

A Comparative Evaluation of Antioxidant Activity of in vivo and in vitro Raised *Holarrhena antidysenterica* Linn.

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Abstract : *Holarrhena antidysenterica* Linn. (Apocynaceae) is a typical Indian medicinal plant popularly known as "Indrajav". Traditionally the plant has been considered a popular remedy for the treatment of dysentery, diarrhea, intestinal worms and the seeds of this plant are also used as an anti-diabetic remedy. In the present study axillary shoot multiplication, callus induction and shoot regeneration from callus culture were obtained on Murashige and Skoog (MS) medium supplemented with different concentrations and combinations of plant growth regulators. Then in vivo and in vitro grown healthy plants were selected for study of antioxidant activity through DPPH and OH methods. Significantly higher antioxidant activity and phenol contents were observed in vitro raised plant in comparison to in vivo plants. The findings indicated the greater amount of phenolic compounds leads to more potent radical scavenging effect as shown in in vitro raised plant in comparison to in vivo plants which showed the ability to utilize tissue culture techniques towards development of desired bioactive metabolites from in vitro culture as an alternative way to avoid using endangered plants in pharmaceutical purposes.

Keywords : *Holarrhena antidysenterica*, in vitro, in vivo, antioxidant activity

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