



2<sup>nd</sup> National Congress on Medicinal Plants  
15, 16 May 2013  
Tehran- Iran



OPTIMIZATION OF IN VITRO REGENERATION OF SOME *SALVIA*  
SPECIES VIA NODAL EXPLANTS CULTURE

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*Salvia* is an important genus belongs to Lamiaceae family, which widely cultivated and used in aromatic and traditional medicines. The members of the genus have attracted great attention that they have been the subject of several phytochemical studies. They are rich sources of phenolic compounds, especially phenolic acids. The majority of the phenolic acids in *Salvia* species are caffeic acid derivatives, some of which are unique to the genus [1]. In this project, we studied the effect of some growth regulators on micropropagation of the medicinal species of *S. officinalis* and two wild species of *S. nemorosa* and *Salvia hypoleuca* in order to establish a protocol for high shoot regeneration. Seeds of two wild species were sterilized in different concentrations of sodium hypochlorite and were cultured on basal MS medium. Seeds of *S. officinalis* were cultured in small plastic flowerpots and four leaf- stage plantlets were sterilized in sodium hypochlorite. Nodal explants which were excised from the four leaf stage seedling samples, were cultured on MS basal media containing different combinations of NAA(0.1 and 0.2 mg/l) + BAP (0.5, 1 and 1.5 mg/l) or IAA(0.1 and 0.2 mg/l) + BAP (0.5, 1 and 1.5 mg/l). Results from statistical analysis of data indicated that the highest number ( $4.11 \pm 0.11$  per explant) of proliferated shoots with the highest length ( $7.09 \pm 0.47$ ) and leaf number ( $21.11 \pm 0.58$  per explant) were obtained for *S. officinalis* nodal explants that were cultured on MS medium containing BAP (0.5 mg/l) in combination with IAA (0.1 mg/l). The highest number of regenerated shoots ( $5.8 \pm 0.41$  per explant) were also formed on nodal explants of *S. nemorosa* that were cultured on a MS medium containing BAP (1.5 mg/l) in combination with IAA (0.1 mg/l). Nodal explants of *S. hypoleuca* that were cultured on MS medium supplemented with BAP (1.5 mg/l) and NAA(0.1 mg/l) showed the highest number of regenerated shoots ( $3.5 \pm 0.14$  per explant). This is the first report on high frequency *in vitro* regeneration of wild *Salvia* species of Iran. Our protocol would be useful for clonal propagation and genetic transformation of *Salvia* species, as well production of various secondary metabolites with biological activities.

References

[1] Lu, Y. ; L. Yeap Foo, Y. L. *Phytochemistry*. 2002, Vol. 59, pp. 117–140.