PRENYLQUINONES AND CAROTENOIDS - POTENTIAL MEDIATORS OF TOLERANCE OF HIGHER PLANTS TO COMBINED LIGHT AND TEMPERATURE STRESS

Starting Date 01.12.2013
Duration 36 Months

Discipline Plant Biology

Main Goals
Contributing to our understanding of the mechanisms that determine plant tolerance to combined temperature and light stress
To investigate the protective mechanisms at the photosystem, membrane and lipid levels
To educate 3 PhD students.

Activities
Lipidomic, physiological and biophysical methods to investigated the temperature-light stress on tomato and Arabidopsis thaliana plants
Prenylquinone, carotenoid and lipid remodeling under temperature and high light stress
Temperature dependent effects on chloroplast ultrastructure and changes in number and size of plastoglobules.
Determination of activity and stoichiometry of both photosystems at different combinations of light-temperature
Tolerance improvement of photosynthesis to photoinhibition by combination of growth temperature-light regimes

Expected results
To discover how the photosynthetic system performs under increased temperatures and light intensities
To investigate the protective mechanisms at the photosystem, membrane and lipid levels
Educating three PhD researchers (one in Switzerland, two in Bulgaria)
Establishing a long-lasting cooperation between the Swiss and the Bulgarian partners

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