**THE ASUV COLLECTION OF SYMBIOTIC MICROALGAE:**  **A CRADLE OF UNDESCRIBED *Trebouxia* ISOLATED FROM MEDITERRANEAN AND MACARONESICAN LICHENS**

Eva Barreno\*;Isaac Garrido-Benavent; César Bordenave; Patricia Moya; Arantzazu Molins; Salvador Chiva.

Botánica, ICBIBE, Fac. CC. Biológicas, Universitat de València, C/ Dr. Moliner, 50. 46100-Burjassot, Valencia, Spain. \*Email: eva.barreno@uv.es

Lichen symbioses are microecosystems hosting many other living organisms besides the two major lichen symbionts (i.e. the mycobiont and green microalgae or cyanobacteria) and are considered suitable sources of undescribed green microalgae for scientific knowledge. Recently, it has been stablished the “Collection of Symbiotic Microalgae-Phycobionts” at the University of Valencia (ASUV) with the aim of the isolation, propagation and conservation of lichen symbiotic or associated microalgae. The ASUV currently holds more than sixty strains, including formally described microalgae and a large number of undescribed strains news to science.

In this study lichen species from the Iberian Peninsula and the Canary Islands, with different growth form and habitat requirements, were used to obtain symbiotic microalgae using an innovative isolation protocol where tiny clumps of the algal layer were captured and inoculated directly into BBM media. To reveal their phylogenetic position within the genus, molecular data (ITS, *cox*2, *rbc*L markers) were considered to build a multi-locus phylogeny. The phylogenetic analysis was combined with a detailed ultraestructural investigation, using both LM and TEM microscopy. Finally, seven new lineages are proposed as suitable candidates to be described as new species in the genus *Trebouxia* belonging to clades A and S, provisionally named as:

*Trebouxia* *maresiae* nom. prov., isolated from *Seirophora villosa* collected on branches of *Juniperus phoenicea* in coastal dunes from Mallorca (Balearic Islands).

*Trebouxia arnoldoi* nom. prov., isolated from of *Buellia zoharyi* collected on volcanic biocrust in Tenerife (Canary Islands).

*Trebouxia* sp. OTUA25, isolated from *B. zoharyi* collected on Miocene gypsum biocrusts from Madrid (Spain).

*Trebouxia* sp. S02/S08, isolated from *Parmelia sulcata* collected in Soria (Spain).

*Trebouxia* sp. aff. *simplex*,isolated from *Umbilicaria* sp. collected in Tenerife (Canary Islands).

*Trebouxia* sp. OTUA12, isolated from *Cicinaria hispida* collected in Teruel (Spain).

*Trebouxia* sp. OTUA19, isolated from *Parmotrema perlatum* collected in Castellón (Spain).

Funding: PROMETEO/2017/039(GVA).