ABSTRACT

This research was conducted to develop an efficient protocol for micropropagation of *Echeveria elegans* Rose by direct organogenesis. Different explants were used but leaves demonstrated the best regeneration capacity. The explants were treated with 70% ethanol and 2.5% bleach for surface sterilization. MS medium supplemented with different PGRs was used for culturing of explants. The effect of different PGRs was assessed in terms of number of shoots, number of roots and root length. The effects of BAP, TDZ and KIN under concentration range of (0.5 to 2.0 mg/l) were monitored for the regeneration of cultured explants. The application of these cytokinins resulted in the emergence of leaves. Notably, TDZ at concentrations of 1.0 and 1.5 mg/l exhibited the most favorable response among all the cytokinins for shoot formation in the cultured explants. Among the effect of IAA, NAA and 2,4-D for shoot induction IAA demonstrated the best response for root formation in cultured explants. Combination of cytokinins to auxins responded in terms of direct organogenesis of leaves with roots. Among various combinations, BAP + IAA (2.0 +1.0 mg/l) stood out as the most successful, yielding the maximum number of leaves along with maximum no of roots. This combination proved to be the optimal choice for direct organogenesis in the cultured explants and development of this protocol for optimized propagation provides an effective means for the efficient clonal propagation of *E. elegans*.