Abstract

The suitable medium for callus induction of rice var. RD 6 seeds was modified N_6 medium containing 22.5 μM 2, 4 D, 300 mg/l casein hydrolysate and 0.8% (W/V) bacto agar under light condition. The percentage of callus induction was 97.22%. Regeneration of rice var. RD 6 was enhanced up to 61.11% on the same medium supplement with 2.5 μM IAA, 18 μM BA, 300 mg/l casein hydrolysate and 0.26 % (W/V) gelrite. The numbers of shoots/callus were 6. On the other hand, high percentage of callus induction at 93.33% was obtained when seeds of rice var. RD 15 were cultured on N_6 medium containing 7 μM 2,4D, 0.8 % (W/V) bacto agar. Regeneration percentage of rice var. RD 15 was 53% on MS medium supplement wilh 13.5 μM BA, 7.5 μM kinetin, 4.5 μM NAA, 300 mg/l casein hydrolysate and 0.8% (W/V) bacto agar. The numbers of shoots / callus were 8. The minimum concentration of cefotaxime and carbenicillin for elimination *A. tumefaciens* were 50 mg/l and 150 mg/l respectively. The concentration of cefotaxime and carbenicillin at 250 mg/l was effective to inhibit growth of transgenic rice completely. The minimum concentrations of kanamycin and hygromycin for selection of transgenic rice var. RD 6 were 150 mg/l and 10 mg/l respectively. On the other hand kanamycin concentration at 200 mg/l was effective for selection of transgenic rice var. RD 15. The optimal co-cultivation time of rice seeds was 50 minutes. Gus activity of rice seed var. RD 6 cocultivated with *A. tumefaciens* LBA 4404 pBI 121 and EHA 105 pCAMBIA 1301 was 89.19% and 93.33 % respectively. The frequency of gus expression in infected rice seed var. RD 15 was 100%. GUS assays in transgenic rice var. RD 6 and var. RD 15 showed that under the proper conditions transformed plants were obtained.