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Investigation of the protein interaction of Selenium-binding Protein 1 (SBP1) with a papainlike protease (RD19c) in *Arabidopsis thaliana*.

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In our lab we investigate the protein-protein interactions of Selenium-binding Protein 1 (SBP1) in order to understand the protein network in which it participates. SBP1 is an intriguing protein because of its extended conservation in all life kingdoms and its involvement in sensing stress. The papain-like protease (RD19c) hydrolyzes peptide bonds, plays a crucial role in the fate of proteins and belongs to the family of Papain-like cysteine proteases. Moreover, it has been proposed that RD19c participates in another development through programmed cell death. In our study we studied the tissue specific expression of RD19c and its differential expression under Se treatment. Furthermore, we defined the sub-cellular localization in a protoplast system of RD19c and we investigated the aforementioned interaction in a yeast two-hybrid system followed by BiFC protoplast system experiments. RD19c is expressed in hydathodes, stomata, main root and lateral roots, that is, tissues similar with those SBP1 is expressed in. SBP1 is localized in the cytosol and the nucleus whereas RD19c was detected probably in vesicle structures. Despite their different subcellular localization, we detected interaction between them in the cytosol. We suggest that this interaction takes place in response to different stresses leading probably to programmed cell death.

Keywords: SBP1, RD19c, PLCPs, stress response

Biography:

Studied Biology in University of Athens from which she graduated in 2017. Since then she is a PhD candidate in Molecular Plant Physiology in the same department, funded by the State Scholarships Foundation (I.K.Y.) and has published 2 papers.