Cr (VI and III) was determined in biomass and supernatant. Approximately 46 and 54% of total chromium was detected in supernatant and in the biomass, respectively. The metal accumulated in the cells would be probably in the state of Cr(III), which could be associated to the catalytic activity of intracellular chromate reductase.

In conclusion, the mechanisms involved in Cr(VI) removal by *Serratia* sp. C8 were bioadsoption to the biomass and reduction catalyzed by an intracellular chromate reductase.

Código de Resumen: BB-011

Sección: Bioremediación y Biocontrol

Modalidad: Poster

CHARACTERIZATION OF ARSENIC-RESISTANT BACTERIA ISOLATED FROM WATER WELLS IN TUCUMÁN, ARGENTINA.

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Arsenic is a toxic metalloid widely spread in nature. It generally occurs in aquatic environments as either arsenate [$H_2AsO_4^{-1}$ or As(V)] or arsenite [$HAsO_2^{-1}$ or As(III)], the latter oxyanion being more toxic than the former. It can be released either by natural weathering of rocks or by anthropogenic sources. It is found in the oxidation states +5 (arsenate), +3 (arsenite), 0 (elemental arsenic), and -3 (arsine).

Although arsenic is toxic to life, it has been previously demonstrated that microorganisms can use arsenic compounds as electron donors, electron acceptors, or possess arsenic detoxification mechanisms, that they use to resist and grow in high concentrations of arsenic in many natural environments.

Several bacteria involved in transformation processes comprising reduction, oxidation, and methylation of arsenic species have been previously described. These processes have geochemical and ecological significance, influencing the speciation, mobility and toxicity of arsenic in the environment.

The growth of eighteen bacterial strains, previously isolated from arsenic contaminated water wells at “Los Pereyra”, Tucumán (known to be the region presenting the highest arsenic levels in drinking water in the province) was tested in the presence of different concentrations of arsenite and arsenate.

The bacterial strains were isolated from enrichment cultures amended with As(V) 50-200 mM.

An arsenic-tolerance assay in Petri-dishes with LB agar medium at 25% of concentration (LB_{25}) was performed to determine the resistance of the isolates to As(III) and As(V). The concentrations tested went from 5 to 20 mM for As(III) and 50 to 200 mM for As(V). All the isolates showed to be resistant to all the concentrations tested for As(V), but only seven isolates were able to grow at the maximum concentration of 20 mM for As(III).

Growth curves in LB_{25} broth, LB_{25}+As(III) 5 mM and LB_{25}+As(III) 10 mM were conducted for the seven high-resistant isolates.

PCR 16S amplifications were performed on total DNA from each isolate and were sequenced. The resulting sequences showed α-, β-, γ- Proteobacteria and Actinobacteria as the main members of the bacterial communities.

Código de Resumen: BB-012

Sección: Bioremediación y Biocontrol

Modalidad: Poster

POLYCYCLIC AROMATIC HYDROCARBONS DEGRADATION BY A DEFINED CONSORTIA OF INDIGENOUS BACTERIAL STRAINS

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