

***SLII*-mediated resistance to *Myzus persicae* aphids - Implications of transcription and temperature**

Cecilia Ström

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Supervisors: Karen Kloth and Benedicte Albrechtsen

Umeå University, Umeå Plant Science Centre

ABSTRACT

Aphids are highly destructive to crops around the world and finding resistance mechanisms in plants is of great importance. In this study, *SLI1* (*SIEVE ELEMENT-LINING CHAPERONE1*), a small heat shock-like protein with known effects on aphid resistance, was found to line the sieve tubes of the phloem in above ground tissues. Population assays and feeding behaviours of green peach aphids were used to investigate if overexpressing *SLII* led to higher resistance against aphids. Aphid resistance of four plant lines, with different levels of *SLII* expression, was measured at 20°C and 26°C, but the results did not indicate differences between temperatures. Low expression levels of *SLII* led to high susceptibility as demonstrated by increased phloem feeding and large aphid populations. Increased expression levels did not lead to increased resistance, but the expression consisted of an unknown ratio of spliced and un-spliced RNA. The unknown ratio inhibited accurate investigation of the correlation between expression levels and susceptibility.