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IDENTIFICATION OF MICROBIAL COMMUNITIES AND ISOLATION OF EXTREMOPHILE  
BACTERIA FROM THREE ASTROBIOLOGICAL SITES OF INTEREST IN CHIAPAS.**Abstract**

Chiapas has a wealth of highly diverse natural environments due to its geographical position and geological characteristics. Within these environments there are sites with properties that pose difficulties for life developing, but despite their extreme conditions there exist microorganisms that have been able to adapt and subsist against these factors.

The "Chichonal" volcano ( $17^{\circ}21'N$   $93^{\circ}13'W$ ) is located 68 km in straight way to NNW from Tuxtla Gutierrez and 20 km to SW from Pichucalco. In its main structure has a hydrothermal system and a crater-lake with approximately 1 km diameter which consist of hot springs, hot soils and irregularly open fractures that results in fumaroles.

The salt-water hole "Las Salinas" ( $16^{\circ}47'N$   $92^{\circ}53'W$ ) is located in the town of Ixtapa, Chiapas. Inside it springs water with salts highly concentrated. It is characterized by its depth (8 meters approximately) and the presence of rust on their walls. This site is particularly interesting because it has not previously been described or studied.

The thermal waters from "Baños del Carmen" ( $16^{\circ}24'N$   $92^{\circ}42'W$ ) are located near from Venustiano Carranza. It is a spring of hot and sulfured waters that emerge from volcanic areas and it has temperatures ranging from 17 to  $45^{\circ}C$ .

The objective of this project is to identify microbial metacommunities present in these three sites of astrobiological interest from Chiapas and also isolate bacteria that may have future biotechnological applications. The importance of this work lies in the description of the microbial biology of these extremophiles sites as well as relate the scientific community of Chiapas in astrobiology fields.

To conduct our studies of microbial communities from each site, we are using molecular biology techniques and metagenomic tools. Also we are isolating cultivable bacteria using specific culture media that resemble the conditions of each sampling site, and we expect to find some strains at least halotolerant, thermotolerant or acid tolerant according to its procedure. At the same time, we are performing the analysis of dissolved components in water from the three sites.