

## **Transcriptional characterization of genes induced during drought stress in *Lotus glaber* nodules**

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Legumes are able to fix atmospheric nitrogen by plant-*Rhizobium* symbiosis. The symbiotic structures known as nodules have variable sensibility to environmental changes such as salt and drought stress. Specifically, drought stress reduces nodule cortex permeability and, therefore, also reduces oxygen availability in nodules. Low oxygen availability affects biological nitrogen fixation (BNF) which decreases plant growth and enhance nodule senescence. Among the general mechanisms which contribute to drought tolerance are compatible osmolites accumulation, ROS detoxification, as well as synthesis of specific proteins which play important roles to protect other proteins or cellular components. Considering that *Lotus glaber* is a drought tolerant specie, and this is directly related with to fix nitrogen capacity, to study the factors involved in nodule survival and BNF maintenance was considered important. The purpose is to identify and characterize genes induced by drought stress in *Lotus glaber* nodules. Also, characterize genes considering their levels of expression under different drought stress conditions and different chemical agents. These results will be complemented with expression analysis of genes coding for proteins involved in BNF, such as leghaemoglobin, glutamine synthase, glutamate synthase and sucrose synthase, together with nitrogenase activity determinations and physiological characteristics.