

Supplementary Figure legends

Figure S1 Temporal expression profiles of *Atf/Creb* mRNA in the livers of wild-type mice. All values are normalized to the expression of internal control gene (*Actin*) and are shown as means \pm s.e.m. of 4 mice. Significant time-dependent variation in mRNA levels of *Atf5* ($P < 0.05$, ANOVA).

Figure S2 Temporal expression profiles of *Atf4* mRNA in the suprachiasmatic nuclei, cerebral cortex, kidney, and small intestine of wild-type and *Clock/Clock* mice. Values are normalized to the expression of internal control gene (*Actin*) and are shown as means \pm s.e.m. of four to six mice. Significant time-dependent variation in mRNA levels of *Atf4* in all tissues from wild-type mice (all $P < 0.05$, ANOVA).

Figure S3 Temporal changes in PER2 and CRY1 binding to *Atf4* promoter in the livers of wild-type mice. Primer sequences for amplification of the surrounding E-box in the mouse *Atf4* promoter (from bp -194 to +12) are as follows, 5'-TCTAACGCCACAGTTACC-3' and 5'-ACTTA-AACCGGCAGACAG-3'. The positive control comprising the putative CLOCK/BMAL1 target region in the *Cry1* promoter was amplified using the primer pair, 5'-GCACGCGGGGGTC-TGAGCCA-3' and 5'-CCGGTCCCGAGGCTGCCCG-3'. Values were normalized to input control. Values are means \pm s.e.m. for 4 mice. * $P < 0.05$ compared between groups.

Figure S4 Temporal expression profiles of *Dbp* and *Tef* mRNA in MEFs prepared from wild-type and *Atf4* $-/-$ mice. Mean basal value (0 h) of wild-type cells was set at 1.0. Values are shown as means \pm s.e.m. of four observations. Significant time-dependent variation in mRNA levels of *Dbp* and *Tef* in wild-type MEFs (both $P < 0.05$; ANOVA).

Figure S5 Comparison of cAMP contents in cultured MEFs (left panel), or several organs (liver, kidney, small intestine and cerebral cortex) of mice (right panel). All values are shown as means \pm s.e.m. of four observations. Intracellular cAMP contents were assessed using an ELISA kit (Cell Biolabs Inc., San Diego, CA, USA) according to manufacture's instruction.

Figure S6 Influence of fibroblast growth factor-2 (FGF-2) on the expression of *Atf4* mRNA in MEFs prepared from wild-type and *Clock/Clock* mice. Cells were incubated with 25 ng/mL FGF-2 for 4 h. Levels of *Atf4* mRNA were assessed at indicated times by RT-PCR. All values are shown as means \pm s.e.m. of three observations. * $P < 0.05$ compared with basal levels (0 h) of each genotype.

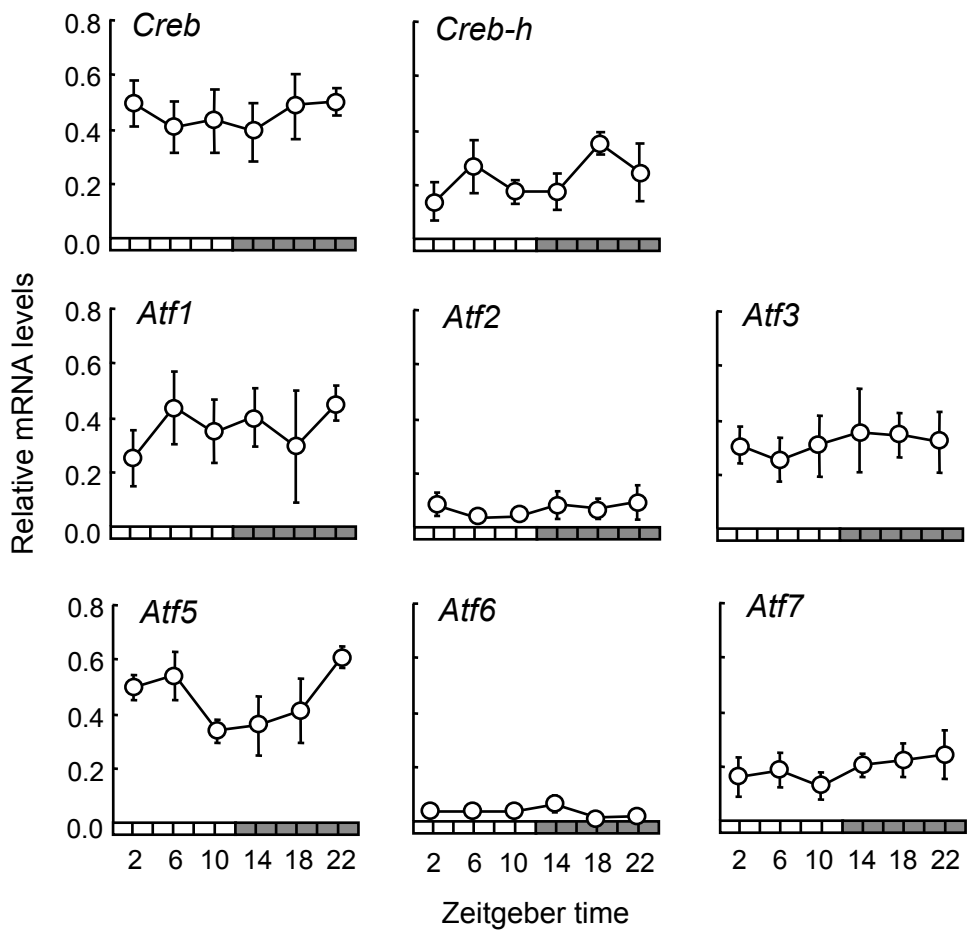


Fig.S1

○ : Wild-type mice ● : *Clock/Clock* mice

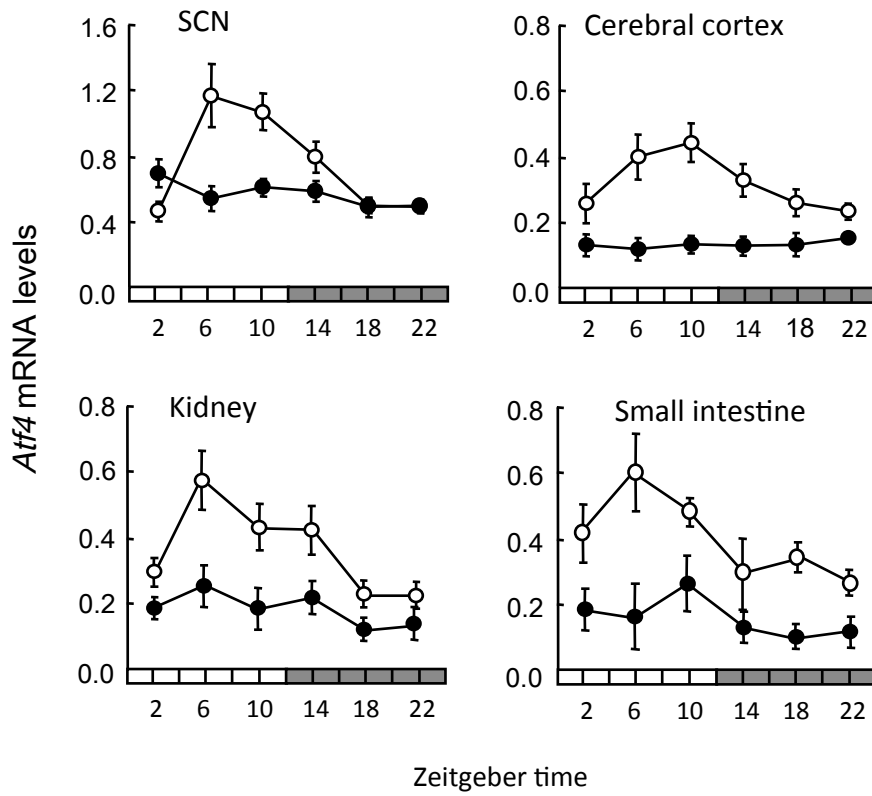


Fig.S2

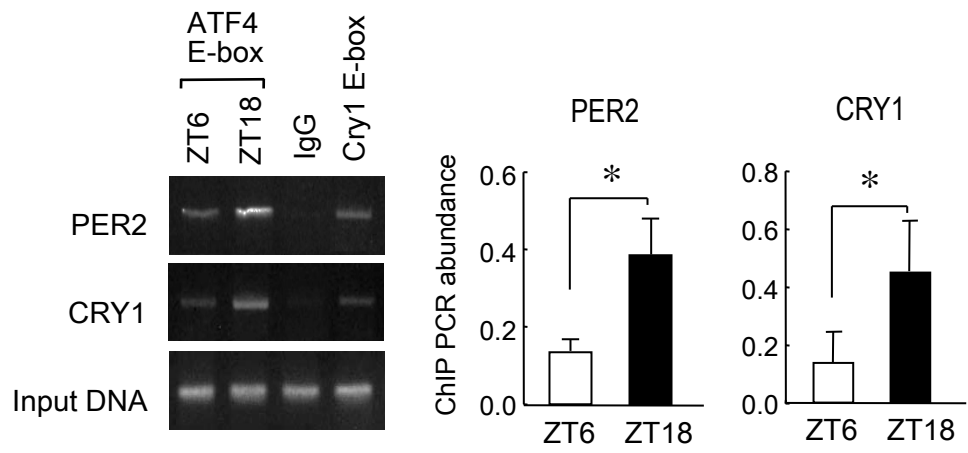


Fig.S3

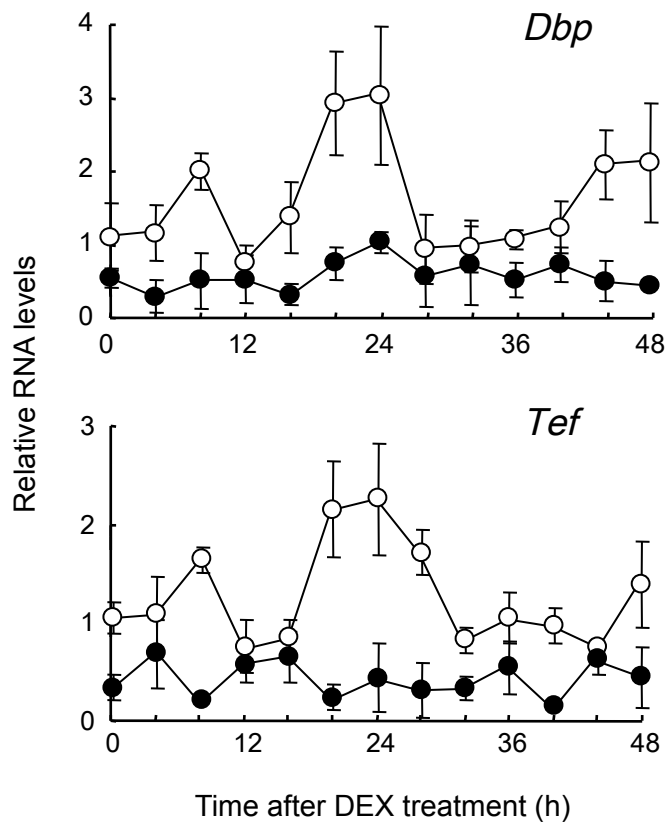


Fig.S4

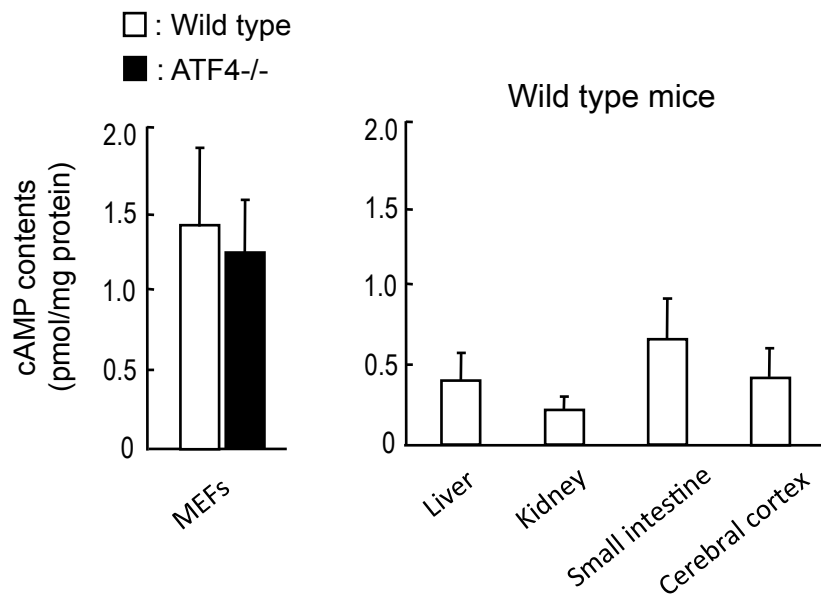


Fig.S5

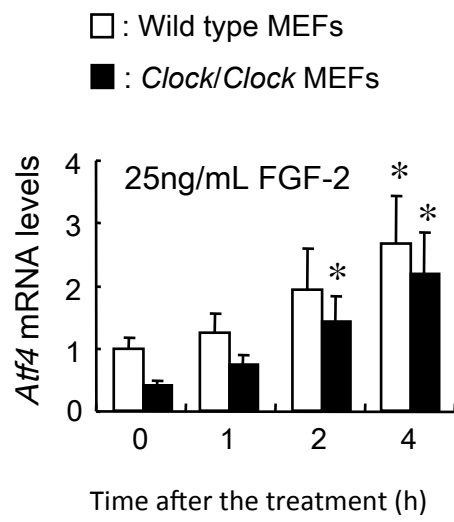


Fig.S6