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油松体细胞无性系的建立

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摘要 以油松(Pinus tabulaeformis)种胚为外植体, 通过器官发生途径建立体细胞无性系。以MS为基本培养基, 在芽的诱导和增殖培养基中, 附加植物激素, 以6BA+KT和NAA效果最好, 两者的配比为5—10:1, 6BA和KT的浓度分别均不超过1mg/L。同时根据培养物的发育状态交替使用活性炭, 则对芽的增殖有明显的促进作用。选择发育状态较幼嫩的刚抽茎的外植体, 诱导生根, 在1/2 MS+KT 0.1+IBA0.1+NAA 0.1mg/L的培养基中, 生根率达32.4 %。体细胞胚胎发生途径建立细胞无性系也已取得成功, 筛选出可继代培养的胚性胚柄团无性系, 在胚轴和子叶上诱导出成熟的体细胞胚并获得完整小植株。

关键词 油松 细胞无性系 成熟胚 胚性胚柄团 器官发生 胚性愈伤组织

分类号

Establishment of Somatic Cell Clones of Chinese Pine

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Abstract

In this study , somatic cell clones of Chinese pine were established through organ formation process with its mature embryos as explants. MS was used as the basic medium. The addition of plant growth regulators such as 6-BA+KT and NAA to the media was found supperior in buds induction and proliferation. The effective ratio of 6-BA+KT to NAA was 5-10:1 , and the concentration of 6-BA and KT should not be higher than 1 mg/ L. In the medium for bud proliferationm acticated carbon was added alternately according to the developing stage of the cultured material, and it could promote the proliferation of buds. For root induction, the young shoots which had just sprouted were transferred to the medium of 1/2 MS +(KT 0.1 + IBA 0.1+ NAA 0.1mg/ L). The rooting rate was as high as 32.4% . The somati clones were also established successfully through somatic embryogenesis process.Cell clous of embryonic suspensor mass were selected and could be propagated continuously. Mature somatic embryos were induced from hypocotyl and cptyledon cultured in vitro and the plantlets were obtained.

Key words Chinese pine Clones pf somatic cell Embryo Embryonal-suspensor mass Organ formation Embryonal callus

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