



Selection of DNA barcoding loci and phylogenetic study of a medicinal and endemic plant, *Plectranthus asirensis* J.R.I. Wood from Saudi Arabia

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ABSTRACT. Genuine medicinal plant materials are very important for potential crude drug production, which can be used to cure many human diseases. DNA barcoding of medicinal plants is an effective way to identify adulterated or contaminated market materials, but it can be quite challenging to generate barcodes and analyze the data to determine discrimination power. The molecular phylogeny of a plant species infers its relationship to other species. We screened the various loci of the nuclear and chloroplast genome for the barcoding of *Plectranthus asirensis*, an endemic plant of Saudi Arabia. The chloroplast genome loci such as *rps16* and *rpoB* showed maximum similarity to taxa of the same and other genera via BLAST of the National Center for Biotechnology Information (NCBI) GenBank database; hence, they are less preferable for the development of a DNA barcode. However, nrDNA-ITS and chloroplast loci *rbcL* and *rpoCI* showed less similarity via BLAST of the NCBI GenBank database; therefore, they could be used for DNA barcoding for this species.

Key words: DNA barcoding; Chloroplast loci; Nuclear DNA marker; BLAST