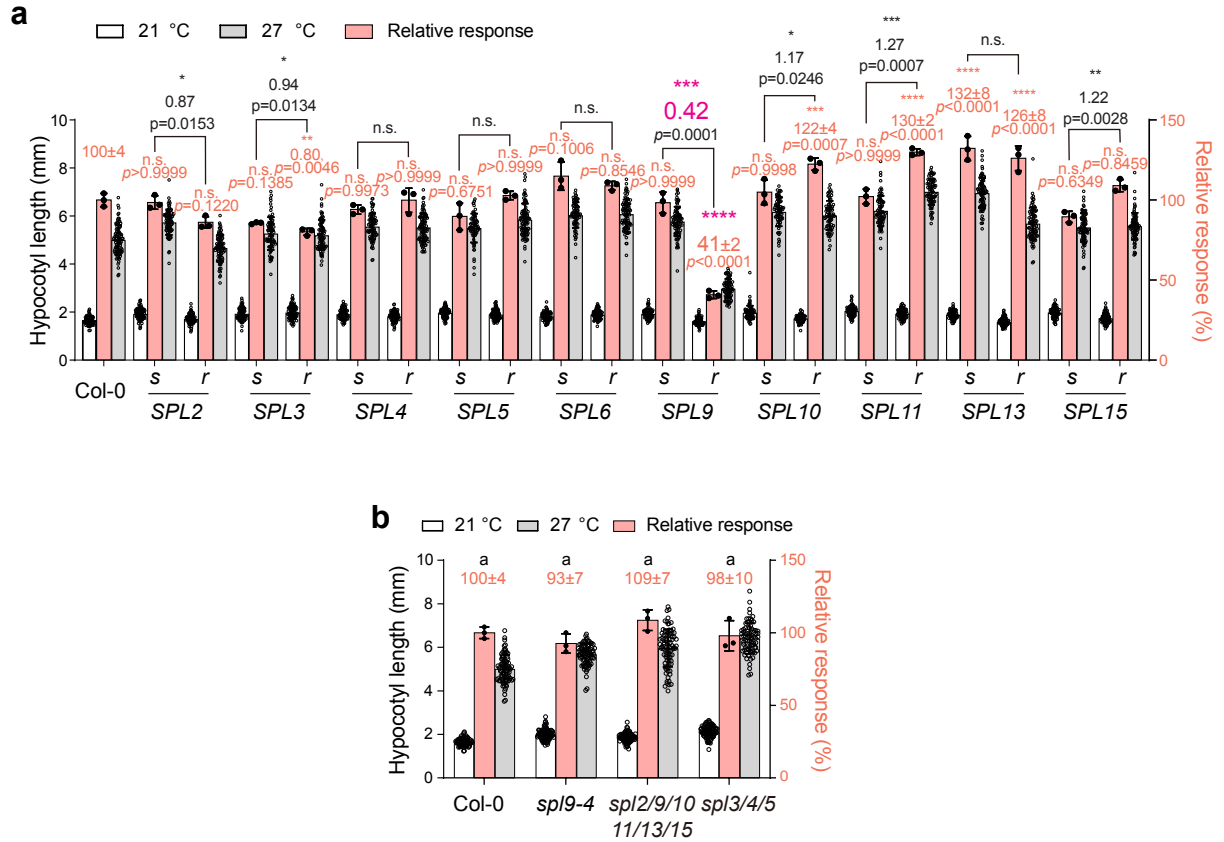




Supplementary Fig. 1. Thermomorphogenic hypocotyl growth is regulated primarily by SPL9. **a** Hypocotyl length measurements of 4-d-old seedlings expressing either miR156-sensitive (*s*) or -resistant (*r*) of *SPL2*, *SPL3*, *SPL4*, *SPL5*, *SPL6*, *SPL9*, *SPL10*, *SPL11*, *SPL13*, and *SPL15* grown under 50 $\mu\text{mol m}^{-2} \text{s}^{-1}$ R light at 21 °C and 27 °C. The relative response to the warm temperature of each transgenic line was compared with that of Col-0 to identify the line(s) defective in the temperature response using one-way ANOVA (* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, **** $p < 0.0001$), $n = 3$ independent biological replicates, and the p values are labeled in pink color. Among the 20 lines, *rSPL9* was the only line displaying a significant reduction in the hypocotyl response to warm temperatures. Also, the relative responses between the miR156 resistant and sensitive lines were compared to assess the role of each *SPL* in miR156-mediated thermomorphogenesis using a two-tailed Student's *t*-test (* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$), $n = 3$ independent biological replicates, the p values and fold changes are labeled in black color. n.s. indicates no significant difference. *SPL9* was the only gene displaying a more than twofold decrease in the relative response of the miR156-resistant (*rSPL9*) line compared with that of the miR156-sensitive (*sSPL9*) line. **b** Hypocotyl length measurements of 4-d-old Col-0, *spl9-4*, *spl2/9/10/11/13/15*, and *spl3/4/5* seedlings grown under 50 $\mu\text{mol m}^{-2} \text{s}^{-1}$ R light at 21 °C and 27 °C. Pink numbers show the mean $\pm$ s.d. values of the relative responses and the lowercase letters indicate no significant difference in the relative responses (ANOVA, Tukey's HSD, $p < 0.01$, $n = 3$ independent biological replicates). For **a** and **b**, the open and grey bars represent hypocotyl length measurements at 21 °C and 27 °C, respectively. The pink bars show the relative response, which is defined as the relative hypocotyl response to 27 °C of a line compared with that of Col-0 (set at 100%). Error bars for the hypocotyl measurements represent s.d., $n =$ at least 70 seedlings from three independent experiments; error bars for the relative responses represent s.d., $n = 3$ independent biological replicates. The centers of the error bars represent the mean. The source data underlying the hypocotyl measurements in **a** and **b** are provided in the Source Data file.

Supplementary Table 1. Primers for qRT-PCR analysis.

Accession	Gene name	Forward primer	Reverse primer
AT1G13320	<i>PP2A</i>	TATCGGATGACGATTCTTCGTGCAG	GCTTGGTCGACTATCGGAATGAGAG
AT2G43010	<i>PIF4</i>	AACCAGATCATCTCCGACCGGTTT	TCCCGCCGGTGAACATAATCTCAA