

## Omics exploration of the unfolded protein response in arabidopsis

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Eukaryotic cells under certain physiological and environmental conditions produce a massive accumulation of proteins in the endoplasmic reticulum, leading to the “endoplasmic reticulum stress”. Return to homeostasis is achieved through the activation of the UPR (unfolded protein response), a complex pathway that alleviates from toxic misfolded proteins and their effects. In recent years, a significant advance has taken place in the unravelling of the ER-stress perception and response pathways in different eukaryotic organisms. Nevertheless, the current knowledge of these pathways still lags behind in the case of plants (Howell SH, 2013). We have initiated a search for novel components in ER-stress signalling and UPR in the model plant Arabidopsis, using genetic and systems biology approaches (Hossain A, 2016). Here, we present an integrative strategy based on the analyses of transcriptomic data together with multiple yeast two-hybrid screenings, using previously known ER-stress components in Arabidopsis. Our results identified key elements involved in different abiotic/biotic stresses linked to ER-stress, autophagy and cell death processes.

### References:

- Hossain A, et al. Identification of novel components of the Unfolded Protein Response in Arabidopsis. *Front Plant Sci* (2016) 7: 650  
 Howell, SH (2013). Endoplasmic reticulum stress responses in plants. *Annu. Rev. Plant Biol.* 64, 477-499

**Funding:** MINECO. BIO2017-82873-R