

Studies of stress responses in *Arabidopsis thaliana* and fruits.

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Plants are exposed to a number of stressing situations and they have to trigger protection mechanisms in order to maintain their homeostasis. My group has been focused in two different areas of research related to stresses in plants. The first one has to do with the identification in fruits (peaches and nectarines) of proteins that respond to the exposure to cold, aiming to find a link between the expression of proteins and the chilling injury process that affect fruit quality. By using proteomic tools we have been able to identify proteins that are up- and down regulated such that we have identified metabolic pathways that are apparently altered and may contribute to the damage of the fruit. The second line of research has to do with the stress response that is triggered at the endoplasmic reticulum during the exposure of plants to different stress conditions. Specifically, we have analyzed the role of the re-glycosylation step that occurs during the calnexin cycle, process also known as quality control. By using *Arabidopsis thaliana* as a model, we found that mutation of the genes encoding for the proteins involved in the transport of UDP-glucose, the substrate required for re-glycosylation at the endoplasmic reticulum, lead to changes in pollen development and the ovules, suggesting that re-glycosylation of protein during their folding at the ER is a fundamental process for the plant life.

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