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Evolutionary studies of some species belonging to Leguminosae family based on *rbcl* gene

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Abstract

The most common gene used for plant phylogenetic analyses is the plastid-encoded rbcL gene. This single copy gene is approximately 1430 base pairs in length and is free from length mutations except at the far 3' end. It has fairly conservative rate of evolution. The function of the rbcL gene is to code for the large subunit of ribulose 1, 5 bisphosphate carboxylase/oxygenase (RUBISCO or RuBPCase). The sequence data of the rbcL gene are widely used in the reconstruction of phylogenies throughout the seed plants. Leguminosae family is one of the largest families that contain thousands of species of Plants, Herbs, Shrubs, and Trees worldwide. Legumes are used as crops, forages and green manures; they also synthesize a wide range of natural products such as flavours, drugs, poisons and dyes. Legumes have the potential to play an increasing role in alleviating these threats owing to their ability to produce, with minimal environmental damage and external energy input in the form of nitrogenous and phosphorous fertilizers. In present studies group of plants were tested for their actual position based on various morphological characters and genomic information. This study shows plants belongs to Fabaceae (Papilionaceae), Mimosaeae, Caesalpiniaceae based on morphological characters has different members and the based on the genomic characteristics they fall in different groups. We conclude that as per botanical classification of species belonging to Leguminosae families are classified differently based on morphological character with compare to genomic characters.

Biography

Sagar Patel is currently pursuing Ph.D. in Bioinformatics (Full-time) under the guidance of Dr. Hetalkumar Panchal at G. H. Patel Post Graduate Department of Computer Science and Technology (GDCST), Sardar Patel University, India. He is also Research Assistant in PURSE program of DST (Department of Science & Technology, Govt. of India) at Sardar Patel University. He has recently published one book, several research papers in International Journals, Conference Proceedings and presentations at many conferences.

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