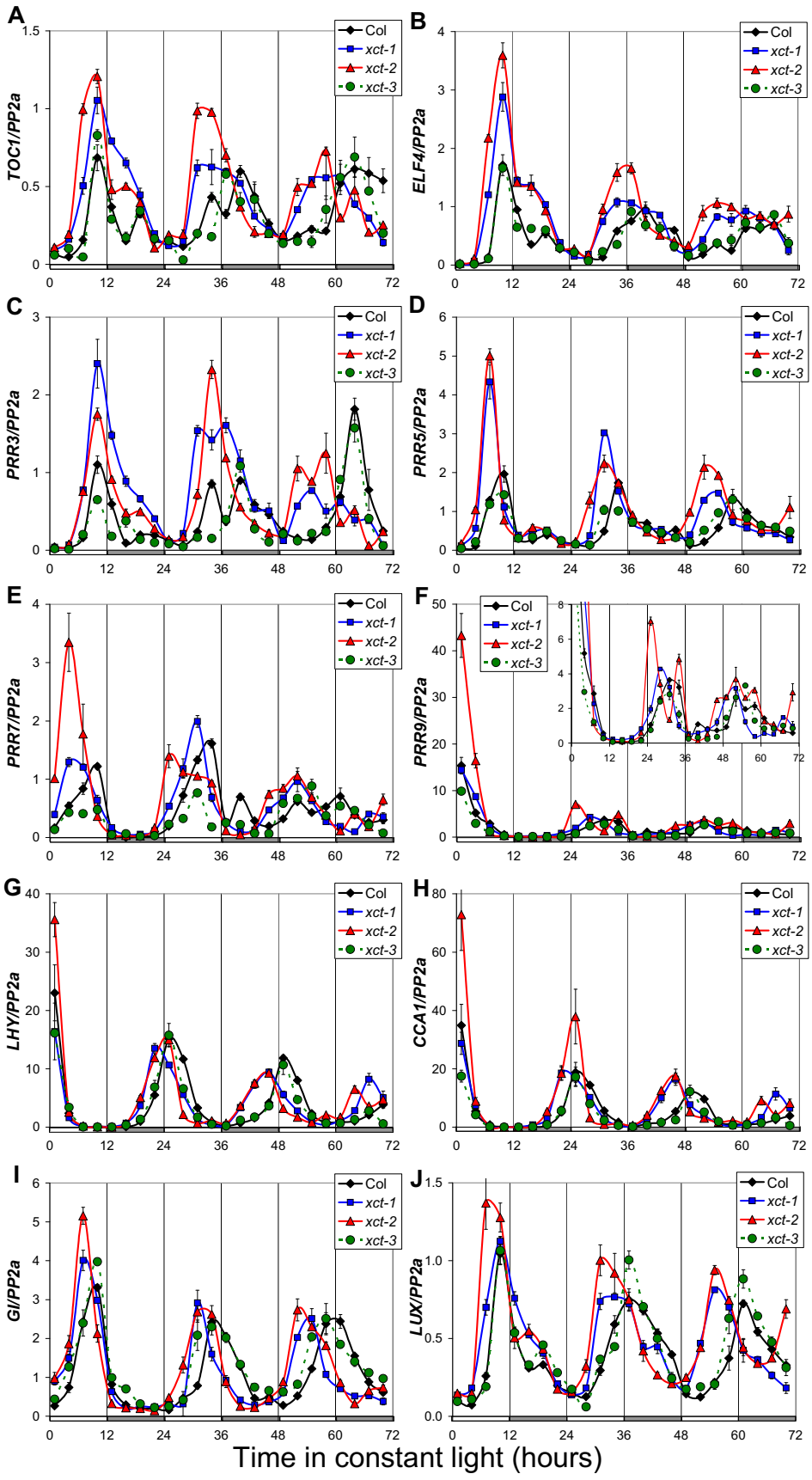
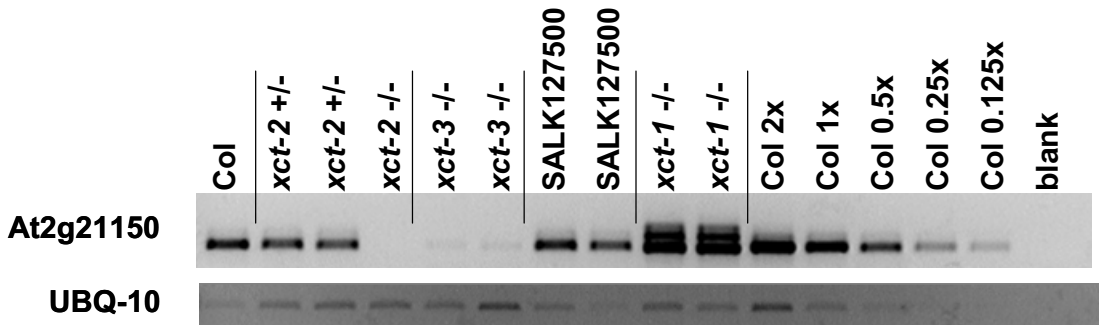
Supplemental Data Martin-Tryon et al. (2008) XAP5 CIRCADIAN TIMEKEEPER coordinates light signals to properly time the circadian clock and photomorphogenesis in Arabidopsis

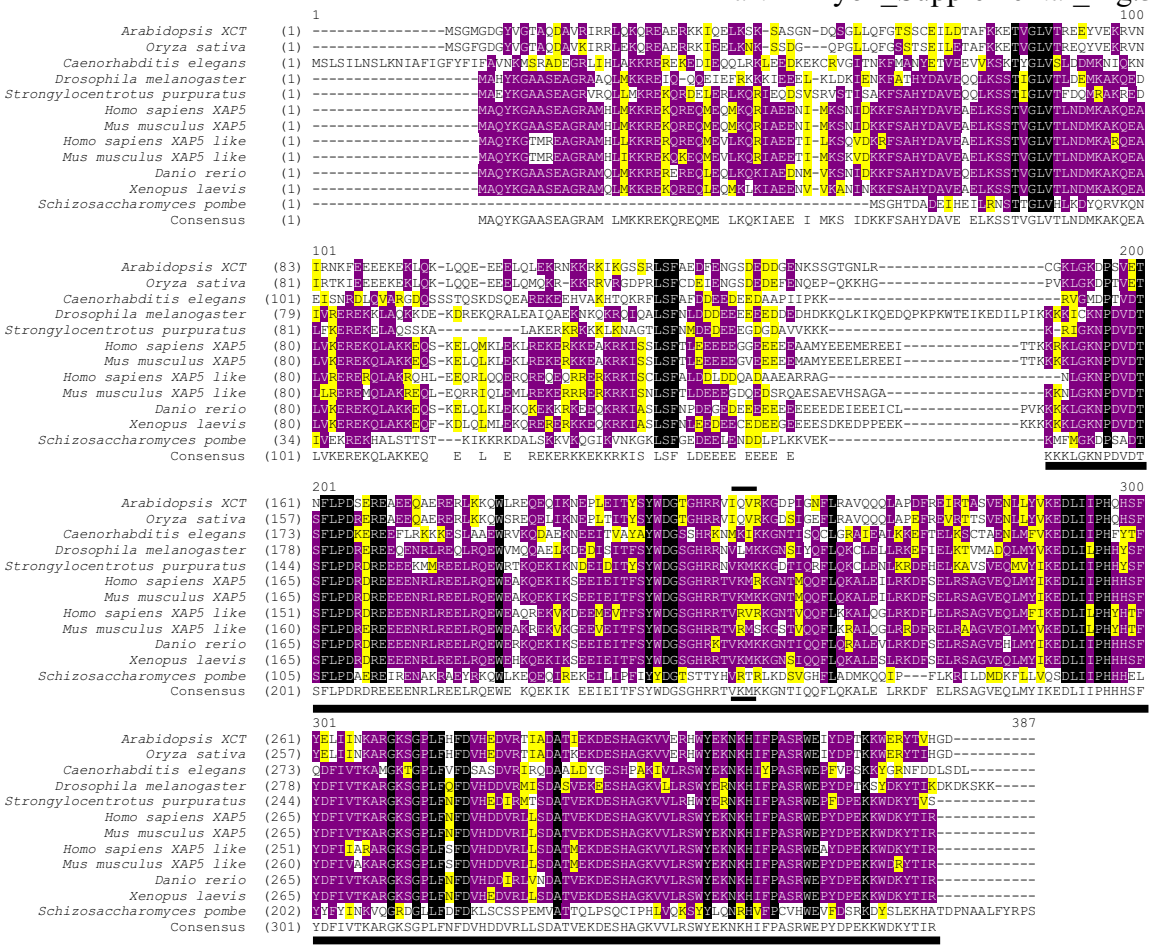
Martin-Tryon_Supplemental_Fig.1



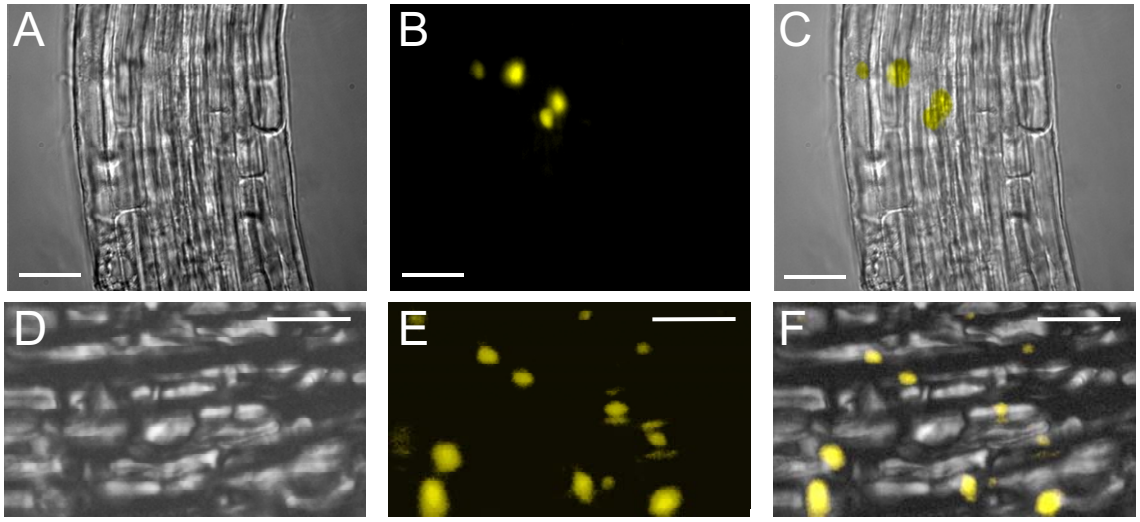
Supplemental Figure 1. qPCR analysis of expression profiles of clock components. (A) *TOC1*, (B) *ELF4*, (C) *PRR3*, (D) *PRR5*, (E) *PRR7*, (F) *PRR9*, (G) *LHY*, (H) *CCA1*, (I) *GI*, and (J) *LUX* expression were determined and normalized to that of *PP2a*. Open and shaded bars represent subjective day and night, respectively. Plants were entrained in light/dark cycles and then released into constant light at time 0.



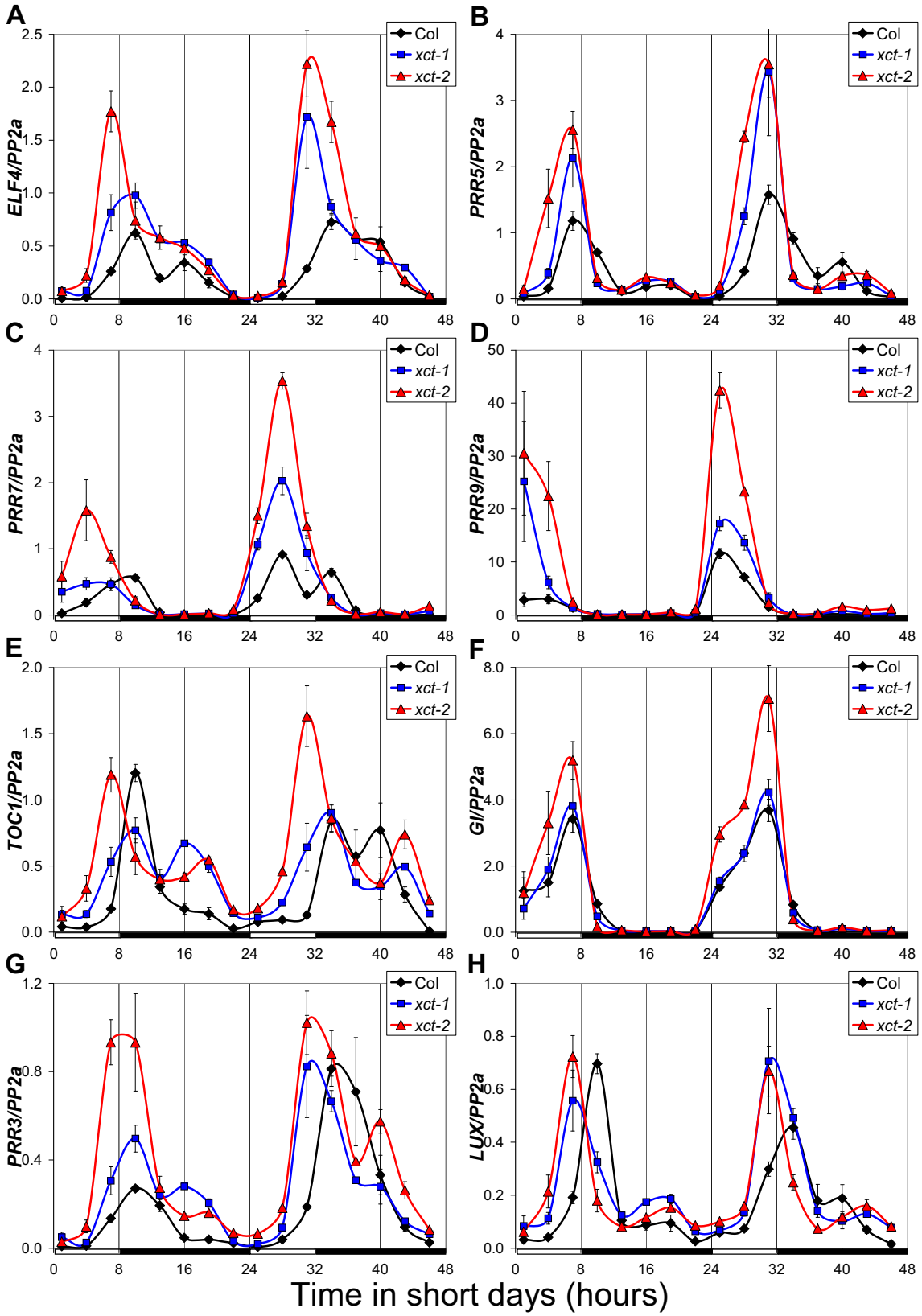
Supplemental Figure 2. Analysis of *XCT* expression in *xct* mutants. *XCT* message was amplified from cDNA samples by RT-PCR. SALK_127500 contains an insertion 3' to the 3'UTR of *XCT* and does not demonstrate a phenotype. A 2-fold dilution series of Col cDNA is presented to compare expression levels; Col 2x contains twice as much cDNA as the test samples.



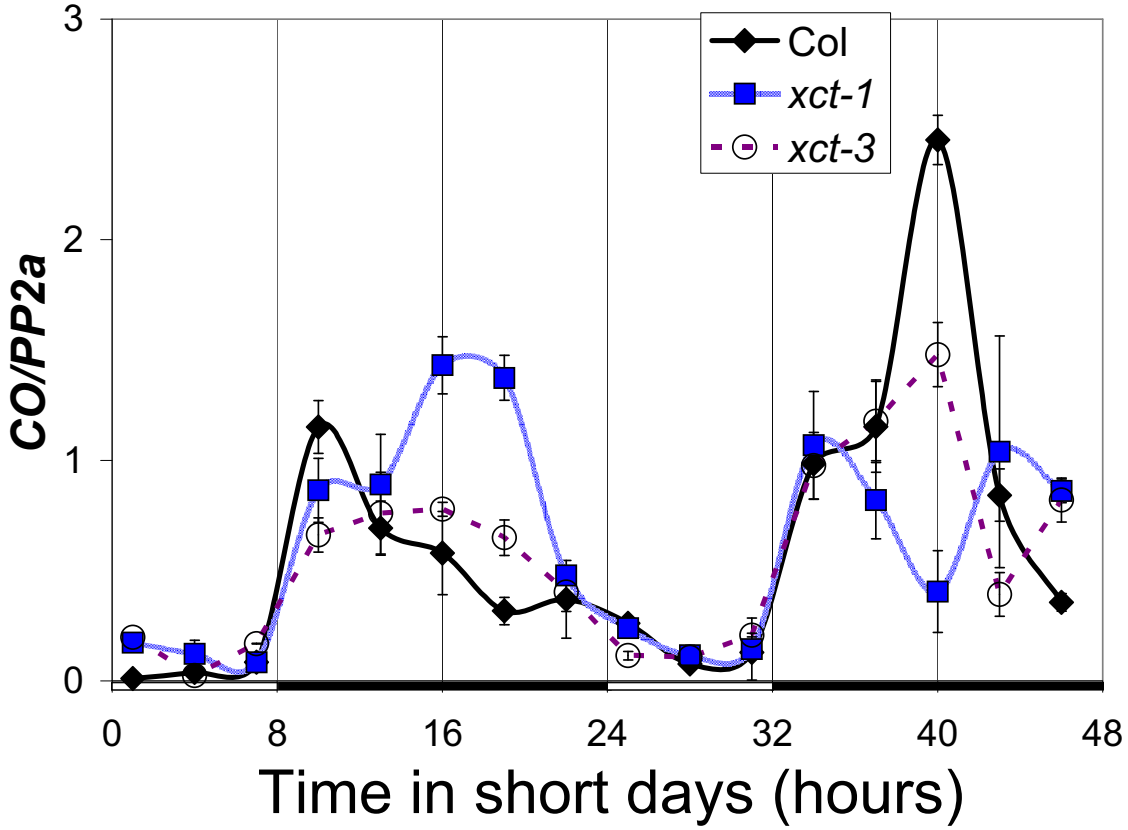
Supplemental Figure 3. Alignment of XAP5 proteins from plants and animals. The three amino acid deletion in *xct-1* is marked by a bar, and the XAP5 domain is underlined with a thick bar. Non-similar and weakly similar amino acids are indicated with black text on a white background, similar amino acids with black text on a yellow background, highly conserved amino acids with white text on a purple background, and identical amino acids are denoted with white text on a black background.



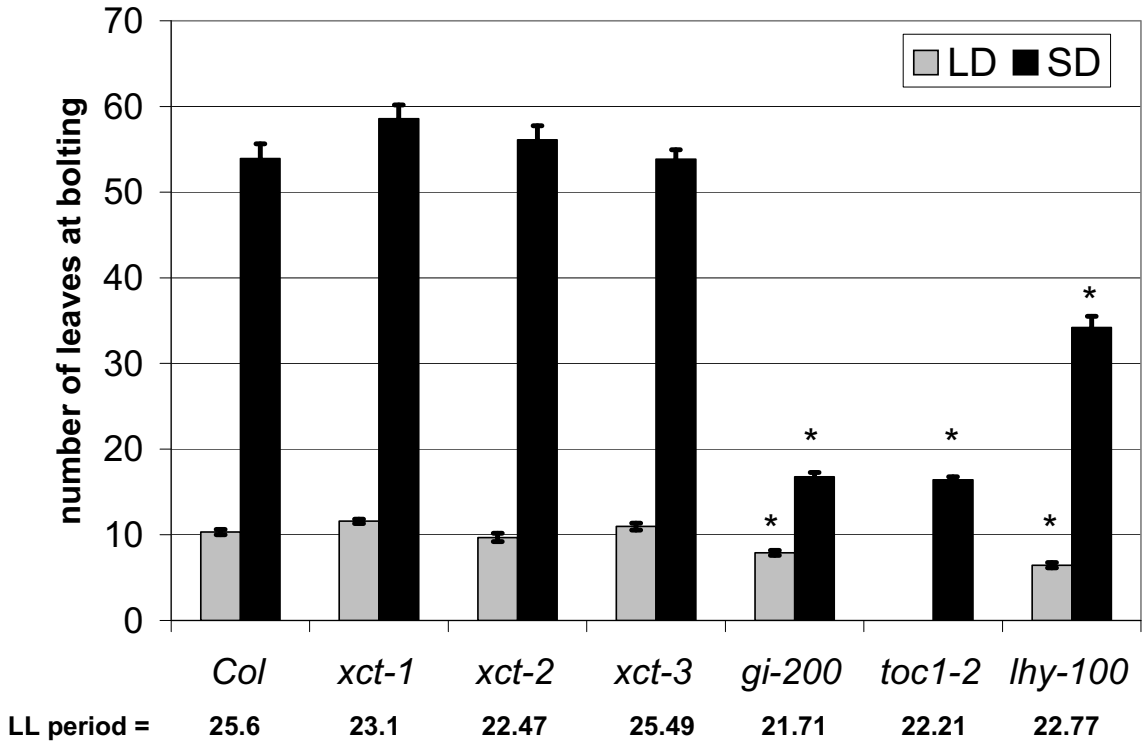
Supplemental Figure 4. XCT fused to YFP is present in the (A-C) hypocotyl nuclei of six day-old, light-grown seedlings and (D-F) petal nuclei of adult plants grown in long days. Bright field (A, D), YFP (B, E), and merged (C, F) images are shown; scale bars indicate 25 μm. Images were obtained from plants expressing (A-C) an N-terminal YFP-XCT fusion or (D-E) a C-terminal XCT-YFP fusion under the control of the *XCT* promoter.


A
ELF4/PP2a
B
PRR5/PP2a
C
PRR7/PP2a
D
PRR9/PP2a
E
TOC1/PP2a
F
GI/PP2a
G
PRR3/PP2a
H
LUX/PP2a
Col
xct-1
xct-2
Time in short days (hours)

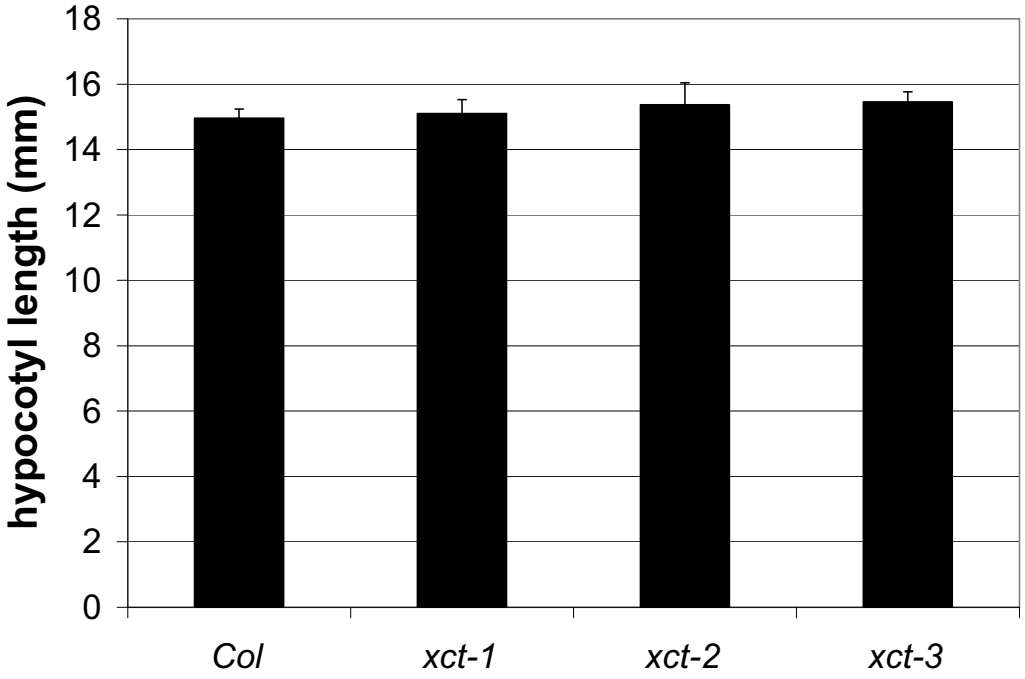
Supplemental Figure 5. Short day (8:16 LD) expression profiles of clock genes in *xct* mutants. Open bars represent day and closed bars night. Expression levels of (A) *ELF4*, (B) *PRR5*, (C) *PRR7*, (D) *PRR9*, (E) *TOC1*, (F) *GI*, (G) *PRR3*, and (H) *LUX* were monitored by qPCR and normalized to *PP2a*.



Supplemental Figure 6. The phase of *CONSTANS* (*CO*) expression in short days (8:16 LD) is unaltered in *xct* mutants. *CO* expression was monitored by qPCR and normalized to *PP2a*; open bars represent day and closed bars night.



Supplemental Figure 7. Leaf number at bolting for various clock mutants grown in long days (16:8, LD) or short days (8:16, SD). Error bars represent standard error of the population, n=9-25 in LD and n=18 in SD. Constant red light (LL) *CCR2$_{pro}$:LUC* period estimates of sibling populations are presented below genotypes. * Leaf number at bolting is significantly different from Col, $p<0.01$ by Student's t-test.



Supplemental Figure 8. Etiolated *xct* seedlings do not have a hypocotyl phenotype. Hypocotyl length of etiolated seedlings was measured six days after germination.