Supporting Information

So et al. 10.1073/pnas.0909733106

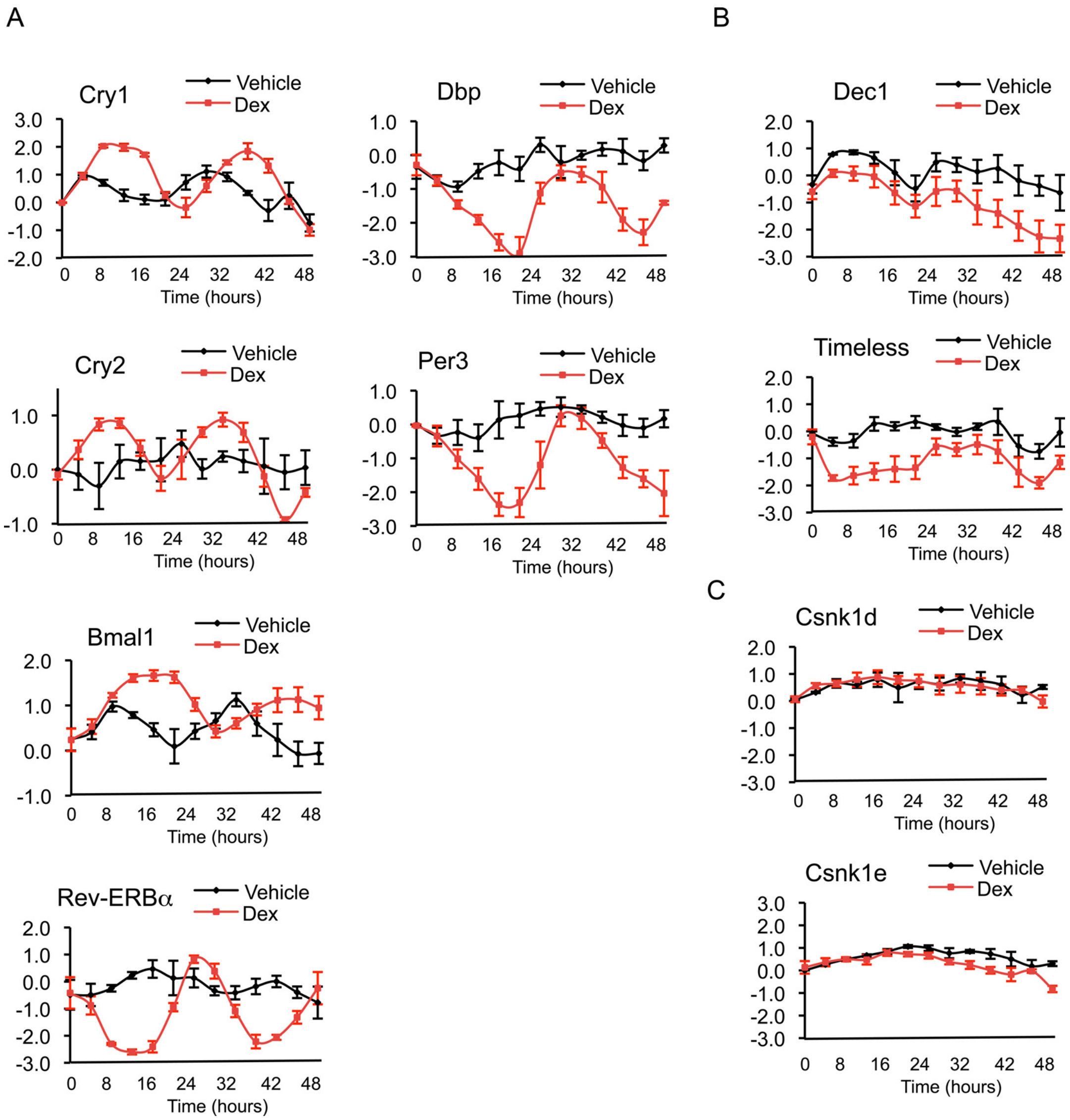

Fig. S1. Dex response of clock genes (red) compared with vehicle-treated cells (black). (*A*) Dex induces synchronized cycling of multiple clock genes. Some clock genes are regulated by dex, but the expression level does not cycle (*B*), whereas a couple of clock genes were not responsive to dex (*C*). Transcript levels from 3 independent experiments were measured by quantitative PCR (mean ± SEM).

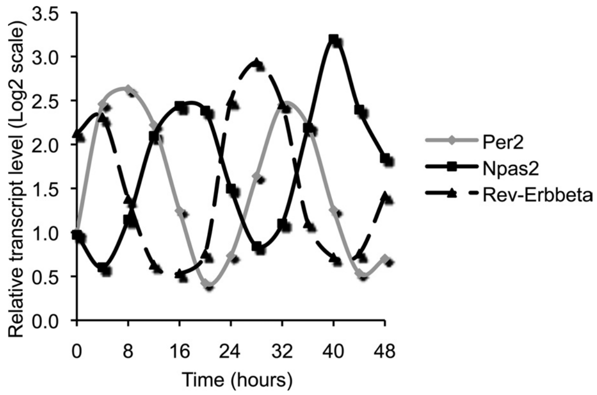

Fig. S2. Dex-regulated clock genes oscillate in distinct phases.

A

Gene	ReSeq	GBS	Sequence of GBS	Distance to TSS
Per1	NM_011065	Per1 GBS.1	TGTACAGAGTGTACA	-26728
	BC039768	Per1 GBS.2	GGGACAGGCTGATCT	-5776
	AK081813	Per1 GBS.3	**GGAACATCGTGTTCT**	**-1872**
		Per1 GBS.4	**AGAACAGGATGTTCC**	**468**
		Per1 GBS.5	AGCACATAGTGTTTA	17159
		Per1 GBS.6	GGGACAGGCTGTGTC	27189
		Per1 GBS.7	GGAACAAAGAGTTCT	29102
Per2	NM_011066	Per2 GBS.1	GGTACAGAGTGAGCA	-22750
		Per2 GBS.2	GGCACAGTCTGTCTT	-22239
		Per2 GBS.3	AGAACAGCAAGTGCT	-19942
		Per2 GBS.4	AGAACAGACTGGCCT	-7977
		Per2 GBS.5	AGTACAGAGTGAGTC	18344
		Per2 GBS.6	**TGTACAGAATGTTCC**	**22813**
		Per2 GBS.7	**TGGACAGAGTGTACA**	**22822**
		Per2 GBS.8	AGAACAAAGTGTTTA	31606
E4bp4	NM_017373	E4bp4 GBS.1	AGAACAGAGTGACTT	-30763
		E4bp4 GBS.2	GGAACAGTGTGTCAT	-29644
		E4bp4 GBS.3	GGGACATGCTGATCT	-25290
		E4bp4 GBS.4	TGCACAGAGTGTTCT	-22371
		E4bp4 GBS.5	**AGTACAGAATGTTCT**	**-5045**
		E4bp4 GBS.6	AGAACACGGTGTCTT	4946
		E4bp4 GBS.7	AGTACAGGATGATCA	18347

B

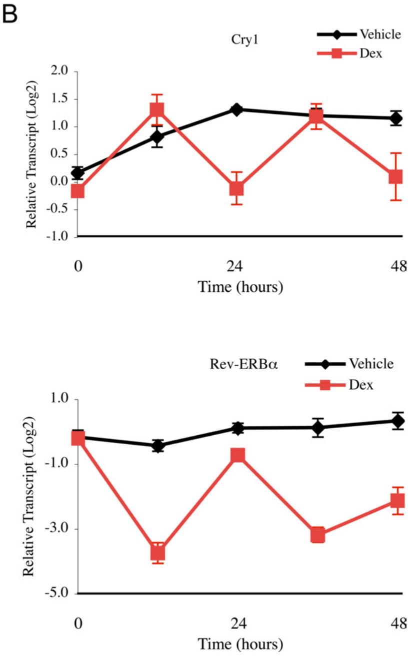

Fig. S3. Identification of putative GBSs in clock genes (*A*) and conservation of dex-induced oscillation of clock genes in human MSCs (*B*). Transcript levels from 3 independent experiments were measured by quantitative PCR (mean ± SEM).

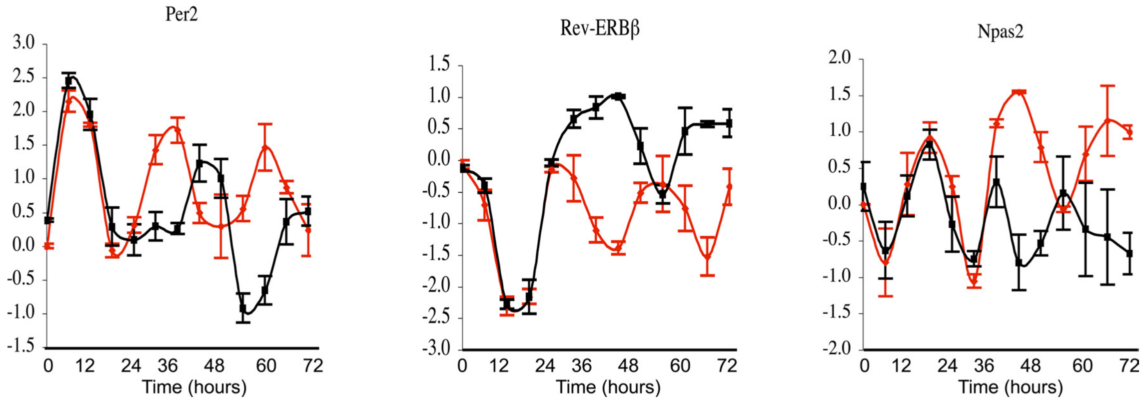

Fig. S4. Addition of RU486 after dex treatment disrupts glucocorticoid-stimulated circadian rhythm. One micromolar RU486 (black) or vehicle (DMSO) (red) was added to culture medium 24 h of treatment with 100 nM dex. Transcript levels from 3 independent experiments were measured by quantitative PCR (mean ± SEM).

Table S1. Sequences of primers used in real-time PCR experiments

	Forward primer	Reverse primer
Mouse genes, cDNA		
Per2	tctgacatggcttctgttcg	tgtacagtgtgggggtgcta
Per1	cccagctttacctgcagaag	agctggggcagtttcctatt
Npas2	aggaaaggacgtctgcttca	tccaagctatgcctcgaagt
Clock	gaggtcgtccttcagcagtc	tgtgacatgccttgtggaat
Bmal1	aagtgcaacaggccttcagt	ggtggccagcttttcaaata
Cry1	gggacagccagctgatgtat	catctcgttccttcccaaaa
Cry2	actgagcttcaggggactca	tctctaggccaaaccttcca
Csnk1d	caaagggaatcaaccctgaa	caccacacctttctggaggt
Csnk1e	gccgtcgagatgacctagag	cgctaatccgctcgtacttc
Timeless	gccagaggacgaaagtgaag	gctctcaccgaggttttcag
Dbp	accgtggaggtgctaatgac	ctcctctgagaagcggtgtc
Dec1	gaccggattaacgagtgcat	tcaatgctttcacgtgcttc
GR	acagactttcggcttctgga	cttctctgtcggggtagcac
Rev-ERBa	agccaccccaagaccttact	cggtcattcaaactggacct
Rev-ERBb	catgtttgtgccaagtccac	ggccatctttcctaccatga
Dec2/Bhlhb3	gcttgaagcgagacgatacc	aatgccccagtgttgtcaat
E4bp4	atgagggtgtagtgggcaag	gttcacttccggaaccttca
Rpl19	agcctgtgactgtccattcc	ggcagtacccttcctcttcc
Sgk	cgtccgaacgggacaacat	gtccaccgtccggtcatac
Mt1	ctccgtagctccagcttcac	aggagcagcagctcttcttg
Human genes, cDNA		
PER2	tattctcccattcggtttcg	cctcccaatgatgaaggaga
REV-ERBa	ctgggaggatttctccatga	gccttaagcagggtgacttg
Mouse genomic region, ChIP		
Hsp70	TGTGTGTTGGGAGTGAGAGG	GCTGAAGACTGGAGGGTCTG
Per1 GBS.1	ACTGCCTGGCTTGTTTTGTT	ATATGCCCTAGGCCACACAA
Per1 GBS.2	CATTTCTGGTTGCCCTCTGT	CCACCCCGATCTCTATTCAA
Per1 GBS.3	CAAGGCTGTGTGCATGTCCT	CCAGCGCACTAGGGAACATC
Per1 GBS.4	CTGTCTTCCTCCCTCCAATTCCT	AGGAAGGCTGTGGCCAACA
Per1 GBS.5	TGTCTTCCACTTGCCACTTG	CTGACACAGCCTGTCCCTCT
Per1 GBS.6	TGTCTTCCACTTGCCACTTG	CTGACACAGCCTGTCCCTCT
Per1 GBS.7	TGAAGGGTCTGGGAAGTGAG	ACACACAACGCGTGCATACT
E4bp4 GBS.1	GGACAAACCTGGCAAACATC	AGTTACCCGAGCCCTTCATT
E4bp4 GBS.2	TGGAGGGATTTGAACTCAGG	ACCATGCCTCTCATTTCTGC
E4bp4 GBS.3	AGGATATCTGCAGGCCCTTT	AGTGGTCTGTGCTGCCATCT
E4bp4 GBS.4	CATGTCAATTAGGGCCGTTT	AACTGAAGCCATGAGCCTTG
E4bp4 GBS.5	GCCCAGAGTGCTTTACTGGAA	TCTACTCCCTCTGGGCTGGA
E4bp4 GBS.6	GCCGTGTGCCTTAGGAAGAG	GGCTCTGTGGACCTGGTTTC
E4bp4 GBS.7	GACAGGGTTTCTCTGTGTAGCC	CTAGCACTTGGGAGGCAGAG
Per2 GBS.1	GCAAAAATGGAAGGCAGAAG	CCGAGAAGTAGGAACCGTGA
Per2 GBS.2	AACGACACCACCGTCCTAAG	ACCTCCATATGTGCCCTCTG
Per2 GBS.3	CCATGTGGGTGCTAGGAATAG	CTGGGAAAAGGTGGTGCTTA
Per2 GBS.4	GCTGTCCTGGAGCTCACTCT	CCCCCAAAACAAAGTCTGAA
Per2 GBS.5	ATTGGATACCATGCCAAAGG	GGCTGAAGGATAGCTGCAAG
Per2 GBS.6,7	CACACTCTCAGGCCTCCTGTTTC	CTACTTCTTCCTTTTTCCCTATTCTTCCT
Per2 GBS.8	AACCCGAATGCTCAATTCAC	AGAGAGAGGAGCAGGGCTTC
Human genomic regions, ChIP		
Negative control	ATGAAGGACGACAGCAAAGG	TACAGCTCGGCTTGAGTGTG
PER2 GBS.6,7	ACAGAATGTTCCTGGCATCC	CCTTTCTGCTCCCTCCTCTT
E4bp4 GBS.5	CACAGCTGCAACTCAGAAGC	CTCGGGTTTCAGATGAAGGA
PER1 GBS.3	TCATGTTCTCTTGGCTGGTG	GGCCCCCTTCCTACTAATCC
PER1 GBS.4	CTAGTCCGAAGTGGGCTGAC	CCGGTCTTCTTGCTCGTTAC