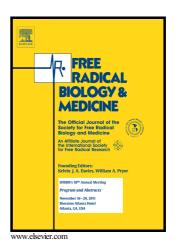
Author's Accepted Manuscript

Post-transcriptional regulation of the oxidative stress response in plants

Valerie Van Ruyskensvelde, Frank Van Breusegem, Katrien Van Der Kelen



PII: S0891-5849(18)30088-1

DOI: https://doi.org/10.1016/j.freeradbiomed.2018.02.032

Reference: FRB13641

To appear in: Free Radical Biology and Medicine

Received date: 7 December 2017 Revised date: 22 February 2018 Accepted date: 23 February 2018

Cite this article as: Valerie Van Ruyskensvelde, Frank Van Breusegem and Katrien Van Der Kelen, Post-transcriptional regulation of the oxidative stress response in plants, *Free Radical Biology and Medicine*, https://doi.org/10.1016/j.freeradbiomed.2018.02.032

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting galley proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

ACCEPTED MANUSCRIPT

Post-transcriptional regulation of the oxidative stress response in plants

Valerie Van Ruyskensvelde^{a,b}, Frank Van Breusegem^{a,b,*} Katrien Van Der Kelen^{a,b,1}

^aDepartment of Plant Biotechnology and Bioinformatics, Ghent University, 9052 Ghent, Belgium

^bCenter for Plant Systems Biology, VIB, 9052 Ghent, Belgium

*Corresponding author. frank.vanbreusegem@psb.ugent.be

ABSTRACT

Due to their sessile lifestyle, plants can be exposed to several kinds of stresses that will increase the production of reactive oxygen species (ROS) such as hydrogen peroxide, singlet oxygen and hydroxyl radicals in the plant cells and activate several signaling pathways that cause alterations in the cellular metabolism. Nevertheless, when ROS production outreaches a certain level, oxidative damage to nucleic acids, lipids, metabolites, and proteins will occur, finally leading to cell death. Until now, the most comprehensive and detailed readout of oxidative stress responses is undoubtedly obtained at the transcriptome level. However, transcript levels often do not correlate with the corresponding protein levels. Indeed, together with transcriptional regulations, post-transcriptional, translational, and/or post-translational regulations will shape the active proteome. Here, we review the current knowledge on the post-transcriptional gene regulation during the oxidative stress response *in planta*.

¹ Current address: Wetenschappelijk Instituut Volksgezondheid-Institut Scientifique de Santé Publique, 1050 Brussels, Belgium

Download English Version:

https://daneshyari.com/en/article/8961763

Download Persian Version:

https://daneshyari.com/article/8961763

<u>Daneshyari.com</u>