

Supplementary Information

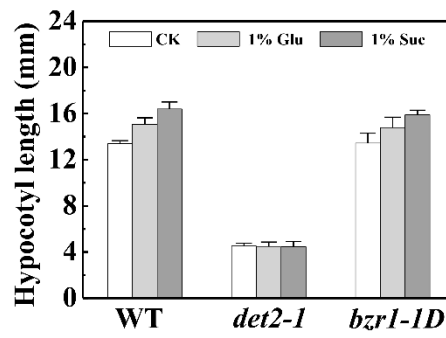


Figure S1. Hypocotyl length of WT, *det2-1* and *bzr1-1D* plants treated with glucose. Error bars represent SD (n > 18).

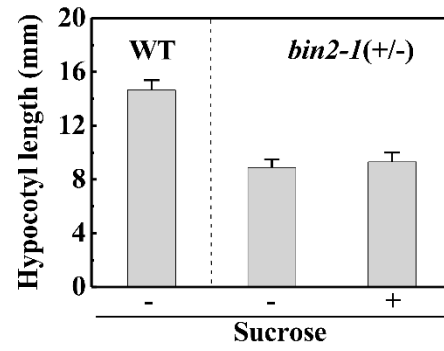


Figure S2. Heterozygous *bin2-1(+/-)* mutant in responsive to sucrose. Error bars represent SD (n > 25).

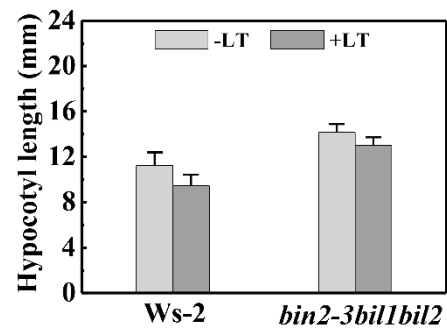


Figure S3. Hypocotyl length of Ws-2 and *bin2-3bil1bil2* plants treated with S6K inhibitor (LY2584702 Tosylate, LT). Error bars represent SD (n > 18).

At S6K1	1	MVSSQRPVP-----NKIQKQQYLSTSPNSVLKDDVELEFSDVFGPLPE----EANDIA
At S6K2	1	MVSSQCSVANKNQTGKPFQKHLSTLSTPKSVLGDNLQLQSDVFGPMPEANSEEEACDVA
At S6K1	51	YDEPAVVYSRSHSLVGPCSLDSHSLKLTKLTLLETEDSI DLVECLEGESIKENDDFSGND
At S6K2	61	YDEPAVVYSRSHSLVGPSLVVSHSLKMNKLTLRRETEDSVDLVECEGESIKENDEFSGND
At S6K1	111	DSQNEKALEGDLVKVSGVVGIDDFEVMKVVGKGAFGKVYQVRKKETSEIYAMKVMRKDHI
At S6K2	121	DTDSSEKSP----EEVSGVVGIEDFEVLKVVGQGAFGKVYQVRKKDTSEIYAMKVMRKDKI
At S6K1	171	MEKNHAEYMKAEERDILTKIDHPFIVQLKYSFQTKYRLYLVLDFI NGGHLFFQLYHQGLFR
At S6K2	177	MEKNHAEYMKAEERDILTKIDHPFIVQLKYSFQTKYRLYLVLDFI NGGHLFFQLYHQGLFR
At S6K1	231	EDLARVYTAEIVSAVSHLHEKGI MHRDLKPENILVDTDGHVMLTDFGLAKEFEENTRSNS
At S6K2	237	EDLARVYTAEIVSAVSHLHEKGI MHRDLKPENILVDVDGHVMLTDFGLAKEFEENTRSNS
At S6K1	291	WCGTTEYMAPEIVRGKGHDKAADWWSVGI LLYEMLTGKPPFLGSKGKI QOKI VKDKI KLP
At S6K2	297	WCGTTEYMAPEIVRGKGHDKAADWWSVGI LLYEMLTGKPPFLGSKGKI QOKI VKDKI KLP
At S6K1	351	QFLSNEAHAILKGLLQKEPERRLGSGLSGAEEIKQHKWFKGINWKKLEAREVMPSFKPEV
At S6K2	357	QFLSNEAHAILKGLLQKEPERRLGSGPSGAEEIKKHKWFKAINWKKLEAREVQPSFKPAV
At S6K1	411	SGRQCI ANFDKCWTDMSVLDSPASSPSSDPKANPFTNFTYVRPPPSFLHQSTTTTL
At S6K2	417	SGRQCI ANFDKCWTDMSVLDSPASSPNSDAKANPFTNFTYVRPPHSFLHRTTSNL

Figure S4. Amino acid sequence alignment of S6K1 and S6K2.

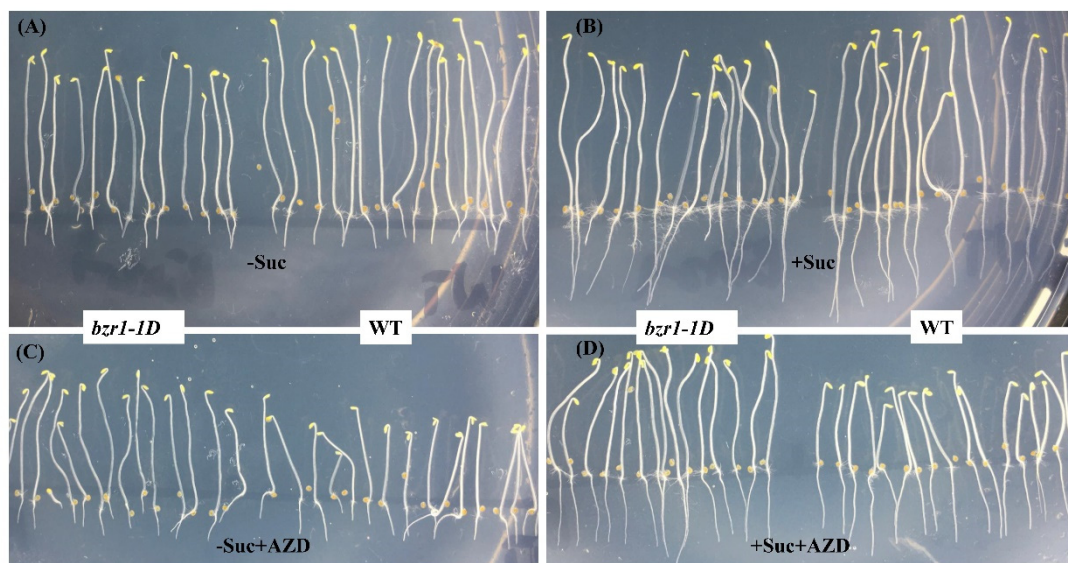


Figure S5. Root length of WT and *bsr1-1D* plants with different treatments.

Table S1. Primer sequences used for qRT-PCR.

BIN2-qF:	ACAAAAGGATGCCCCAGAA	Li et al. (2020)
BIN2-qR:	TGAAGTTGAAGAGAGGCGGG	
BZR1-qF:	CAACTAGGCAAACCCAAATG	
BZR1-qR:	TCTAACACTCCAATGCTTCC	
BIL1-qF:	AACTCGCGAAGAAATCCGGT	This study
BIL1-qR:	AAGGTCAATGGCTTCCGGAG	
BIL2-qF:	TCCATTACCGCCATTGTTCA	Zhang et al. (2021)
BIL2-qR:	TTCTCTTCAGACATGCACAG	
UBQ10-qF:	AATTGGAGGATGGTCGTACTTT	This study
UBQ10-qR:	CAAAGTCTTGACGAAGATCTGC	

Li, J.; Terzaghi, W.; Gong, Y.; Li, C.; Ling, J.J.; Fan, Y.; Qin, N.; Gong, X.; Zhu, D.; Deng, X.W. Modulation of BIN2 kinase activity by HY5 controls hypocotyl elongation in the light. *Nat. Commun.* **2020**, *11*, 1592. <https://doi.org/10.1038/s41467-020-15394-7>.

Zhang, W.; Tang, Y.; Hu, Y.; Yang, Y.; Cai, J.; Liu, H.; Zhang, C.; Liu, X.; Hou, X. Arabidopsis NF-YCs play dual roles in repressing brassinosteroid biosynthesis and signaling during light-regulated hypocotyl elongation. *Plant Cell* **2021**. <https://doi.org/10.1093/plcell/koab112>.