6400. Sugar extraction was performed according to ISO 2103. Glucose (Glu), fructose (Fru) and sucrose (Su) were separated and quantified by HPLC-RI. After 35-day experiment a decreased from 9.8±0.4 to 5.7±0.2 mol CO_2 $m^{-2}s^{-1}$, when Ψ soil dropped from~ -0.04 to -3MPa, respectively. Therefore, leaf Glu and Fru contents decreased 2 folds respect to the well-watered conditions while Su remained unchanged. At the same time, the content of soluble sugars in roots increased 2-2.5 folds. After 48 hs of irrigation, the levels of Glu and Fru from both organs are similar to the non-stressed condition. Decreasing levels of hexoses concentration in the leaves of stressed-plants could be the result of a lower rate of CO_2 fixation due to stomatal closure and / or export to the roots where would contribute to osmotic adjustment.

PL-P33
EXPRESSION ANALYSIS OF GENES INVOLVED IN C/N BALANCE IN RESPONSE TO STRESS IN *Microcystis* STRAINS

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Cyanobacteria are oxygenic photosynthetic organisms found in a diverse range of habitats that play a key role in the biogeochemical C/N cycle. Their ability to assimilate CO_2 from the environment comes from the Carbon Concentrating Mechanisms, which comprises inorganic carbon (Ci, as CO_2 and HCO_3^-), transporters for Ci uptake and protein microbodies named carboxysomes, where CO_2 concentration and fixation by Rubisco take place. *Microcystis* strains produce blooms and are able to synthesize microcystins, powerful hepatotoxins. It was shown that microcystins bind to carboxysome proteins, giving them stability during oxidative stress, a fairly common condition in a bloom. Also, genes involved in microcystin synthesis are up-regulated under stress. In the present work, we analyzed the expression of genes involved in C and N assimilation, microcystin synthesis, and redox balance in a *Microcystis* model strain (PCC 7806) and in a native toxic strain, under different C/N ratios and stress conditions. In PCC 7806, gene expression was up-regulated at higher C/N ratios. Interestingly, in the native strain that produced toxins constitutively, those genes were expressed at a high level even under control conditions. Our data support that microcystin production is related to stress and that may be involved in the cyanobacterium survival.

PL-P34
NITRIC OXIDE MEDIATES VESICLE TRAFFICKING OF PIN2 AUXIN TRANSPORTER IN *Arabidopsis*

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The plant hormone auxin is transported from cell to cell with strict directionality by influx and efflux carrier proteins. PIN efflux transporters exhibit polar plasma membrane localization. They determine the direction and rate of intracellular auxin flow. The subcellular localization of PIN2 protein is driven by endocytosis and recycling through vesicle trafficking in a process termed constitutive cycling. Auxin signaling trough SCF TIR1/AFBs complex has been also involved in PIN2 endocytosis and plasma membrane localization. Recently, it has been described that TIR1 auxin receptor is regulated by S-nitrosylation. In order to study the TIR1/AFB-mediated auxin signaling pathway and its regulation by S-nitrosylation in the control of PIN2 localization, pharmacological and functional approaches are being carried out. We found that the scavenging of endogenous nitric oxide (NO) by cPTIO impairs the auxin-mediated PIN2 plasma membrane localization. As well, we demonstrated that the physiological NO donor, GSNO, mimics the auxin action on PIN2 localization. In order to present a functional-genomic approach we crossed *Arabidopsis* TIR1 S-nitrosylation mutants with PIN2-GFP reporter plants. Finally, the mechanisms underlying this regulation will be discussed.

PL-P35
COLD STRESS RESPONSE AND THE SMALL HEAT SHOCK PROTEINS IN TOMATO FRUIT

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Ripening is the late developmental phase of tomato (*Solanum lycopersicum* L) fruit that starts when the green fruit reaches the final size and is completed when the fruit is red. Storing fruit at low temperature could cause physiological disorders known as chilling injury. It has been reported that small heat shock proteins (sHSP)