

Simultaneous Production of Forskolin and Rosmarinic Acid in vitro Cultures of Coleus Forskohlii Briq

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Abstract : An efficient protocol for simultaneous production of forskolin and rosmarinic acid in in vitro callus derived from the leaves of Coleus forskohlii Briq. has been developed. MS media was used for the establishment of cultures and NAA + 6-BA (1.0 ppm) was found best for callus growth. The callus was further subjected to treatment with various elicitor/precursors viz. chitosan, thidiazuron and methyl jasmonate to observe their effect on production of biomass and accumulation of secondary metabolites. The content of forskolin and rosmarinic acid were estimated by HPTLC, in comparison to natural explant which showed 2 fold and 10 fold rise in forskolin and rosmarinic acid content, respectively. Methyl jasmonate 50 μ M was found best for production of forskolin, whereas thidiazuron showed best results in the yield of rosmarinic acid, separately in static culture. However, combined treatment in suspension culture showed moderated effect for increase in secondary metabolites but the biomass increased significantly as compared to static culture.

Keywords : plant tissue culture, secondary metabolites, coleus, forskolin, rosmarinic acid, HPTLC

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