B·DEBATE International Center for Scientific Debate BARCELONA

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CHRISTIANE FUNK CV

SPEAKER AT:

THE DEATH OF PLANT CELLS.

FROM PROTEASES TO FIELD APPLICATIONS

October, 2nd and 3rd , 2013, Barcelona

Christiane Funk, Professor in Biochemistry at Umeå Univesity, Umeå, Sweden

Christiane Funk is Professor in Biochemistry at Umeå University, situated in Northern Sweden. She is associated with the Umeå Plant Science Centre, an organization of more than 30 different research groups focusing on various aspects of plant science. With her research team she is studying the model plant Arabidopsis thaliana, the cryptophyte algae Guillardia theta and the cyanobacterium Synechocystis sp. PCC 6803 to study the assembly and degradation pigment-binding proteins. After her Ph.D. at the TU Berlin, Germany, Christiane Funk performed post-doctoral research stays in the groups of Prof. Wim Vermaas, Arizona State University, USA and Prof. Tom Wydrzynksi, Australian National University, Australia. She then builds up her own research group at Stockholm University, Sweden and in 2002 moved to Umeå.

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Impact of Deletion of the Metalloprotease FtsH11 in *Arabidopsis thaliana*

Proteolysis is of tremendous importance for plants, leaf senescence and seed germination are two examples where proteolysis, together with storage carbohydrate degradation, is the main driver of the whole process. Yet, knowledge about plant proteolysis is very incomplete and scattered. The FtsH proteases are a family of ATP-dependent metalloproteases. FtsH proteases are found in eubacteria, animals and plants and given their prokaryotic evolutionary origin, it is not surprising that their subcellular localization is restricted to mitochondria and chloroplasts. In Arabidopsis thaliana 12 active family members are present, in addition, five genes coding for proteins homologous to FtsH (AtFtsHi 1-5) have been detected in the genome, which lack the conserved zinc-binding motif HEXXH, and therefore presumably are inactive. Of the 12 active FtsH poteases, eight FtsH proteins (FtsH1, 2, 5, 6-9, 12) are transported into the chloroplast and three into mitochondria (FtsH3, 4, and 10). FtsH11 is reported to be dual targeted, it has been found in mitochondria by proteomic analysis, and GFP fused to the pre-sequence of FtsH11 was targeted to the chloroplast. Here we will discuss the impact of FtsH11 during plant development.

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