one of important factors. The cultivar 'Zaoh' of the species is known to resistent for the disease. In this study, we try to develop an efficient micropropagation technique via somatic embryogenesis.

Material and Methods

Calluses were induced from different explants *in vitro*. MS medium containing 2,4-D, TDZ with or without L-Glutamine, 3% sucrose and 0.3% gelrite was used. For normal somatic embryo induction, half-strength MS medium with different gelling agents combined with 4 levels of ABA was tested. All cultures were maintained at 25±1°C and a 16-h photoperiod with cool white fluorescent light of 40μ mol m^{-2} s^{-1}. The converted plantlets (3-4cm in length) were transplanted to artificial soil mixture and cultivated in greenhouse condition.

Results and Discussion

Depending on explants, the optimum PGR requirement was differed in callus and somatic embryos (SEs) induction. When root and petiole explants were used, most SEs were induced on MS medium with 1.0 mg/L 2,4-D, whereas leaf explants appeared to require MS + 1.0 mg/L

2,4-D+ 0.01 mg/L TDZ and 1g/L L-Glutamine. The induction patterns of SEs also differed depending on the explants ; IEDC type SEs were induced from root and petiole explants after callus differentiation, however most PEDC type SEs were induced from leaf explants directly. Normal looking SEs were formed by ABA treatment and the optimum level appeared to be 0.2mg/L. Generally, SEs induction was not influenced by different gelling agents, though slightly better results obtained on gelrite gelled medium. On 1/2MS basal medium, germinating SEs were readily converted to plantlets. Above results suggest that feasible micropropagation of the cultivar 'Zaoh' is possible via somatic embryogenesis.

*Corresponding author : Heung-Kyu Moon, Tel : 031-290-1163, E-mail : hkmoon@foa.go.kr