

Characterization of *Sphingobium* sp. isolated from the rhizosphere of *sorghum* and its possible role in the biodegradation

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Up to date, there is a growing interest in studying the microorganisms that are present at the rhizosphere of plants in contaminated soils because this niche has been described as an abundant source of bacteria with the ability to degrade various pollutants, such as herbicides and hydrocarbons, which are usually very difficult to remove from the environment. For this reasons, these microorganisms has a great potential for bioremediation purposes.

The *Sphingobium* is a bacterium that is very important among some microorganisms due to its ability for hydrocarbons degradation. The mechanisms and genes involved in these processes are different among the *Sphingobium* species and depend on the wide spectrum of compounds that they are capable to degrade. According to the identification of *Sphingobium* species helps us to know the specific genes involved in biodegradation processes. Therefore, the objective of this study is to identify the genes involved in biodegradation belong to a *Sphingobium* strain isolated from the *sorghum* rhizosphere in northern Tamaulipas, Mexico.

So far, we have identified the *Sphingobium* isolate to species level by biochemical, physiological and molecular methods as *Sphingobium yanoikuyae* S.7.2. Thus, to identify four key genes in the process of bioremediation of hydrocarbons of this specie specific primers were designed to amplify those genes. Results will be presented.