ABSTRACT

"Oxidative Stress Signal Transduction"

Prof Frank Van Breusegem
VIB, Dept. of Plant Systems Biology
Ghent University
Gent
BELGIUM

Different biotic and abiotic stresses adversely affect plant growth and development. A common theme within these environmental factors is the perturbation of reactive oxygen species (ROS) homeostasis. The signal transduction mechanisms of the oxidative stress response in plants are poorly understood. W e conducted genetic and chemical screens, which combined with proteomic approaches will lead to a more comprehensive overview on the components of the network that govern the oxidative stress response. These efforts resulted in the identification of a number of genes as new members of the oxidative stress gene network in plants. In our recent studies, we have identified a novel transcriptional regulator of the mitochondrial retrograde regulation and are assessing the modulation of cellular NAD(P) homeostasis through the perturbation of sirtuins as a new strategy to improve plant performance in stress conditions.