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农学—研究报告

马铃薯未授粉子房离体培养诱导双单体植株初探

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摘要:

以MS培养基为基本培养基，添加不同种类和浓度的生长调节剂，离体培养8个马铃薯普通栽培种（2n=4x=48）品种的未授粉子房，获得了青薯168和青薯7号的双单体小植株。花蕾4℃下预处理24~72 h的愈伤组织诱导率（51.24%~57.08%）比未预处理（9.35%）的明显提高。对青薯168和青薯7号而言，最佳培养基分别为MS+2-4-D 2.0 mg/L+ZT 0.1 mg/L+蔗糖30 g/L+琼脂7 g/L和1/2MS+GA3 0.5 mg/L+2-4-D 0.5 mg/L+KT 2.0 mg/L+BAP 2.0 mg/L+ ZT 0.2 mg/L+蔗糖20 g/L+琼脂7 g/L。品种对愈伤组织分化形成小植株的影响比培养基的影响要大。

关键词: 马铃薯,未授粉子房培养,离体培养,双单体植株

Induction of Dihaploid Plantlets of Potato Unpollinated Ovaries in Vitro

Abstract:

Calluses and dihaploid plantlets were obtained from unpollinated ovaries of Qingshu168 and Qingshu7 by the in vitro culture. The buds were preprocessed at 4℃ for 24-72 h, and their callus induction rate was remarkably increased, comparing with that of non-pretreatment. The most suitable differentiation medium for Qingshu168 was MS+2-4-D 2.0 mg/L+ZT 0.1 mg/L+Sucrose 30 g/L+agar 7 g/L, and for Qingshu7 was 1/2 MS+GA3 0.5 mg/L+2-4-D 0.5 mg/L+KT 2.0 mg/L+BAP 2.0 mg/L+ ZT 0.2 mg/L+sucrose 20 g/L+agar 7 g/L. It appeared that the plantlet differentiation mainly depended on cultivars.

Keywords: potato, unpollinated ovaries culture, culture in vitro, dihaploid plantlet

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