Supplemental Materials and Methods

Strains and culture conditions.

FGSC#4200 was used as the wild-type strain in this study, but in the race tube assays, 87-3 (*ras-1*^{bd}*, a*) was used as the wild-type strain. Calculations of period length were performed as described previously (Liu et al, 1997). Liquid cultures were grown in minimal media (1x Vogel's, 2% glucose). When QA was used to activate the *qa-2* promoter, liquid cultures were grown in 0.01 M QA (pH 5.8), 1x Vogel's, 0.5% glucose, and 0.17% arginine. Race tube media contained 1×Vogel's, 0.1% glucose (replaced by 1 mM QA if necessary), 0.17% arginine, 50 ng/ml biotin, and 1.5% agar. For luciferase assays, the AFV (autoclaved FGS-Vogel's) medium was autoclaved with 0.05% fructose, 0.05% glucose, 2% sorbose, 1×Vogel's medium, 50 μg/L biotin, and 1.8% agar; firefly luciferin (BioSynt L-8200 D-luciferin firefly [synthetic] potassium salt) was added after autoclaving (final concentration of 50 μM). For rhythmic experiments, the *Neurospora* cultures were transferred from constant light (LL) to DD at time 0 and were harvested after the indicated time in DD.

The *Neurospora* knockout library was obtained from Fungal Genetics Stock Center.

Protein and RNA analyses.

Protein extraction, western blot analyses, RNA extraction, and qRT-PCR were performed as previously described (Cha et al, 2008; Cha et al, 2011). The qRT-PCR results were analyzed by Student's *t*-Test and the significance was indicated with error bars of standard errors. *, $P<0.05$; **, $P<0.01$. The data for mRNA levels were normalized with *β-tubulin* and one of the wild-type samples was set as 1. Primer sequences are available upon request. To raise the anti-CATP antibody, the EcoRI fragment of the *catp* ORF was cloned into pGEX-4T-1 and GST-

tagged recombinant was purified from *E. coli*. Antisera were obtained by immunizing rabbits with purified protein (Cocalico Biologicals, Inc.). For quantifications of western results, the bands were scanned and analyzed by ImageJ (http://rsb.info.nih.gov/ij/). Representable blots out of more than 2 experiments were shown. Antibodies against histone H3 (ab1791) and the RNA pol II C-terminal domain (phospho S5; ab5131) were purchased from Abcam, and anti-acetyl-histone H3 (Lys14; #06-911) antibody was from Millipore.

Sequences used for the alignment of CATP homologues

Neurospora CATP (GI: 85083472), *Saccharomyces cerevisiae* YTA7 (GI: 1556439), *Mus musculus* ANCCA/ATAD2 (GI: 91199557), *Homo sapiens* homolog (GI: 24497618), *Drosophila melanogaster* TER94-RC (GI: 262272122) and *Arabidopsis thaliana* AT1G05910 (GI: 18390588).

SI Figure legends:

Figure S1. Race tube analysis showing the conidiation rhythms of the *mut10* strain in either wild-type or *ras-1*^{bd} background. Black lines indicate the growth fronts every 24 h.

Figure S2. (A) Densitometric analyses of the western blot analysis in Figure 2B. (B) Densitometric analyses of the western blot analysis in Figure 3D.

Figure S3. Light induction of gene expression in the *catp*^{KO} strain is near normal. qRT-PCR results show that light-induced expressions of *frq*, *al-1* and *vvd* in the wild-type and the *catp*^{KO} strains. The wild-type at time 0 (DD24) was set as 1 and error bars indicate SEM (n=3). **P<0.01 (paired student's *t*-test).

Figure S4. (A) ChIP assays using the antibody against endogenous CATP showed that it binds to the *frq* promoter and ORF regions. The location of each amplicon (distance in bp from AUG) was indicated. (B) Histone H3 ChIP showed that the nucleosome occupancy at the *adv-1* and *frh* loci was not affected in the *catp*^{KO} stain. (C) qRT-PCR analyses showing that *adv-1* (upper panel) and and *frh* (lower panel) mRNA levels were not affected in the *catp*^{KO} strain. Mean with standard errors (n=3). *P<0.05, **P<0.01 (paired student's *t*-test).

Figure S5. Western blot analysis using the CATP antibody showing the expression profile of CATP in the constant darkness at the indicated time points. The asterisk indicates a nonspecific protein band detected by our antibody.

Figure S1

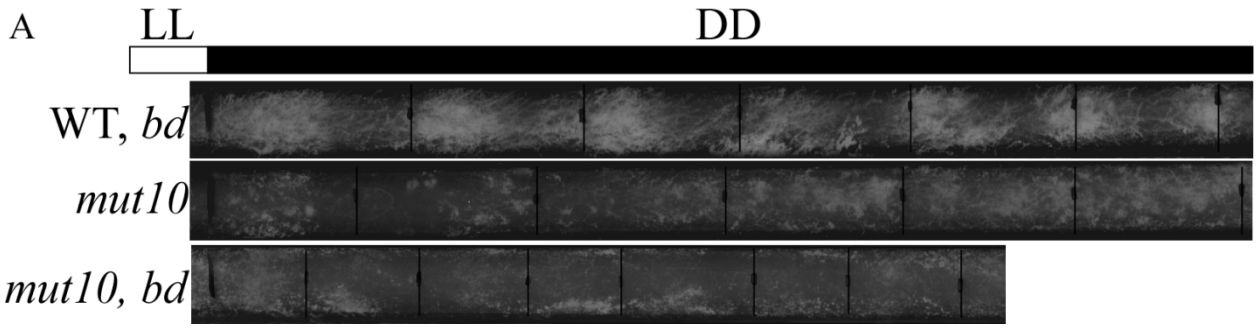
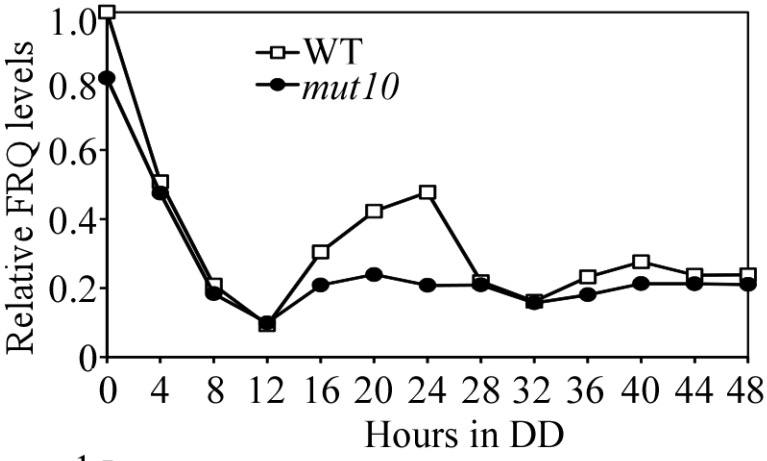


Figure S2

A


WT
mut10
Relative FRQ levels
1.0
0.8
0.6
0.4
0.2
0
0 4 8 12 16 20 24 28 32 36 40 44 48
Hours in DD

B

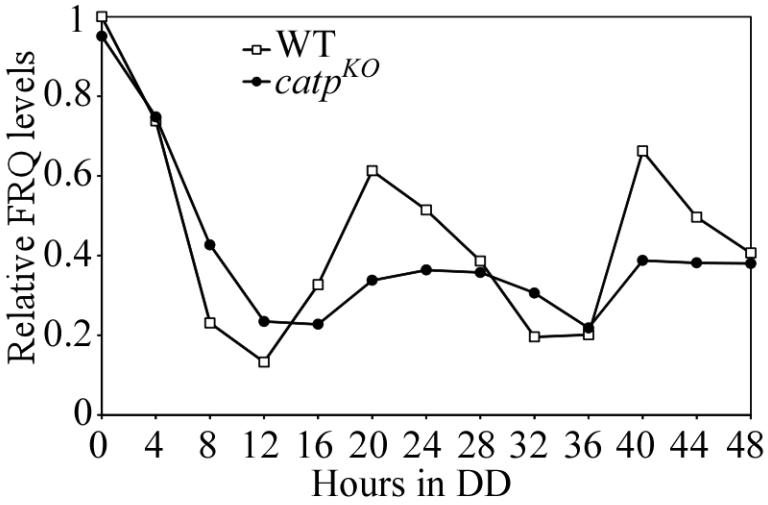

WT
catp^KO
Relative FRQ levels
1
0.8
0.6
0.4
0.2
0
0 4 8 12 16 20 24 28 32 36 40 44 48
Hours in DD

Figure S3

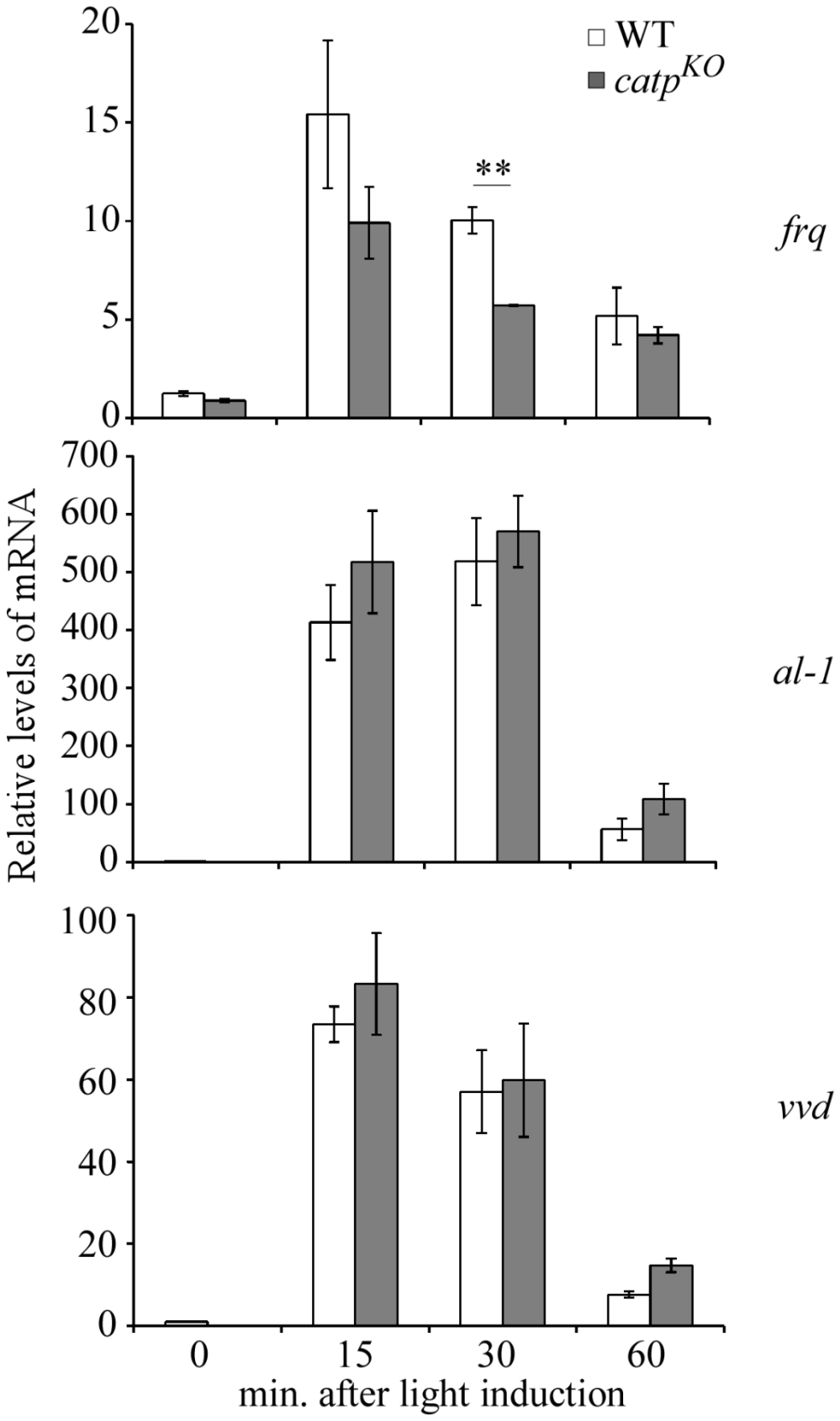

WT
catp^KO
**
frq
al-1
vvd
Relative levels of mRNA
min. after light induction
0
15
30
60

Figure S4

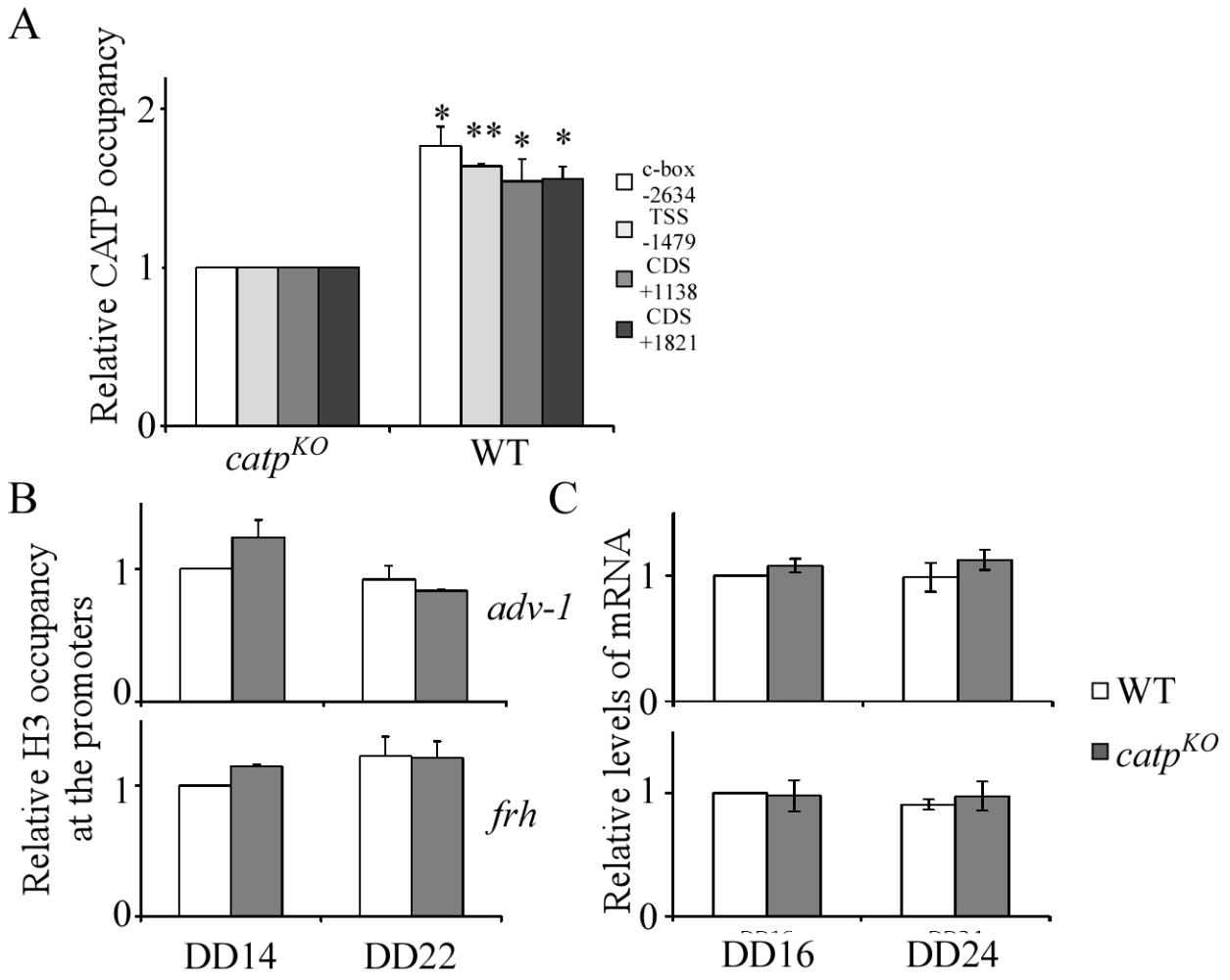

A
Relative CATP occupancy
2
1
0
*
**
*
*
c-box -2634
TSS -1479
CDS +1138
CDS +1821
catpKO
WT
B
Relative H3 occupancy at the promoters
1
0
adv-1
frh
DD14
DD22
C
Relative levels of mRNA
WT
catpKO
DD16
DD24

Figure S5