

Table S1. MS/MS spectrum database search analysis summary

Total spectrum	Matched spectrum	Peptides	Unique peptides	Identified proteins	Quantifiable proteins
2061695	226165 (11.0%)	24722	21770	3879	3200

Table S4. List all of the differently abundant proteins between the four comparable groups (WT_LT/WT_OT, *Az34*_LT/WT_OT, *Az34*_LT/*Az34*_OT, *Az34*_OT/WT_OT). WO1, WT_OT-1; WO2, WT_OT-2; WO3, WT_OT-3; WL1, WT_LT-1; WL2, WT_LT-2; WL3, WT_LT-3; AO1, *Az34*_OT-1; AO2, *Az34*_OT-2; AO3, *Az34*_OT-3; AL1, *Az34*_LT-1; AL2, *Az34*_LT-2; AL3, *Az34*_LT-3; OT, optimum temperature; LT, low temperature.

Table S3. The calibration curve of phytohormone quantification in barley leaves

Compounds	Calibration curve	Correlation coefficient R
ABA	$y = 17606.93313 x + 1648.63773$	$r = 0.99165$
IAA	$y = 19126.28403 x + 3720.99540$	$r = 0.9950$
IBA	$y = 493.11550 x + (-805.69827)$	$r = 0.99379$
IPA	$y = 3.20808e5 x + 19022.90460$	$r = 0.99183$
JA	$y = 1208.45440 x + (-1.54468)$	$r = 0.99817$
MeSA	$y = 4.57663e5 x + (-1113.60729)$	$r = 0.99798$
SA	$y = 415.65675 x + 772.64317$	$r = 0.99608$
Zeatin	$y = 1922.94177 x + (-120.11671)$	$r = 0.99776$