Embryogenic cell lines from somatic embryos of grape (*Vitis vinifera* L.)

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Abstract: Somatic embryo formation occurred on leaf callus of grape (*Vitis vinifera* cv. Koshusanjaku). An embryogenic callus was induced from somatic embryo clusters cultured on vitamine-, inositol- and glycine-free Nitsch and Nitsch (1969) medium supplemented with 1.0 μM 2,4-D. This callus has retained a high embryogenic activity after repeated subculture on the same medium for over 2 years and has produced numerous embryos after transfer to a hormone-free medium.

The effect of cytokinin treatment on somatic embryogenesis from leaf callus was also examined. N-(2-chloro-4-pyridyl)-N'-phenylurea (KT-30) and N-(1,2,3-thiadiazol-5-yl)-N'-phenylurea (TAG), both synthetic cytokinins, were found to be effective for the induction of somatic embryogenesis. When leaf callus was induced by these cytokinins combined with 2,4-D at either 5.0 or 10.0 μM, somatic embryos were produced.

The regeneration of plantlets from culture anthers picked from anther culture derived plants in grape *in vitro*

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Abstract: The induction of plantlets by grape anther culture is difficult because only a few genotypes can induce plantlets from anthers and the frequency of plant regeneration is very low. The goal of the present study is to determine if the frequency of plantlet regeneration can be increased by the culture of anthers picked from the anther culture derived plants as it does in cereal crops. The grape inflorescences of V70 line, a line derived from the anther culture, which were in uninucleate pollen stage and the flower buds just separated, were inoculated on the B5 medium supplemented with 0.5 ppm 2,4-D, 2 ppm BA, 3 % sucrose, and cultured under 28 °C ± 2 °C for 1-1.5 months, and then transferred on regeneration medium (B5 supplemented with 4 ppm BAP and 0.2 ppm NAA). After 4 months, the embryoids regenerated from the calli of anthers, and plantlets formed when the embryoids were transferred onto shoot regeneration medium. The results showed that the frequency of plantlet regeneration from anthers picked from anther culture derived plants is higher than that from anthers picked from the stock plants. Thus, crosses between genotypes which can be induced to form plants from anther culture and others which cannot will possibly increase the inducible materials.