

PlantLink Researcher in the spotlight

Cecilia Emanuelsson

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*This month, we turn the spotlight to **Professor Cecilia Emanuelsson** at the Department of Biochemistry and Structural Biology, Lund University. Cecilia Emanuelsson has been a driver behind the proteomics platform at the Faculty of Science in Lund and has among other things studied plant allergens using this system. Heat shock proteins have been an interest of her throughout her research career as well as plant stress resilience. She is also the coordinator of the very popular hands-on PhD education Postgraduate Courses in the Life Sciences at Lund University.*



-What is currently on top of your research agenda?

The small heat shock protein (sHsp) chaperones, which prevent protein aggregation in cells. We do protein chemistry on one human and one plant sHsp, in collaboration with cell biologists and physical chemists that use mathematics to develop kinetics of aggregation as a tool.

-Tell us about your latest publication?

DNAJB6 is a human sHsp-like chaperone protein that efficiently inhibits aggregation of peptides that are very amyloidation-prone, like those in Alzheimer's disease. We found that DNAJB6 prevents the primary nucleation event, which is important for evaluating the mechanism of amyloid formation.

-What led you into your particular field of research?

The sHsp chaperones exist in all cells and are crucial for cell survival. As a student I became interested in photosynthesis and light stress, which then led to heat stress and the *Arabidopsis thaliana* chloroplast-localized sHsp, which we have found to increase the stress resistance.

-What are the implications of your research for the society?

For promoting plant stress resistance, and for preventing the human diseases that are due to protein aggregation. To understand the mechanism of how to inhibit aggregation also has a scientific value.

-Finally, let's say you got unlimited research funds; where would your research be five years from now?

In an international postdoc program, with repatriation start-up grants to postdocs when they return, to explore sHsps in a wide range of organisms, in a network spanning from biophysical chemistry over protein chemistry to plant cultivation and disease therapy and health care.