

Emendation of the Coccoid Cyanobacterial Genus *Gloeocapsopsis* and Description of the New Species *Gloeocapsopsis diffluens* sp. nov. and *Gloeocapsopsis dulcis* sp. nov. Isolated From the Coastal Range of the Atacama Desert (Chile)

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Abstract

The taxonomy of coccoid cyanobacteria, such as *Chroococidiopsis*, *Pleurocapsa*, *Chroococcus*, *Gloeotheca*, *Gloeocapsa*, *Gloeocapsopsis*, and the related recent genera *Sinocapsa* and *Aliterella*, can easily be intermixed when solely compared on a morphological basis. There is still little support on the taxonomic position of some of the addressed genera, as genetic information is available only for a fraction of species that have been described solely on morphology. Modern polyphasic approaches that combine classic morphological investigations with DNA-based molecular analyses and the evaluation of ecological properties can disentangle these easily confusable unicellular genera. By using such an approach, we present here the formal description of two novel unicellular cyanobacterial species that inhabit the Coastal Range of the Atacama Desert, *Gloeocapsopsis dulcis* (first reported as *Gloeocapsopsis* AAB1) and *Gloeocapsopsis diffluens*. Both species could be clearly separated from previously reported species by 16S rRNA and 16S–23S ITS gene sequencing, the resulting secondary structures, p-distance analyses of the 16S–23S ITS, and morphology. For avoiding further confusions emendation of the genus *Gloeocapsopsis* as well as epitypification of the type species *Gloeocapsopsis crepidinum* based on the strain LEGE06123 were conducted. © Copyright © 2021 Jung, Azua-Bustos, Gonzalez-Silva, Mikhailyuk, Zabicki, Holzinger, Lakatos and Büdel.

Author keywords

Atacama Desert; *Chroococidiopsidales*; *Chroococidiopsis*; *Gloeocapsopsis*; polyphasic approach