DNA barcoding and its challenges for successful implementation

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Abstract

DNA barcoding has attracted attention with promises to aid in species identification and discovery. DNA barcoding is a technique in which species identification is performed by using DNA sequences from a small fragment of the genome, with the aim of contributing to a wide range of ecological and conservation studies in which traditional taxonomic identification is not practical. DNA barcoding is well established in animals, but there is not yet any universally accepted barcode for plants. Several challenges to the successful implementation of DNA barcoding are presented and discussed. Despite these challenges, DNA barcoding has the potential to uniquely identify medicinal plants and provide quality control and standardization of the plant material supplied to the pharmaceutical industry.

Keywords: DNA barcoding; mtDNA Based barcode; nuclear barcode; taxonomist; phylogenetic tree