棉花学报
Cotton Science
主管：中国科学技术协会
主办：中国农学会
承办：中国农业科学院棉花研究所

棉花学报 » 2011, Vol. 23 » Issue (3) :259-264 DOI: 1002-7807（2011）03-0259-06

新陆早32号、33号的体细胞胚胎发生和植株再生比较研究

刘 丽，王 娟，王旭文，周小凤，孔宪辉，余 渝*

新疆农垦科学院棉花研究所，石河子 832000

Comparative Study of Somatic Embryogenesis and Plant Regeneration in Cotton Cultivars from Xinluzao 32 and Xinluzao 33（*Gossypium hirsutum* L.）

LIU Li, WANG Juan, WANG Xu-weng, ZHOU Xiao-feng, KONG Xian-hui, YU Yu* *

Cotton Research Institute, *Xinjiang Academy of Agricultural and Reclamation Sciences*, *Shihezi*, *Xinjiang* 832000, *China*

摘要 参考文献 相关文章

Download: PDF (525KB) HTML 1KB Export: BibTeX or EndNote (RIS) Supporting Info

摘要 以新疆主栽品种新陆早32号、33号和对照YZ_1为研究材料，通过不同浓度的激素组合成功诱导获得了体细胞胚，并进一步发育成苗。研究发现，所用的12种激素组合均能有效诱导愈伤组织。虽然IBA+KT组合有利于诱导YZ_1和新陆早33号的快速分化，但在增殖生长过程中体细胞胚容易褐化、死亡；在2,4-D + KT组合中，0.1 mg · L^{-1}2,4-D + 0.1 mg · L^{-1} KT诱导新陆早33号的分化速度较快；新陆早32号在高比例2,4-D/KT激素组合（0.1 mg · L^{-1} 2,4-D + 0.2 mg · L^{-1} KT 和0.2 mg · L^{-1} 2,4-D + 0.5 mg · L^{-1} KT）促进下分化较快；新陆早33号的分化速度和胚胎发生的速度快于新陆早32号。对照品种YZ1下胚轴在低浓度激素组合甚至不加激素的情况下都能快速分化，在高浓度KT下容易褐化、死亡。3个材料在8个月内都成功得到再生苗。

关键词： 棉花 体细胞胚胎 植株再生

Abstract： An efficient somatic embryo procedure was developed to regenerate plantlets from hypocotyls of cotton cultivars Xinluzao 32 and Xinluzao 33. Calli were effectively produced on the medium with IBA/KT hormone regime, but calli were browned and went to death gradually during the process of proliferation. Embryonic calli of Xinluzao 33 appeared earlier on media with 0.1 mg · L^{-1}2,4-D+0.1 mg · L^{-1} KT hormone combination than on other media. Embryogenic calli were effectively initiated with high concentration of KT and 2,4-D in medium(0.1 mg · L^{-1} 2,4-D+0.2 mg · L^{-1} KT or 0.2 mg · L^{-1} 2,4-D+0.5 mg · L^{-1} KT). The speed of differentiation and embryogenesis of Xinluzao 33 were faster than that of Xinluzao 32. Embryogenic calli of YZ_1 were quickly initiated on media with low concentration(even no) hormone combination; with high concentration hormone of KT, the calli of YZ1 turned brown and went to death easily. The successful regeneration protocol established in this study can be used to improve cotton cultivars by genetic engineering.

Keywords： *Gossypium hirsutum* L. somatic embryogenesis regeneration

Received 2010-10-22;

Fund:

农业部转基因专项（2008ZX08005-002）

Corresponding Authors: xjyuyu021@sohu.com

About author: 刘 丽（1979-），女，硕士，cottonliuli@sina.com

Service
把本文推荐给朋友
加入我的书架
加入引用管理器
Email Alert
RSS
作者相关文章
刘 丽
王 娟
王旭文
周小凤
孔宪辉
余 渝

引用本文:

刘 丽， 王 娟， 王旭文， 周小凤， 孔宪辉， 余 渝.新陆早32号、33号的体细胞胚胎发生和植株再生比较研究[J] 棉花学报, 2011,V23(3): 259-264

LIU Li, WANG Juan, WANG Xu-Wen, ZHOU Xiao-Feng, KONG Xian-Hui, YU Yu.Comparative Study of Somatic Embryogenesis and Plant Regeneration in Cotton Cultivars from Xinluzao 32 and Xinluzao 33（*Gossypium hirsutum* L.)[J] Cotton Science, 2011,V23(3): 259-264

链接本文:

http://journal.cricaas.com.cn:8082/mhxb/CN/1002-7807（2011）03-0259-06 或 http://journal.cricaas.com.cn:8082/mhxb/CN/Y2011/V23/I3/259