

## OPTIMIZATION OF DNA ISOLATION AND ANALYSIS OF GENETIC VARIABILITY IN MEDICINAL PLANT *CISSUS* BY RAPD-PCR TECHNIQUE

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### ABSTRACT

*Cissus quadrangularis* is the plant of *Vitaceae* family and reported to have widely applicable medicinal properties. The present study was carried out to optimize the method of genomic DNA extraction from *Cissus quadrangularis* and to determine genetic variability among four different accessions of *Cissus*. For DNA extraction, five Different procedures were tested, among which, the protocol of modified Doyle and Doyle (1990) gave good yield as well as consistent RAPD profiles with the random primer, and hence used for all further studies. The genetic variability among accessions of *Cissus* was determined using randomly amplified polymorphic DNA (RAPD) profiles. Similarities of profiles were determined using the algorithm of *Jaccard*, and UPGMA and neighbor joining trees were generated from the similarity data. Twelve RAPD primers produced a total of 79 bands, with an average of bands per primer pair, of which 62 were polymorphic. Similarity, index between all the accessions is more than 0.50, yet UPGMA cluster analyses of the SM matrix confidently separate four accessions. Optimized methods for DNA extraction and RAPD analysis for *Cissus* can be helpful in further molecular as well as genomic studies.

**KEYWORDS:** *Cissus*, CTAB Protocol, DNA Isolation, Optimization, RAPD, UPGMA