

**Joint Seminar
CIBSS and Molecular Plant Sciences**

**Light- and sugar-dependent alternative splicing
during seedling photomorphogenesis**

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Abstract:

Alternative precursor mRNA splicing (AS) is increasingly recognized to play an eminent role in plant development. Accordingly, tight regulation of AS in response to internal and external cues allows fine-tuning of gene expression. Among the numerous external signals plants perceive to adjust their development, light is of particular importance and controls several processes including seedling photomorphogenesis. In our previous work, we have demonstrated that illumination and sucrose supply trigger similar AS changes in etiolated *Arabidopsis* seedlings, indicating that light-mediated AS may primarily respond to metabolic signals. Furthermore, chemical inhibition of kinase signalling and microRNA-mediated suppression of genes involved in energy signalling induced specific splicing shifts. Using phosphoproteomics, we identified a group of splicing regulators that show sugardependent phosphorylation. We propose that these splicing regulators might be involved in controlling light- and sugar-mediated AS via phosphorylation-dependent modulation of their activity. With our ongoing work, we would like to characterize the upstream signalling and molecular mechanisms underlying light regulated AS in seedling development.

Guests are welcome!

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