



Universidad
de Alcalá



PLANT RESPONSES TO STRESS CONDITIONS

Code
655

PlantStres

RESEARCH AREA

Ciencias Experimentales

COORDINATOR

Prof. Leonardo M. Casano
Prof. Alfredo Guéra

KEYWORDS

LiqAntioxidant, Desiccation
tolerance, Heavy metal,
Microalgae, Plant stress

AIM

- Biotechnology companies, especially those based on the use of microalgae

CONTACT



leonardo.casano@uah.es
Tlfn: 6432

Dpto. Ciencias de la Vida
Edificio de Ciencias
Ambientales
Carretera Madrid-Barcelona,
Km 33.100, 28805
Alcalá de Henares,
Madrid

ABOUT US

The main goal of this research group is to contribute toward a better understanding of the biochemical-molecular mechanisms that determine the responses of photosynthetic organisms under stressful environmental conditions, including tolerance to dehydration and pollution. Pollutants Agents, dehydration and other adverse environmental conditions (such as expected as a result of global climate change) increase in levels of active oxygen species that cause cell damage in general and the photosynthetic apparatus in particular. Consequently, we study the main components of the antioxidant system, which is relatively a poorly known in plants, especially in the non-vascular ones. In addition, we will analyze the effects of stressful conditions on the photosynthetic metabolism by studying the most important photosynthetic proteins and their coding genes. One basic support of our research is to harness the potential of current "omics" approaches to search for new genes and proteins involved in the mechanisms of tolerance, resistance, avoidance or repair of damage caused by stress conditions.

RESEARCH LINES

- Non-enzymatic antioxidants, antioxidant enzymes and antioxidant-related genes in plants under stress
- Mechanisms of dehydration tolerance in poikilohydric organisms, with especial focus in aeroterrestrial microalgae
- Mechanisms of resistance to heavy metals in microalgae and their possible use in bioremediation

OFFERED SERVICES

- Identification and molecular-genetic analysis of algae
- Qualitative and quantitative analysis of antioxidant enzymes in vegetal samples

MARKETABLE RESULTS

