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과제 일련번호: 36

High frequency plant regeneration from leaf and petiole explant cultures of domestic cultivated strawberry (*Fragaria* x *ananassa* Duch) via organogenesis

Pil Son Choi[1], Mi Ae Cho[2], Kyu Myeong Choi[2], Suck Min Ko[2], Sung Ran Min[3], Hwa Ji Chung[3], Jang Ryol Liu[3*]

[1]Department of Medicinal Plant Resources, Nambu University, Gwangju 506-824, Korea; [2]Eugentech Inc, Daejeon 305-606, Korea; [3]Plant Cell Biotechnology Laboratory, Korea Research Institute of Bioscience and Biotechnology (KRIBB), Daejeon 305-606, Korea (*jrliu@kribb.re.kr)

To develop a high efficiency plant regeneration system from *in vitro* cultures of strawberry, cv. Yeobong, petiole and leaf explants were cultured on MS basal medium containing 0.5 mg/L IBA in combination with 3.2 mg/L kinetin, zeatin, or benzyl adenine for 6 weeks. Leaf explants were incubated in the dark for 1 week (T1), 2 weeks (T2), or 4 weeks (T3) cultured on medium supplemented with 0.5 mg/L IBA and 3.2 mg/L zeatin under 16 hr photoperiod in a total 6 weeks of culture. Adventitious shoots were observed from greenish calli containing anthocyanin that formed at proximal cutting edges of leaf explants (57%) when the adaxial side of the explants was attached to the medium, whereas shoots were directly formed on cutting edges of petiole explants (6.3%). Frequency of callus formation and shoot formation at larger size of leaf explants (1.0 ~ 1.5 cm^2) was higher than a smaller ones (0.5 ~ 1.0 cm^2), and dark treatment significantly improved the frequency of leaf explants that produced calli and shoots. The maximum frequency (87%) for shoot organogenesis was obtained from the leaf explants that transferred to a 16 hr photoperiod condition followed by the initial 4 weeks of dark period. The dark treatment (87%) improved the frequency of shoot formation when compared with control without dark treatment (27%). When regenerated shoots were transferred to 1/2 MS basal medium, they were rooted after 20 d of culture. The rooted plants were successfully transferred to potting soil and subsequently to the field.

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