Development of Regeneration and Gene Transformation System for Sesamum indicum L.? (C01-seo211424-Poster)

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Abstract:

This study was carried out to establish the breeding tools of gene transformation which open up the possibility for metabolic engineering targeted at improving nutritional quality and disease resistance in sesame. Various cotyledon explants of Korean cultivars were cultured on MS medium supplemented with 5mg/L BAP, 1mg/L IBA, 1mg/L ABA and 3% sucrose. After 3 month multiple shoots(8>) were observed on cultured cotyledon explants up to 90% and transferred these on MS with 0.5mg/L NAA for rooting. The root formation was 95% in regenerated multiple shoots. The regenerated plantlets were transferred to horticultural soil for acclimation, and later transplanted to the greenhouse.The final regeneration efficiency reached 85%. Based on this results, excised cotyledon were transformed with A. tumefaciens strain for 15 min. After that, the cotyledons were transferred to primary multi shoots induction medium containing 100mg/L kanamycin. Regenerated callus and shoot were analyzed by histochemical GUS assay and PCR. The GUS activity was 31.0% on callus. Our results indicated that regeneration system via organogenesis was can be applicable to Agrobacterium-mediated transformation system for Sesame breeding.

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