

Conclusion

Three novel SR-proteins in SR subfamily were identified in *P. patens*. Gene expression profiles and alternative splicing are consistent with what have been seen in *A. thaliana* and *O. sativa*.

This suggests that SR-proteins in early diverging land plant may have the same function as in flowering plants.

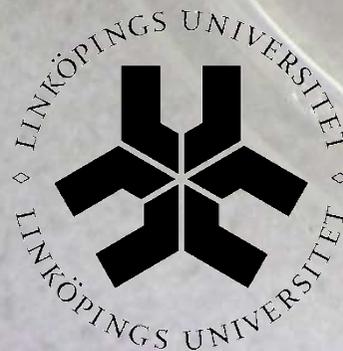
Acknowledgements

Many thanks to my supervisor Johan Edqvist for all great support and to Andreas Ring for all the help and contribution to the discussions of my results. I will also thank Monika Edstam for pictures and help in the lab.



Contact info:

Jessica Olsen
jesol907@student.liu.se
jessie_olsen@yahoo.se



**How does stress
effect the moss
*Physcomitrella
patens*?**

Jessica Olsen
Supervisor: Johan Edqvist
IFM molecular genetics

Background

- Plants do not have the ability to move around so they have to be able to tolerate all kinds of environmental changes like dehydration and cold. To survive these conditions plants have developed strategies, like changing the expression of important genes and undergo alternative splicing.

- The Serine/Arginine rich proteins (SR proteins) are essential for gene expression in plants. SR-proteins have been shown to react in different ways when the plant is exposed to stress. SR-protein gene expression may change and/or the SR-protein structure may change as well in a process called alternative splicing.

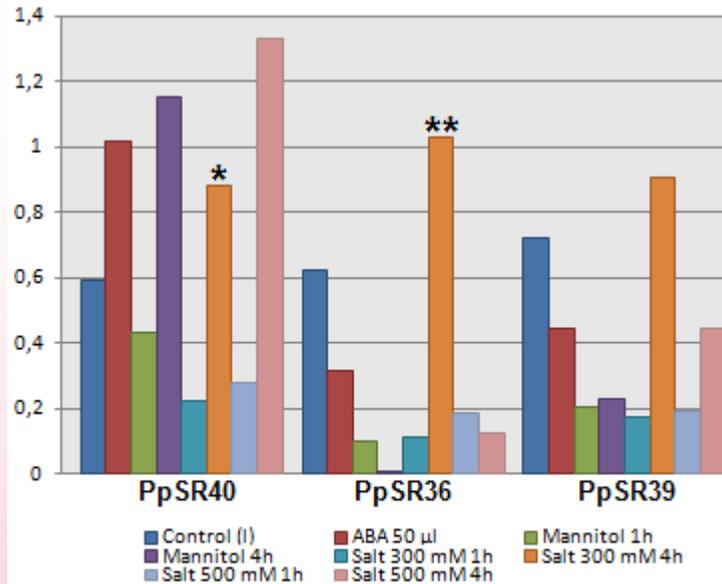


Figure 1. Expression profile of PpSR40, PpSR36 and PpSR39 after exposure of Salt, mannitol and ABA in liquid medium. One and two asterisks indicate one and two alternative splicing products respectively.

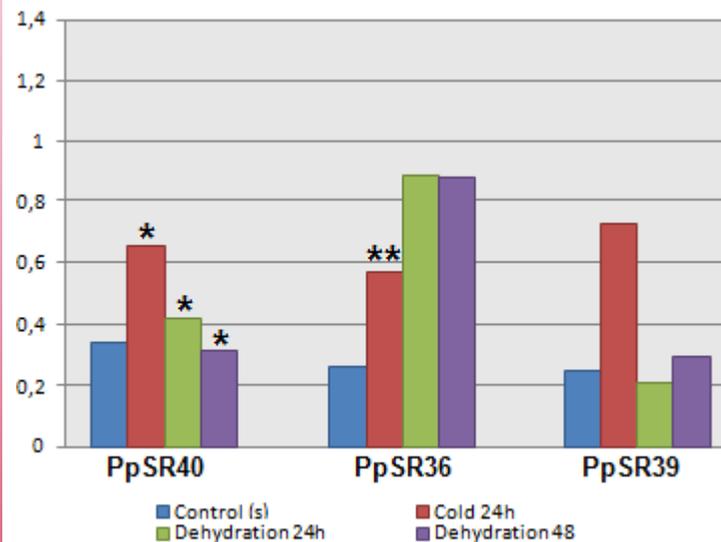


Figure 2. Expression profile of PpSR40, PpSR36 and PpSR39 after exposure of dehydration and cold on solid medium. One and two asterisks indicate one and two alternative splicing products respectively.

Aim

Learn about SR proteins in the SR subfamily of *P. patens* and study the change in alternative splicing pattern after stress treatments.

Results

After exposure to five types of stress (figure 1 and 2) the expression profile for the three SR proteins PpSR40, PpSR36 and PpSR39 changed. The SR-proteins showed some individual but also some overlapping expression patterns.

Alternative splicing occurred in the gene PpSR40 and PpSR36 after treatment of salt, cold and dehydration.