

19th World Congress on

BIOTECHNOLOGY

November 13-14, 2017 Osaka, Japan

Microalga isolated from a microbial mat in Salar de Atacama (northern Chile) as a potential source of compounds for biotechnological applications

Gladys Hayashida Soiza
University of Antofagasta, Chile

Microalgae are an important source of unsaturated fatty acids, phospholipids, glycolipids, and carotenes, which are useful compounds for the food and pharmaceutical industries. The Atacama Desert of northern Chile is one of the driest deserts on Earth and as such, it is a great natural laboratory in which to study new microorganisms adapted to extreme environments. A microalgal strain, referred to here as CH03, was isolated from a microbial mat in salt flat water in Salar de Atacama. Genetic analysis of the 18S ribosomal RNA gene showed that the strain had homology with other known sequences of the species *Chlorella sorokiniana*. Results revealed the adaptability of this microalga to freshwater medium under laboratory conditions, despite coming from an extremely high-salinity environment. The fatty acid profile of CH03(A) newly isolated in Bold's basal medium differed from that of CH03(B) cultured *in vitro* in modified F/2 medium and from another five strains of *C. sorokiniana* and three strains of *Chlorella vulgaris* in that it had a high stearic acid content and had no polyunsaturated fatty acids. The major biochemical components observed in this strain were proteins (64.3-73.6%) and lipids (26.6-32.6%). This study suggests that the strain CH03 could be a protein source and that this oleaginous microalga is easy to grow *in vitro* as a biological model for future studies.

Biography

Gladys Hayashida Soiza has completed her PhD from Antofagasta University and her Masters studies from Kyoto University. She is the Director of the Associative Regional Project Explora of CONICYT, a Science Promotion Grant supported by the Government of Chile and implemented by the Antofagasta University. She has published scientific articles related to bioactive substances from marine bacteria and microalgal biotechnological applications, in reputed journals and has been her participating as researcher in several scientific studies.

gladys.hayashida@uantof.cl