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HOTEL UTHGRA

Los Cocos

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decreased as the LiCl concentration increased. *Brevibacterium* sp. SX139 showed the highest tolerance to LiCl however, it produced biofilms in significantly lower amounts than the other two strains. *Bacillus* sp. HX11 achieved the highest Li removal values, removing almost 100% of the Li in the 0.45 mg/l Li solution at 22 h of incubation, with an SLR of 2.24 mg Li/g cells. The three strains showed SLR values around 2 mg Li/g cells at the shortest incubation time in the presence of 1 mg/l Li, decreasing to zero value at 22 h. These bacterial strains have a great potential for metal removal and therefore can be considered as a promising alternative in soluble Li recovery processes.

CO-AS2 -METAGENOMIC INSIGHT INTO PRECIPITATION PROCESSES IN MICROBIAL COMMUNITIES FROM SALAR DE ATACAMA

Marcelino V, Saona Acuña LA, Farías ME, Kurth D.

Planta Piloto de Procesos Industriales Microbiológicos (PROIMI-CONICET) - San Miguel de Tucumán - Tucumán - Argentina

The Salar de Atacama is one of the Earth's largest evaporite basins (ca. 3,000 km²). Within this large area, numerous hypersaline lakes can be found. These lakes are hotspots for microbial diversity, and diverse structures with associated microorganisms have been reported, including microbial mats, microbialites and endoevaporites. In this work, we aim to identify functional differences in the microbiota from these systems, using as models a mat from Brava lake, a microbialite from Chaxas and an endoevaporite from Barros Negros. Metagenomic DNA was extracted from these samples, and sequenced with Illumina technology. The datasets generated allowed to characterize the microbial communities both taxonomically and functionally. The carbonate-rich mats and microbialites are dominated by Proteobacteria, and within this phylum the most abundant classes are Alphaproteobacteria and Gammaproteobacteria. Other important phyla include Bacteroidetes, Cyanobacteria, and Actinobacteria. In the endoevaporites, the phyla are more evenly distributed, being Proteobacteria, Bacteroidetes, and Euryarchaeota similarly abundant, with Cyanobacteria and Actinobacteria also present. At the family level, the mat is the most diverse and the endoevaporite is the least diverse. This is also observed at the function level, with more pathways annotated in Brava. However, the main functional roles present in the three communities are similar, with Cyanobacteria being the main primary producers, involved in photosynthesis and nitrogen fixing, Alphaproteobacteria involved in anoxygenic photosynthesis, and Deltaproteobacteria involved in sulfur cycling. This work starts the exploration of the microbial influence on the formation of different macrostructures harboring microbial ecosystems in extreme environments from the Central Andes region. Certain taxa present only in the more lithified communities, and with metabolic pathways promoting precipitation might be particularly involved in the lithification process.