(05-2-13)

Somatic embryogenesis and plantlet regeneration using mature zygotic embryos of a rare and endangered tree species, *Oplopanax elatus*

HK Moon*, JA Kim, SY Park, YW Kim, SG Son, HD Kang[1]
Biotechnol. Division, Korea Forest Research Institute (KFRI), Suwon, Gyonggido 441-350, Korea
[1]Dept. Forest Resources, Dongguk University, Seoul 100-715, Korea

Objectives

***Oplopanax elatais* is a rare and endangered medicinal plant. Because of its high medicinal value, the species has been intensively over-exploited. Conventional reproduction by seeds is ineffective. This study was conducted to develop an efficient micropropagation technique using somatic embryogenesis for the species.**

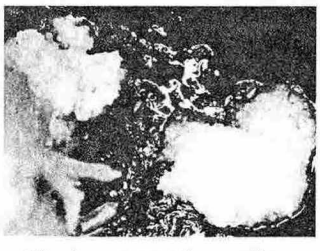
Materials and Methods

1. Explants - zygotic embryos of mature seeds
2. Medium and methods

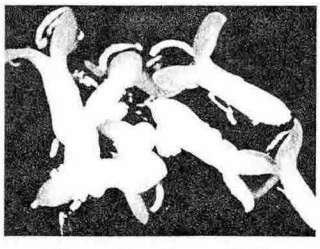
① Embryogenic callus induction - MS+1.0 mg/L 2,4-D, 1g/L glutamine
② Somatic embryo induction - 1/2MS+0.1 mg/L ABA, 0.02% A.C. 3% sucrose, 0.3% gelrite
③ Embryo germination - MS+1.0~5.0 mg/L GA_3, 5% sucrose, 0.5% gelrite

Results and Discussion

Callus induced from mature seeds was capable of producing somatic embryos through the formation of typical embryogenic cells. Embryo forming calli could be screened with specific characters of soft and fragile cells with white in color. In addition, embryo forming calli developed somatic embryos via processes of normal somatic embryogenesis on 1/2 MS medium supplemented with 0.1mg/L ABA and germinated in early stage of somatic embryos. The somatic embryos developed to torpedo stage were transferred for germination on 1/2 MS medium supplemented with 1.0 mg/L GA_3. They grew rapidly and regenerated small plantlets after expanding cotyledons on 1/2 MS medium with 1.0~5.0 mg/L GA_3. Converted plantlets were transferred to soil, acclimatized and grew normally without any morphological abnormalities.


Embryogenic callus


Mature stage SEs


Germinating SEs


Regenerated plantlet

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