عنوان مقاله:

Taxonomic study of cyanoprokaryotes from medicinal plants bed with emphasis on phylogeny of complex taxa using 16S rRNA marker

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خلاصه مقاله:

Cyanoprokaryotes are simple photosynthetic microorganisms which have an important role in the soil carbon and nitrogen cycle. The current study aimed to investigate the flora of cyanoprokaryotes from medicinal plants bed. Also phylogenetic analysis based on 16S rRNA marker was performed to investigate the phylogenetic relationships between different cyanoprokaryotic taxa and evaluate the efficiency of this marker in separation of taxonomic boundaries between taxa especially in the case of complex taxa, which their relations are not well-defined. For this purpose, after collection of soil, isolation and purification of strains were performed. The cyanoprokaryotic taxa were identified morphologically and 16S rRNA marker was used to approve the identifications. Phylogenetic analysis performed using Maximum Likelihood, Maximum Parsimony and Bayesian Inference. Totally, 42 cyanoprokaryotic taxa were identified and Nostoc was an abundant genus in the soil of medicinal plants bed. The phylogenetic tree revealed Nostocales as a monophyletic group. Also, Wollea together with Anabaena, and Nostoc together with Desmonostoc created monophyletic groups. Results revealed that, 16S rRNA is an effective phylogenetic marker in high classification rankings such as order, family and genus. However, 16S rRNA could not be an effective marker in separation of close genera such as Nostoc and Desmonostoc.

کلمات کلیدی:

Cyanoprokaryotes, Desmonostoc, phylogeny, Wollea, 16S rRNA

لینک ثابت مقاله در پایگاه سیویلیکا:

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