



Universiteit
Leiden
The Netherlands

Forever young: how AHL15 delays developmental phase transitions to prevent ageing in plants

Luden, T.

Citation

Luden, T. (2025, May 28). *Forever young: how AHL15 delays developmental phase transitions to prevent ageing in plants*. Retrieved from <https://hdl.handle.net/1887/4247279>

Version: Publisher's Version

License: [Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

Downloaded from: <https://hdl.handle.net/1887/4247279>

Note: To cite this publication please use the final published version (if applicable).

**Forever Young:
How AHL15 delays developmental phase
transitions to prevent ageing in plants**

Thalia Luden

© 2025 Thalia Luden, Leiden, the Netherlands.

This work was supported by the Green Top Sectors grant nr. GSGT.2019.024 which was financed by the Dutch Research Council (NWO).

Front cover: *Arabidopsis thaliana* plant in the adult vegetative state, drawing by Thalia Luden. Mirrored plot of average enrichment profile of AHL15 and H2A variants scaled over *Arabidopsis* genes.

Cover design: Thalia & Urit Luden

Printed and bound by: Gildeprint

ISBN/EAN: 978-94-6496-402-8

**Forever Young:
How AHL15 delays developmental phase
transitions to prevent ageing in plants**

Proefschrift

ter verkrijging van
de graad van doctor aan de Universiteit Leiden,
op gezag van rector magnificus prof.dr.ir. H. Bijl,
volgens besluit van het college voor promoties
te verdedigen op woensdag 28 mei 2025
klokke 14:30 uur

door

Thalia Luden
geboren te Amsterdam
in 1993

Promotores:

Prof. dr. R Offringa

Dr. S. Balazadeh

Promotiecommissie:

Prof. Dr. A. H. Meijer

Prof. Dr. J. Memelink

Dr. K. Spaninks

Prof. Dr. M. E. Schranz, Wageningen University & Research

Dr. M. E. Stam, University of Amsterdam

Contents

Chapter 1	7
Regulation of the life history of flowering plants (Introduction)	
Chapter 2	47
Insights into polycarpic plant development through natural variation in the aerial rosette phenotype in <i>Arabidopsis thaliana</i>	
Chapter 3	87
GreenLeafVI: An ImageJ plugin for high-throughput analysis of leaf chlorophyll content	
Chapter 4	107
The plant longevity gene AHL15 inhibits leaf senescence by repressing <i>ORESARA1</i> and cytokinin degradation	
Chapter 5	141
AHL15 modulates gene expression independently of chromatin accessibility and histone modifications	
Summary	179
Samenvatting	187
Curriculum Vitae	195