

放线菌素D和环己亚胺对伊贝母胚性愈伤组织中胚性细胞团和球形胚发生及大分子代谢动态的影响*

王仑山, 丁惠宾, 林洁云

兰州大学生物系 730000

收稿日期 修回日期 网络版发布日期 接受日期

摘要 伊贝母(*F. pallidiflora* Schrenk) 胚性愈伤组织接种于NAA1.0mg/L+6-BA2.0mg/L的MS培养基上, 在培养10天前可产生大量单细胞到多细胞胚性细胞团, 培养10至15天, 逐渐形成大量球形胚。利用这样一个实验体系, 在培养0、1、2、3和4天后加入放线菌素D(AMD, 20 μ g/ml)和环己亚胺(CHM, 20 μ g/ml), 继续培养至第6天, 分析大分子代谢动态和观察胚性细胞团的形成情况; 培养6和10天后加入同样浓度的AMD和CHM, 继续培养至第15天, 分析大分子代谢动态及观察球形胚形成情况。结果表明: (1) 培养0、1、2、3和4天加入AMD的分别抑制胚性细胞团的100%、63%和45%, 加入CHM的抑制100%、85%、75%, 培养6和10天后加入CHM抑制球形胚的100%和75%; (2) DNA、RNA和蛋白质在胚性细胞团和球形胚形成时出现两个峰值, 其中RNA变化剧烈, 最早出现峰值。AMD和CHM分别抑制RNA和蛋白质的合成; (3) 过氧化物酶同工酶带在胚性细胞团和球形胚形成过程中顺序表达, AMD和CHM分别在转录和翻译水平上对其进行规律性抑制。根据以上结果, 本文对伊贝母体细胞胚胎发生的机制进行了初步讨论。

关键词 [伊贝母](#), [体细胞胚胎发生](#), [核酸](#), [蛋白质](#), [过氧化物酶同工酶](#), [放线菌素D](#), [环己亚胺](#)

分类号

The Influence of Actinonycin D and Cyloheximide on the Formation of the Masses of Embryogenic Cells and the Globular Embryoes and on Metabolic kinesis of Macromoleculs in Embryogenic Calli of *F.Pallidiflora* Schrenk*

Wang Lunshan, Ding Huibin, Lin Jieyun

Seapartment of Biology, Lanzhou University 730000

Abstract

The embryogenic calli of *F. pallidiflora* Schrenk cultured on MS medium supplemented with MAA(1.0mg/L)+6-BA(2.0mg/L)produced a great number of the embryogenic cellular masses ranging from single cell to mutlicells after 10 days in culture. If it was cultured for 10 to 15 days, a great number of the globular embryoes formed. Using this experimental system, AMD(20mg/ml) and CHM (20mg/ml)were added to the medium after cultured 0,1,2,3,and 4days respectively. When it went on culture for 6 days, the metabolic kinesis of macromolecul was analysed and the formation of the masses of embryogenic cells was observed; another group of experiment is that after the subculture was cultured for 6 days and 10 days respectively, same concentration of AMD and CHM were added to the medium, when the culture continued for 15 days the metabolic kinesis of macromolecul was analysed the formation of the globular embryo was observed. The results are as follows: (1) Treatment with AMD at 0,1,2,3 and 4 days inhibited 100%, 63% and 45% of the masses of embryogenic cells respectively. CHM inhibited 100%, 85% and 75% respectively. Treatment with CHM at 6 and 10 days inhibited 100% and 75% of the globular embryoes respectively. (2)DNA, RNA and protein appeared a two-peak curve during the formation of the masses of embryogenic cells and globular embryoes respectively. The change of RNA is marked. The first peak curve of RNA appeared 3 days after the culture. AMD and CHM inhibited synthesis of RNA and proein respectively. (3)The peroxidase isoenzyme expressed in proper order in the course of the formation of the masses of embryogenic cells and the globular embryoes. Inhibition of AMD and CHM imposed on transcription and translation respectively.

Key words [F. pallidiflora Schrenk](#) [Somatic embryogenesis](#) [Nucleic acid](#) [Protein](#) [Peroxidase isoenzyme](#) [AMD](#) [CHM](#)

DOI:

扩展功能

本文信息

- ▶ [Supporting info](#)
- ▶ [PDF\(1238KB\)](#)
- ▶ [\[HTML全文\]\(0KB\)](#)
- ▶ [参考文献](#)

服务与反馈

- ▶ [把本文推荐给朋友](#)
- ▶ [加入我的书架](#)
- ▶ [加入引用管理器](#)
- ▶ [复制索引](#)
- ▶ [Email Alert](#)
- ▶ [文章反馈](#)
- ▶ [浏览反馈信息](#)

相关信息

- ▶ [本刊中 包含“伊贝母, 体细胞胚胎发生,核酸,蛋白质, 过氧化物酶同工酶,放线菌素D, 环己亚胺”的 相关文章](#)
- ▶ [本文作者相关文章](#)

- [王仑山](#)
- [丁惠宾](#)
- [林洁云](#)

