Supporting Information

Li et al. 10.1073/pnas.1402562111

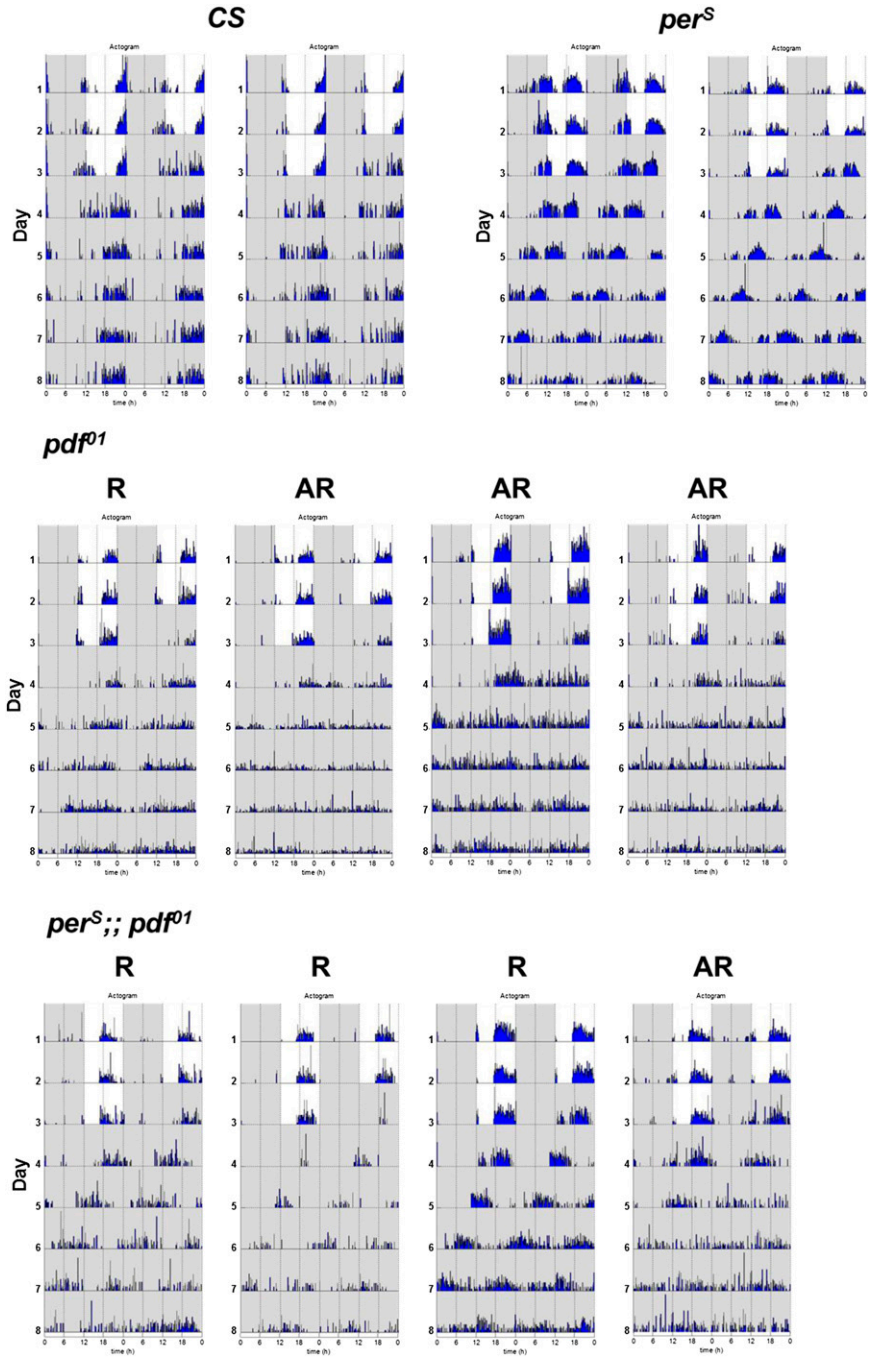

Fig. S1. Representative actograms for individual flies. The activities of several flies of each genotype shown in Fig. 1 were measured individually. The data were double plotted. The locomotive activity of most WT (*cs*) and per^S flies was rhythmic. About 40% pdf^{01} and 80% $perS;;pdf^{01}$ flies were rhythmic. The individual actograms of both rhythmic (R) and arrhythmic (AR) are shown here.

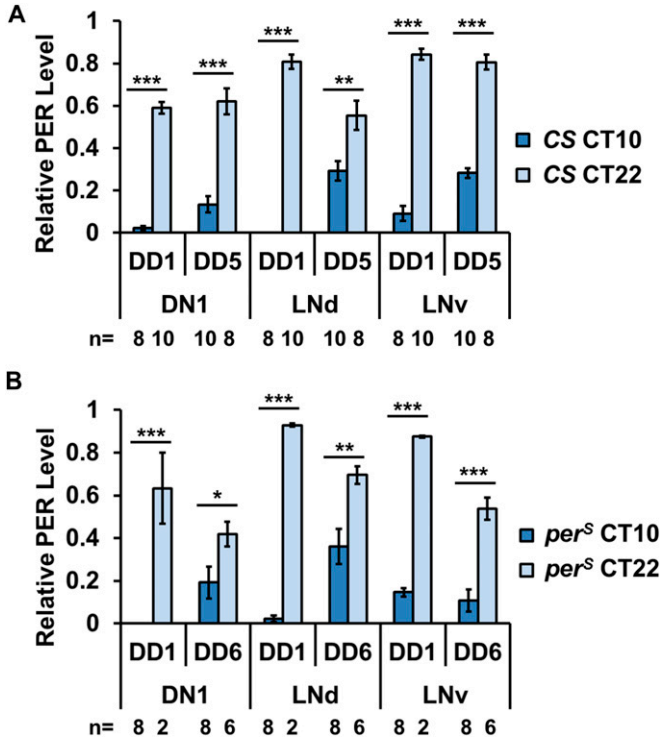

Fig. S2. PER oscillations in the different clock neurons of WT and per^S flies in DD. The PER signals in DN1s, LNds, and LNvs from the brains of WT (*cs*) and per^S flies were tested with the same method as described in Fig. 2. CT10 and CT22 are the 10th and 22nd "hour units" in constant-dark condition, respectively. DD1, 5, and 6 indicate the first, fifth, and sixth period cycle in constant-dark condition, respectively. The histograms represent the mean relative PER intensity in the indicated neurons in *cs* flies (*A*) and per^S flies (*B*). "*n*" indicates the number of brain hemispheres. Error bars represent ±SEM. The triple asterisk (***) represents $P < 0.001$, the double asterisk (**) represents $P < 0.01$, and the single asterisk (*) represents $P < 0.05$, as determined by Student *t* test.

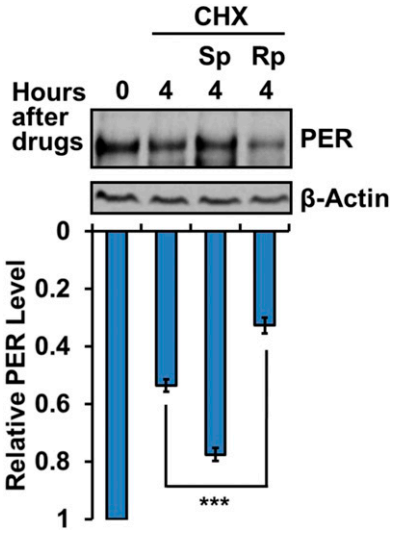

Fig. S3. Inhibition of cAMP-dependent pathways destabilizes PER in S2 cells. To study the effect of inhibition of cAMP-dependent pathways, PER degradation rate was assayed in S2 cells as described in Fig. 3. Cells were treated with Rp-cAMPS (Rp). The PER level at 4 h post drug application was compared with PER in the cells treated with Sp-cAMPS (Sp). The triple asterisk (***) in the histogram represents $P < 0.001$ as determined by Student *t* test.