

## Application of RAPD for molecular characterization of plant species of medicinal value from an arid environment

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**ABSTRACT.** The use of highly discriminatory methods for the identification and characterization of genotypes is essential for plant protection and appropriate use. We utilized the RAPD method for the genetic fingerprinting of 11 plant species of desert origin (seven with known medicinal value). *Andrachne telephioides*, *Zilla spinosa*, *Caylusea hexagyna*, *Achillea fragrantissima*, *Lycium shawii*, *Moricandia sinaica*, *Rumex vesicarius*, *Bassia eriophora*, *Zygophyllum propinquum* subsp *migahidii*, *Withania somnifera*, and *Sonchus oleraceus* were collected from various areas of Saudi Arabia. The five primers used were able to amplify the DNA from all the plant species. The amplified products of the RAPD profiles ranged from 307 to 1772 bp. A total of 164 bands were observed for 11 plant species, using five primers. The number of well-defined and major bands for a single plant species for a single primer ranged from 1 to 10. The highest pair-wise similarities (0.32) were observed between *A. fragrantissima* and *L. shawii*, when five primers were combined. The lowest similarities (0) were observed between *A. telephioides* and *Z. spinosa*; *Z. spinosa* and *B. eriophora*; *B. eriophora* and *Z. propinquum*.

In conclusion, the RAPD method successfully discriminates among all the plant species, therefore providing an easy and rapid tool for identification, conservation and sustainable use of these plants.

**Key words:** Molecular fingerprinting; Medicinal plants; RAPD; Arid environment