**Characterization of microbiomes in the modern microbialite ecosystem of Pozo Bravo Lake, Argentina, using 16SrRNA amplicon sequencing**

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Pozo Bravo is a small (552.60 x 69 m), shallow (< 3 m), slightly alkaline (pH 8.4), hypersaline lake (165.5 mS/cm), placed at 3,300 m a.s.l in the western margin of the *Salar de Antofalla,* Catamarca Puna (northwest of Argentina). It harbors modern calcite microbialites that exhibit biostromal megastructures, domal, discoidal, tabular and compound macrostructures. The distinctive feature of Pozo Bravo microbialites is their composite internal structure characterized by a gradual transition from a thrombolitic core to dendrolitic structures and a sharply overlying stromatolitic layer. To expand our knowledge of the microbial ecosystems in Pozo Bravo, we have analyzed the prokaryotic community of the water, the lithifying mats and the microbialites by sequence analysis of 16S rRNA gene amplicons along an annual cycle.

The water of Pozo Bravo is dominated by two phyla, *Bacteroidetes* and *Proteobacteria*, all over the year. The lithifying mats are dominated by *Bacteroidetes*, *Proteobacteria* and *Cyanobacteria*, but their abundances differ greatly between seasons. During spring and summer, there is an increase in theproportion of *Cyanobacteria*, *Chloroflexi* and *Firmicutes*, and a decrease in the proportion of *Bacteroidetes* and *Proteobacteria*. Whereas, in fall and winter, the opposite phenomenom is observed. Microbialites are dominated by *Proteobacteria* throughout the year. *Cyanobacteria*, *Firmicutes*, *Bacteroidetes* and *Deinococcus-Thermus* are also well-represented, but their abundances are highly variable between seasons. *Cyanobacteria*, *Bacteroidetes* and *Deinococcus-Thermus* are abundant in fall, while *Firmicutes* is abundant in winter and spring.

This work expands our comprehension of the microbiomes in the modern microbialite ecosystem of Pozo Bravo and we hope it will provide the basis for further research.