Indian J. Trop. Biodiv. **20(1)** : 9 - 16 (2012)

MOLECULAR CHARACTERISATION FOR GENETIC DIVERGENCE OF *BACOPA MONNIERI* (LINN.) PENNELL IN HIMACHAL PRADESH

POORNIMA SHARMA[1], R. K. SHARMA[2] AND POONAM SHIRKOT[3]

[1,3] *Department of Biotechnology, Dr. Y.S. Parmar University of Horticulture and Forestry, Nauni, Solan 173230, Himachal Pradesh*

[2] *Department of Biotechnology, IHBT, Palampur, 176061, Himachal Pradesh*

[1] *Corresponding author: poornimasharma.sharma@gmail.com*

ABSTRACT: *Bacopa monnieri* (Linn.) Pennell is a significant medicinal plant species and possesses multiple medicinal uses as the plant is a rich source of triterpenoid saponins, sterols, alkaloids and flavonoids. The present investigation was undertaken to assess the diversity of thirty six accessions belonging to twelve phytogeographical locations of Himachal Pradesh using RAPD markers. A total of 32 primers were screened initially and only 17 primers amplified the genomic DNA successfully. A total of 109 bands were amplified and 77 of them were polymorphic, depicting 70.64 per cent polymorphism. Similarity coefficient values among the accessions varied from 0.522 to 0.947. Eleven unique bands were produced specific for selected accessions viz. OPC-04_{650}, OPS-04_{900}, OPS-04_{300}, OPT-02_{650}, OPT-07_{900}, OPV-02_{1200}, OPV-06_{1200}, OPV-07_{1700}, OPV-14_{1300}, OPV-15_{2700} and OPV-17_{1000}. On the basis of this study specific markers for quantitative traits were identified. Unique markers OPS-04_{900}, OPS-04_{300}, OPT-02_{650} and OPV-02_{1200} were identified for B30 accession of Nehla site for maximum stem length, OPV-07_{1000} for maximum leaf length in B21 accession of Nauni site, OPC-04_{650} for maximum number of flowers in B8 accession of Machiyal site and OPV-06_{1200} for B31 accession of Karganoo site for minimum number of flowers per stem length. It is concluded that *Bacopa monnieri* possesses moderate polymorphism and diversity in the state of Himachal Pradesh.

Keywords: *Bacopa monnieri, Genetic divergence, Molecular marker, RAPD.*