

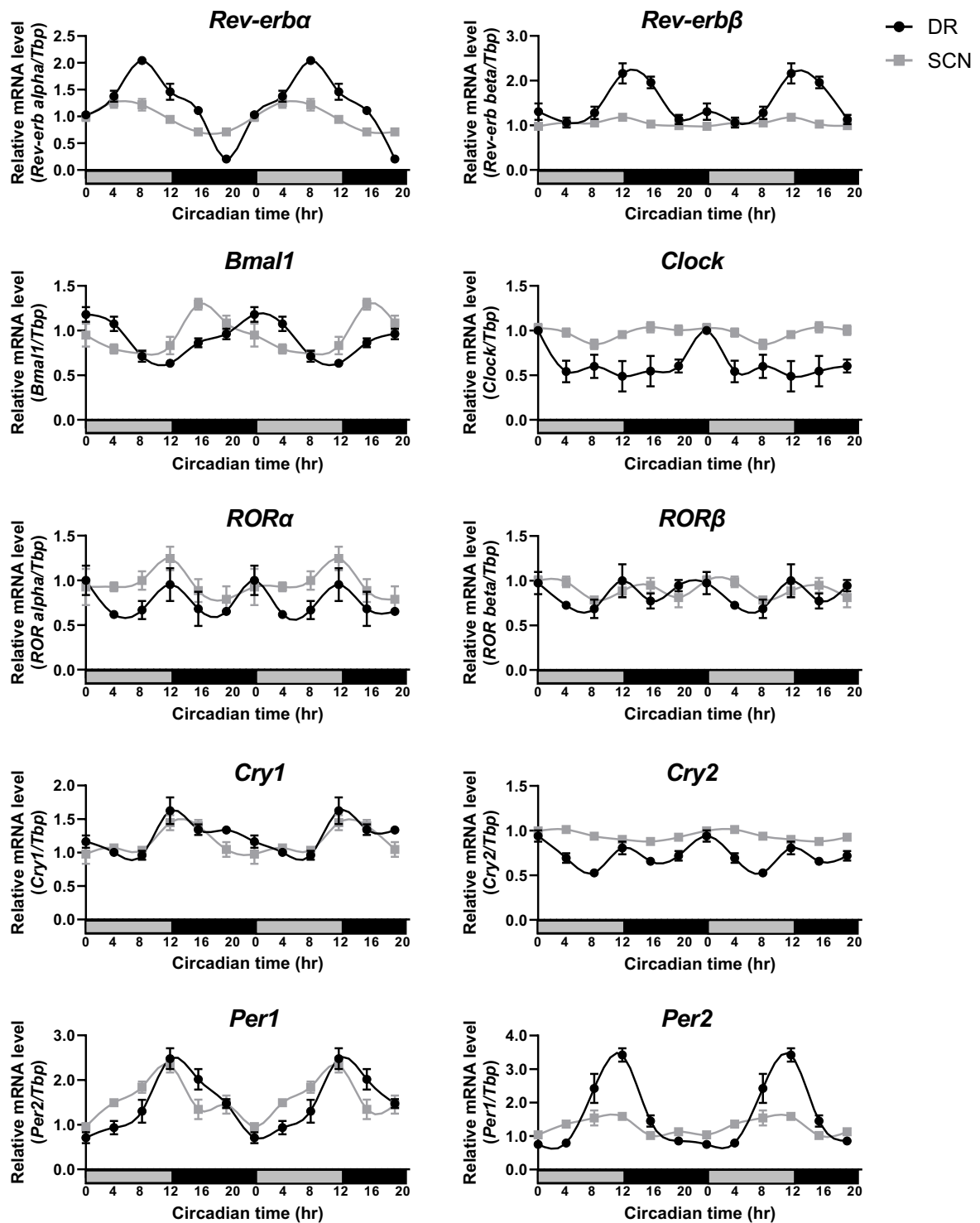
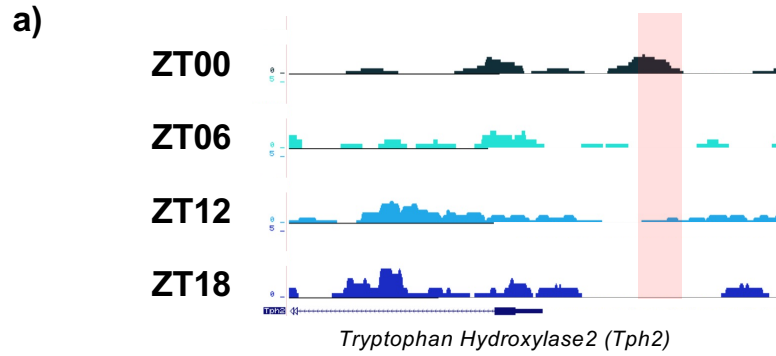


Fig. S1. The Dorsal raphe nucleus maintains its own circadian timing system. DR and suprachiasmatic nucleus (SCN) mRNA expression of circadian clock genes (*Rev-erba*, *Rev-erb β* , *Bmal1*, *Clock*, *ROR α* , *ROR β* , *Cry1*, *Cry2*, *Per1*, and *Per2*) were examined in WT animals at 4-h intervals using real-time qPCR. Each mRNA was normalized using the level of a housekeeping gene, TATA-box-binding protein (*Tbp*), and presented with double-plotted to enhance the visualization of the daily rhythmicity.



b)

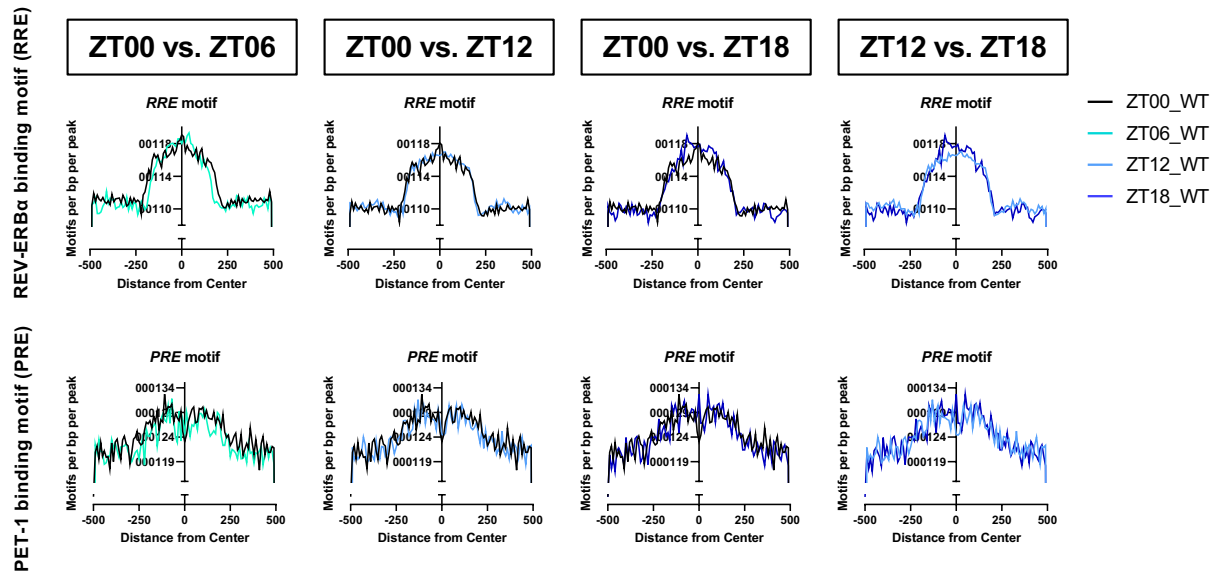


Fig. S2. ATAC-seq analysis of DR at ZT time points. a) University of California Santa Cruz (UCSC) genome browser views of *Tph2*. Representative chromatin landscapes of *Tph2* genome determined using assays for transposase-accessible chromatin (ATAC) with high-throughput sequencing with DR of WT mice at every 6-h interval ($n=5$ pooled for each ATAC-seq track). *Tph2* promoter regions of interest are highlighted using red bar. b) The probabilities of REV-ERB α (RRE) binding and PET-1 (PRE) binding motifs were visualized using HOMER from called peaks and were compared with the motif enrichments at indicated time points.

Supplementary Table 1. Primers for site-directed mutagenesis of Tph2 promoter-driven luciferase reporter				
mTph2 330-bp WT	forward	TAC CGA GCT CTT ACG CGT CTC TTG CTT AAG AAT TTT CC		
	reverse	GCA GAC TTC TTA TGA AAG CCC CCG GGC TCG AGA TCT		
mTph2 330-bp RRE mut 1	forward	TCA AAT TGC TGG GTC TGA TCG AGC AAT AAA ATT GTA TCA GAA		
	reverse	GAT ACA ATT TTA TTG CTC GAT CAG ACC CAG CAA TTT GA		
mTph2 330-bp RRE mut 2	forward	TTC TAG AAG GTT AGC ATC TCA AGC CTC GAA TTT CAA AA		
	reverse	TTG AAA TTC GAG GCT TGA GAT GCT AAC CTT CTA GAA TGT TC		
mTph2 330-bp PRE mut 3	forward	TTC AAA GGA TTG TCA AGC TGT GGC TTT CTA AAG TTG GA		
	reverse	CAA CTT TAG AAA GCC ACA GCT TGA CAA TCC TTT GAA GA		
mTph2 330-bp PRE mut 4	forward	TGG GCC TAT GGG CAT TTC ATA TAT TTC TTA CTT AAT GAA GAA CA		
	reverse	ATT AAG TAA GAA ATA TAT GAA ATG CCC ATA GGC CCA		
Supplementary Table 2. Primers for real-time qPCR				
			Amplicon size (bp)	
<i>mBmal1</i>	Sense	GCA GTG CCA CTG ACT ACC AAG A	201	
	Antisense	TCC TGG ACA TTG CAT TGC AT		
<i>Rev-erba (Nr1d1)</i>	Sense	AGG GCA CAA GCA ACA TTA CC	96	
	Antisense	CAC AGG CGT GCA CTC CAT AG		
<i>RORa</i>	Sense	TGT GGA CGA CAT ACG GAA AA	71	
	Antisense	GGA AAA TGG AGT CGC ACA AT		
<i>Clock</i>	Sense	TTG CTC CAC GGG AAT CCT T	74	
	Antisense	GGA GGG AAA GTG CTC TGT TGT AG		
<i>Per1</i>	Sense	TGG CTC AAG TGG CAA TGA GTC	247	
	Antisense	GGC TCG AGC TGA CTG TTC ACT		
<i>Per2</i>	Sense	ATC CCA CGA ACA CCT CAT GA	225	
	Antisense	CCC TGA GCT GTC CCT TTC TA		
<i>Cry1</i>	Sense	CCT TGA AAA GCC TGG GAA AT	177	
	Antisense	TCC GCT GCG TCT ATA TCC TC		
<i>Cry2</i>	Sense	TGT CCC TTC CTG TGT GGA AGA	67	
	Antisense	GCT CCC AGC TTG GCT TGA		
<i>mTph2</i>	Sense	GAG CTT GAT GCC GAC CAT	76	
	Antisense	TGG CCA CAT CCA CAA AAT AC		
<i>Pet-1 (Fev)</i>	Sense	GGA GAT GGT CTT TTT AAG GAA GGG	103	
	Antisense	CCA GGA GAA ACT GCC ACA ACT GG		
<i>SERT</i>	Sense	AGT TTC CAG CCC CGA CAT CAG	102	
	Antisense	TAG CCA AGC ACC GTG AAG AT		
<i>Ddc (AADC)</i>	Sense	GCA TTG AGG GTC GTC CAG TG	195	
	Antisense	CTG GGT ATG AGC TAG CCG TG		
<i>Tbp</i>	Sense	GGG AGA ATC ATG GAC CAG AA	113	
	Antisense	CCG TAA GGC ATC ATT GGA CT		