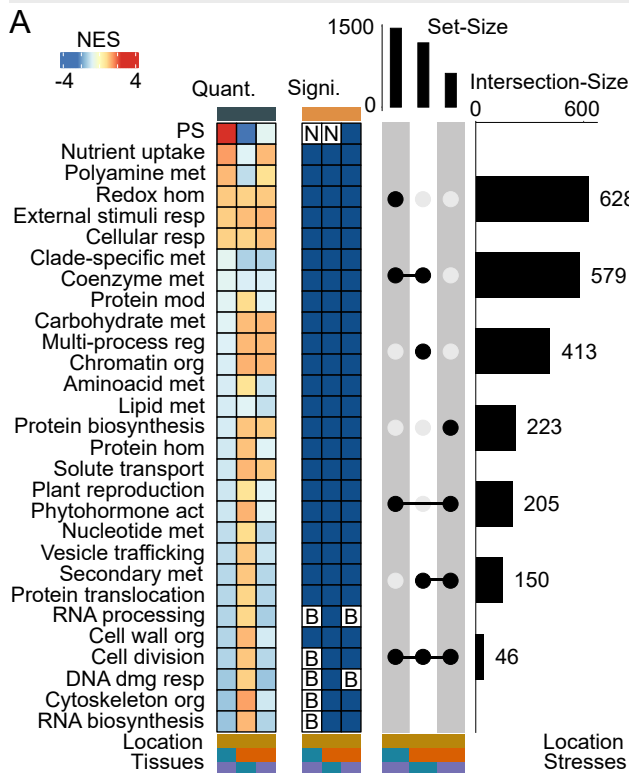
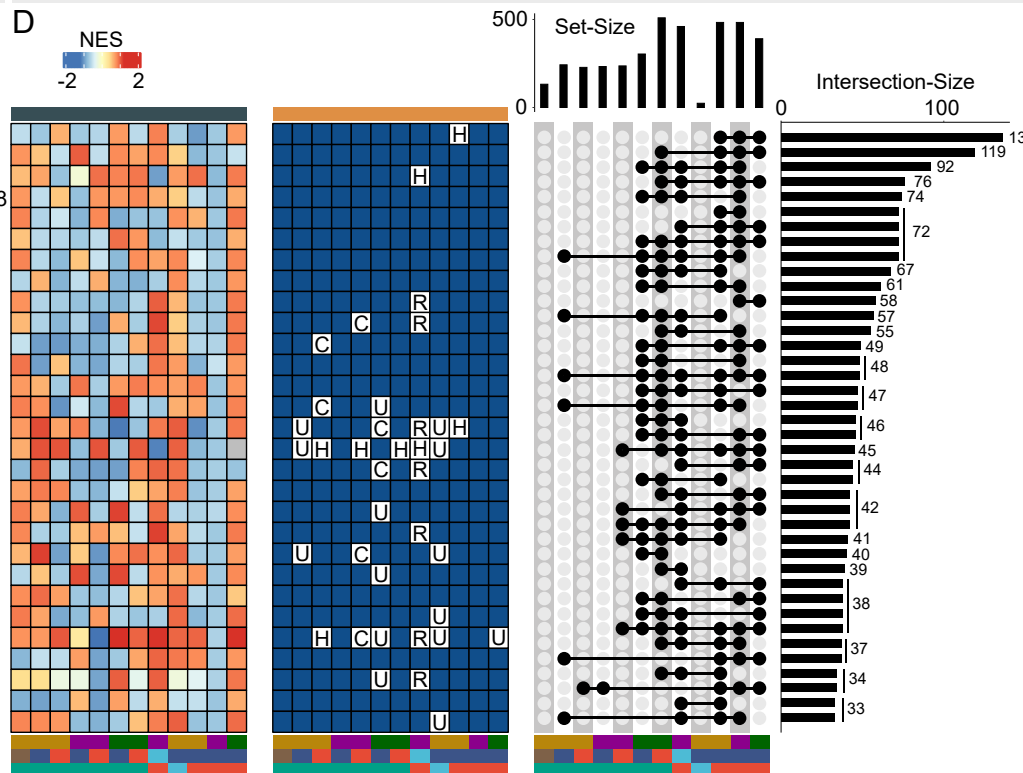


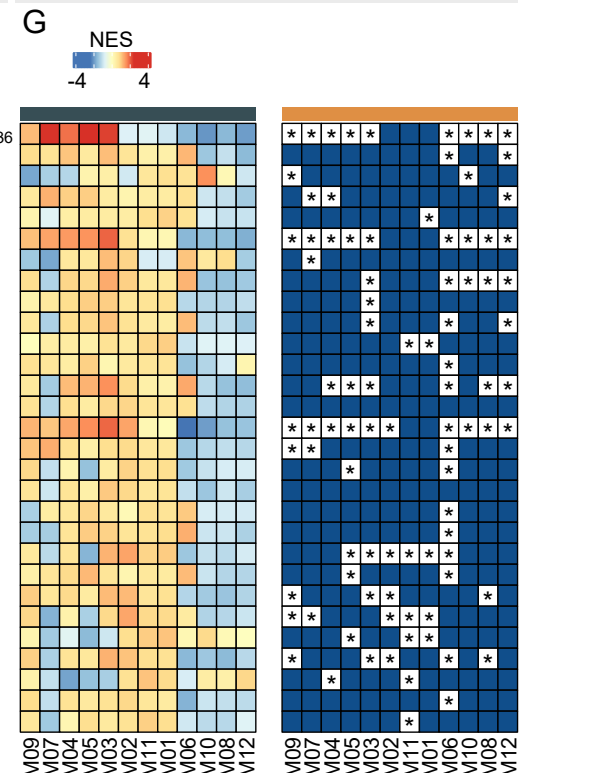
Tissues - Differential



Stresses - Differential



Network - Tissues + Stresses



B Summary Volcano Analyses

Needle - Bud	Root - Needle	Root - Bud
(+) FTSH1	(+) ATP synthase sub B	(+) ATP synthase sub B
(+) EGY1	(+) MDH	(+) MDH
(-) NADPH-dependent FMN reductase	(-) FTSH1	(-) NADPH-dependent FMN reductase
(-) Terpene synthase	(-) EGY1	(-) Terpene synthase

B Summary Volcano Analyses

Needle - Bud	Root - Needle	Root - Bud
(+) FTSH1	(+) ATP synthase sub B	(+) ATP synthase sub B
(+) EGY1	(+) MDH	(+) MDH
(-) NADPH-dependent FMN reductase	(-) FTSH1	(-) NADPH-dependent FMN reductase
(-) Terpene synthase	(-) EGY1	(-) Terpene synthase

C

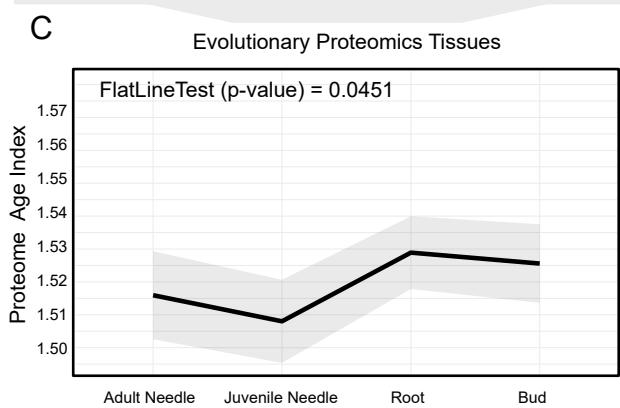
Evolutionary Proteomics Tissues

FlatLineTest (p-value) = 0.0451

Proteome Age Index

Tissue	Proteome Age Index (approx.)
Adult Needle	1.516
Juvenile Needle	1.508
Root	1.528
Bud	1.525

Adult Needle Juvenile Needle Root Bud



Summary Volcano Analyses		
Total UV - Control	Total Heat - Control	Nucleus UV - Control
(+) RNA-recognition motif 1, zinc-finger	(+) Calreticulin, PPR1/2/3	(+) psaA, psaB-related
(+) Glutathion-S-transferase	(+) HSP20/HSP21	(+) RPL9
(-) MA3, Methyltransferase, PPR1/2	(-) ATP3	(-) FoP chromatin binding, CENP-C
(-) OSCP, ATP synthase sub A/B	(-) Histone H2A	(-) Rhodanese, TROL
Nucleus Heat - Control	Chloro UV - Control	Chloro Heat - Control
(+) HSP90	(+) G6PD4	(+) HSP20s
(+) HSP21	(+) UDP-glycosyltransferase	(-) Elongation factor G, domain II
(-) MAN1	(-) Sm-like protein LSM	(-) DEG8
(-) Cytochrome P450	(-) SPD1	

Summary Volcano Analyses		
Total UV - Control	Total Heat - Control	Nucleus UV - Control
(+) RNA-recognition motif 1, zinc-finger	(+) Calreticulin, PPR1/2/3	(+) psaA, psaB-related
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Nucleus Heat - Control	Chloro UV - Control	Chloro Heat - Control
(+) HSP90	(+) G6PD4	(+) HSP20s
(+) HSP21	(+) UDP-glycosyltransferase	(-) Elongation factor G, domain II
(-) MAN1	(-) Sm-like protein LSM	(-) DEG8
(-) Cytochrome P450	(-) SPD1	

Heatmap

Quantity
Significance
P-adj. < 0.1
P-adj. > 0.1

Location

Chloroplast (Chloro)
Nucleus
Total

Tissues

Bud (B)
Needle (N)
Root (R)

Stresses

Control (C)
Heat (H, HS)
Fusarium (FU)
Recovery (R)
UV (U)

Heatmap

Quantity
Significance
P-adj. < 0.1
P-adj. > 0.1

Location

Chloroplast (Chloro)
Nucleus
Total

Tissues

Bud (B)
Needle (N)
Root (R)

Stresses

Control (C)
Heat (H, HS)
Fusarium (FU)
Recovery (R)
UV (U)

Heatmap

Quantity
Significance
P-adj. < 0.1
P-adj. > 0.1

Location

Chloroplast (Chloro)
Nucleus
Total

Tissues

Bud (B)
Needle (N)
Root (R)

Stresses

Control (C)
Heat (H, HS)
Fusarium (FU)
Recovery (R)
UV (U)

Heatmap

Quantity
Significance
P-adj. < 0.1
P-adj. > 0.1

Location

Chloroplast (Chloro)
Nucleus
Total

Tissues

Bud (B)
Needle (N)
Root (R)

Stresses

Control (C)
Heat (H, HS)
Fusarium (FU)
Recovery (R)
UV (U)

Heatmap

Quantity
Significance
P-adj. < 0.1
P-adj. > 0.1

Location

Chloroplast (Chloro)
Nucleus
Total

Tissues

Bud (B)
Needle (N)
Root (R)

Stresses

Control (C)
Heat (H, HS)
Fusarium (FU)
Recovery (R)
UV (U)

Heatmap

Quantity
Significance
P-adj. < 0.1
P-adj. > 0.1

Location

Chloroplast (Chloro)
Nucleus
Total

Tissues

Bud (B)
Needle (N)
Root (R)

Stresses

Control (C)
Heat (H, HS)
Fusarium (FU)
Recovery (R)
UV (U)

Heatmap

Quantity
Significance
P-adj. < 0.1
P-adj. > 0.1

Location

Chloroplast (Chloro)
Nucleus
Total

Tissues

Bud (B)
Needle (N)
Root (R)

Stresses

Control (C)
Heat (H, HS)
Fusarium (FU)
Recovery (R)
UV (U)

Heatmap

Quantity
Significance
P-adj. < 0.1
P-adj. > 0.1

Location

Chloroplast (Chloro)
Nucleus
Total

Tissues

Bud (B)
Needle (N)
Root (R)

Stresses

Control (C)
Heat (H, HS)
Fusarium (FU)
Recovery (R)
UV (U)

F

Heatmap showing Spearman correlation coefficients between 15 variables. The variables are grouped by tissue type: Locat (green), Tissue (purple), and Stress (orange). The variables are: Chloro Needle C, Chloro Needle HS T1, Chloro Needle HS T2, Chloro Needle HS T3, Chloro Needle UV T1, Chloro Needle UV T2, Chloro Needle UV T3, Nucleus Needle C, Nucleus Needle HS T1, Nucleus Needle HS T4, Nucleus Needle HS T2, Nucleus Needle HS T3, Nucleus Needle HS R, Nucleus Needle UV T1, Nucleus Needle UV T2, Total Bud C, Total Bud FU T1, Total Needle C, Total Needle HS T1, Total Needle HS T2, Total Needle UV R, Total Needle UV T1, Total Needle UV T2, Total Needle UV T3, and Total Root. The heatmap shows a block-like pattern of correlations, with higher values (red) indicating stronger positive correlations and lower values (blue) indicating weaker or negative correlations. A color scale at the bottom right ranges from -1 (blue) to 1 (red).

	M09	M07	M04	M05	M03	M02	M11	M01	M06	M10	M08	M12
Chloro Needle C			0.3	0.3								
Chloro Needle HS T1	0.3	0.4										
Chloro Needle HS T2	0.3	0.5										
Chloro Needle HS T3	0.4	0.5										
Chloro Needle UV T1			0.3	0.4	0.3							
Chloro Needle UV T2				0.5	0.3							
Chloro Needle UV T3				0.4	0.3							
Nucleus Needle C			-0.3								0.4	
Nucleus Needle HS T1					0.3							
Nucleus Needle HS T4	0.3				0.3							
Nucleus Needle HS T2					0.3							
Nucleus Needle HS T3					0.3							
Nucleus Needle HS R					0.4							
Nucleus Needle UV T1			-0.3	-0.3							0.6	
Nucleus Needle UV T2			-0.3	-0.3							0.5	
Total Bud C						0.6	0.3	0.5				
Total Bud FU T1								0.7				
Total Needle C						0.4			0.3			
Total Needle HS T1									0.6			
Total Needle HS T2									0.5			
Total Needle UV R									0.4			
Total Needle UV T1									0.4			
Total Needle UV T2									0.5			
Total Needle UV T3									0.4			
Total Root							0.5					