

## Single Protoplast of *Murraya paniculata* L. Jack Regenerated Into Plantlets

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**Abstract :** Isolated protoplast from embryogenic callus of orange Jessamine (*Murraya paniculata* L. (Jack) cultured and maintained under growth chamber at the temperature +25°C. The parameter observed are the plating efficiency, the number of spherical embryos, heart-shaped embryos-like structure, shoot formation, and plantlets obtained. Treatment was arranged with 0.0, 0.001, 0.01, 0.1 or 1.0 mg 1-1 Naphthalene acetic acid (NAA), and 0, 300, 500 mg 1/l malt extract (ME) and 0.M sorbitol in the medium with 2.5 % sucrose. Interaction between 0.001 mg/l NAA and 500 mg/l was observed the higher percentage of planting efficiency. For embryo development from callus, the media was added to 0.0 mg/l, 0.001 mg/l, 0.01 mg/l, 0.1 mg/l, 1.0 mg/l NAA, and 1.0 %, 2.0 %, 3.0 %, 4.0 % sucrose. Media supplemented with 0.01mg/l NAA, and 1.0% sucrose was found to be a suitable medium for the development of spherical somatic embryos. A combination of 0.1 mg/ indole acetic acid (IAA) and 0.1 mg/l zeatin constituted the spherical somatic embryo became heart-shaped embryos-like structure. A combination between GA3 0.1 mg 1/l GA3 and 0.1 mg 1-1 zeatin is looking high, growing the heart-shaped embryos-like structure to form a shoot. Cells were developed into spherical embryos and grew into heart-shaped embryos, and then spherical somatic embryos developed into shoot formation. Sequence from single protoplast to plantlets was obtained by using a low concentration of plant growth regulator and sucrose; This recovery of single protoplast to be completed plantlets is a new technology in plant cell culture, and this could be used in genetic engineering in citrus.

**Keywords :** heart-shaped-embryos-like-structure, *Murraya-paniculata*, plant-growth-regulator, spherical- somatic-embryo, single protoplast, glucose

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