

2nd International Conference and Exhibition on Pharmacognosy, Phytochemistry & Natural Products

August 25-27, 2014 DoubleTree by Hilton Beijing, China

Micropropagation and estimation of camptothecin and 9-methoxycamptothecin variation in regenerated plants of *Nothapodytes foetida*

Pooja Sharma¹, Arun M Gurav² and Ajay Sharma¹

¹KRG College, India

²Jawaharlal Nehru Medicinal Plant Garden, India

The major objectives of the present study were to develop an efficient micropropagation protocol and estimation of camptothecin (CPT) and 9-methoxycamptothecin (9-MCPT) content variation in regenerated plants of *N. foetida*. Callus culture was initiated from immature fruits of *N. foetida*, on Murashige and Skoog's (MS) medium supplemented with different combinations of phyto-hormones. Maximum number of shoots (62.0 ± 0.02) and shoot elongation (33.0 ± 0.01 mm) was found in MS liquid medium supplemented with $4 \mu\text{M}$ of benzyl amino purine (BAP) and $8 \mu\text{M}$ of gibberellic acid (GA). Shoot elongation and number of shoots were relatively higher for explants incubated in MS liquid medium supplemented with $2.5 \mu\text{M}$ of Kinetin. The maximum number of roots (22.0 ± 0.01) and root elongation (33.7 ± 0.01 mm) was found in MS medium containing $4 \mu\text{M}$ of indole acetic acid (IAA) along with root induction of 94 percent. Hardening of plantlets was very successful with more than 90% survival. The CPT and 9-MCPT content was analyzed by high performance thin layer chromatography (HPTLC). The maximum CPT (2.86% w/w) and 9-MCPT (1.14% w/w) content was found in plants transferred in earthen pots where as minimum CPT (1.18% w/w) and 9-MCPT (0.47% w/w) content was found in callus. The proposed *in vitro* multiplication protocol can keep the pressure off from the wild population of *N. foetida* that can be used as an alternative source for the extraction of CPT and 9-MCPT to meet the global demand.

ajaysharmapharma1979@gmail.com