

Supplemental Table 1 - Sex Reporting
 Bumgarner JR, Walker II WH, and Nelson RJ, 2021. Circadian Rhythms and Pain.

Section	Citation	Species	Sex	Reported Rhythm/Result	
Pain Behavior	Oliverio et al., 1982	Mouse	Not described	Circadian rhythms in pain behavior and morphine sensitivity	
	Pickard, 1987	Hamster	Male	Circadian rhythms in pain behavior	
	Hagenauer et al., 2017	Human	Female/Male	Model of diurnal rhythm of pain sensitivity in humans generated by field meta-analysis	
	Martínez-Gómez et al., 1994	Rat	Female	Diurnal variations in pain behavior	
	Frederickson et al., 1977	Mouse	Not described	Varying effect of morphine/naloxone on rhythmic pain behavior	
	Kavaliers and Hirst, 1983	Mouse	Male	Rhythmic pain behavior, rhythmic morphine analgesia	
	Castellano et al., 1985	Mouse	Not described	Varying diurnal rhythms in pain behavior between two strains of mice	
	DRG	Zhang et al., 2012	Mouse	Male	Rhythmic clock gene expression, substance P expression, pain behavior
		Kusunose et al., 2010	Mouse	Male	Rhythmic $\alpha 2\delta$ -1 expression
Lee et al., 2017		Mouse	Not described	Pro-kineticin expression (single time-point)	
Negri et al., 2002		Rat	Male	<i>Tef</i> expression (single time-point)	
Yang et al., 2015		Human	Female/Male	Rhythmic esophageal TRPV1 protein expression	
Kim et al., 2020		Mouse	Male	Rhythmic TRP channel expression	
Spinal Cord	Morioka et al., 2012	Mouse	Male	Rhythmic clock gene expression	

	Morioka et al., 2016	Mouse	Male	Rhythmic clock gene expression
	Onishi et al., 2002	Mouse	Male	Rev-erba expression (single time-point)
	Yamamoto et al., 2001	Hamster	Male	<i>Per1</i> expression (single time-point)
	Eblen-Zajjur et al., 2015	Rat	Male	Rhythmic Na ⁺ /K ⁺ ATPase activity
	Xia et al., 2016	Mouse	Male	Rhythmic NR2B-CREB-CRTC1 signaling protein/gene expression, pain behavior
	Xia et al., 2017	Rat, Mouse	Male	Rhythmic pain behavior
	Zhang et al., 2012	Mouse	Male	Rhythmic substance P protein expression
	Koyanagi et al., 2016	Mouse	Male	Rhythmic ATP concentrations, SGK-1 protein/gene expression, pain behavior
PAG	Kriegsfeld et al., 2004	Hamster	Male	ipRGC projections to PAG
	Hattar et al., 2006	Mouse	Female/Male	ipRGC projections to PAG
	Zhang et al., 2009	Mouse	Male	SCN Prokineticin projections to PAG
	Landgraf et al., 2016	Mouse	Male	Rhythmic PER2 expression
	Takada et al., 2013	Mouse	Male	Rhythmic μ-Opioid Receptor gene expression
	Sapin et al., 2009	Rat	Male	Rhythmic REM 'on' & 'off' neuronal activity
RVM	Monošíková et al., 2007	Rat	Male	Rhythmic clock gene expression

	Hery et al., 1977	Rat	Male	Rhythmic tryptophan-5-hydroxylase activity
	Leung and Mason, 1999	Rat	Male	Rhythmic RVM On/Off neuronal activity
LC	Warnecke et al., 2005	Mouse	Not described	Lack of clock gene expression
	Mahoney et al., 2013	Hamsters	Male	Rhythmic <i>Per1</i> expression
	Natali et al., 1980	Mouse	Male	Rhythmic tyrosine hydroxylase activity
	Aston-Jones et al., 2001	Rat	Male	Lack of rhythmic LC activity following dorsomedial hypothalamic lesions
	González and Aston-Jones, 2006	Rat	Male	Altered sleep-wake rhythms following chemical LC lesion
Thalamus	Ku et al., 2018	Human	Female/Male	Rhythmic connectivity/activity
	Cardoso-Cruz et al., 2011	Rat	Male	Varying thalamocortical partial directed coherence across the day
	Feillet et al., 2008	Mouse	Male	Rhythmic clock gene expression
Hypothalamus	Kriegsfeld et al., 2004	Hamster	Male	ipRGC projections to PAG
	Girotti et al., 2009	Rat	Male	Rhythmic clock gene expression
	Kriegsfeld et al., 2003	Mouse	Female	Rhythmic <i>Per1</i> protein/gene expression
	Kalil et al., 2016	Rat	Female	Rhythmic clock gene expression
	Orozco-Solis et al., 2016	Mouse	Not described	Rhythmic clock gene expression

	Moriya et al., 2009	Mouse	Male	Rhythmic clock gene expression
	Takahashi et al., 1986	Rat	Male	Rhythmic met-enkephalin and β -endorphin concentrations
	Asai et al., 2007	Rat	Male	Rhythmic met-enkephalin and leu-enkephalin concentrations
Orexin	Salomon et al., 2003	Human	Female/Male	Rhythmic cerebrospinal fluid orexin-A concentration fluctuations
	Fujiki et al., 2001	Rat	Male	Rhythmic cerebrospinal fluid orexin-A concentration fluctuations
	Zeitzer et al., 2003	Squirrel Monkey	Female	Rhythmic cerebrospinal fluid orexin-A concentration fluctuations
	Mäkelä et al., 2018	Human	Male	Lack of plasma orexin-A fluctuation
	Zhang et al., 2004	Rat	Male	SCN lesions abolish cerebrospinal fluid orexin-A rhythms
	Marston et al., 2008	Mouse	Male	Rhythmic orexin-A neuron activity
	Estabrooke et al., 2001	Rat	Male	Rhythmic orexin-A neuron activity
	Gompf and Aston-Jones, 2008	Rat	Male	Rhythmic orexin-A neuron activity, projections to LC with correlated activity rhythms
	Taheri et al., 2000	Rat	Male	Rhythmic orexin-A protein expression in pons and hypothalamus
Cortical/Limbic	Li et al., 2013	Human	Female/Male	Rhythmic gene expression
	Woodruff et al., 2016	Rat	Male	Rhythmic clock gene expression
	Chun et al., 2015	Rat	Female/Male	Rhythmic clock gene expression

	Christiansen et al., 2016	Rat	Male	Rhythmic clock gene expression
	Lamont et al., 2005	Rat	Male	Rhythmic clock gene expression
	Sylvester et al., 2002	Rat	Female	SCN -> PVN -> PFC Projections
	Takada et al., 2013	Mouse	Male	Rhythmic frontal cortex μ -opioid receptor gene expression
	Mitsushima et al., 1996	Rat	Male	Rhythmic cortical ACh release
	Chen et al., 2016	Rat	Male	Disrupted circadian rhythms following insular lesions
	Moriya et al., 2015	Mouse	Male	Rhythmic serotonin and serotonin metabolite concentration fluctuations
	Izumo et al., 2012	Rat	Female	Rhythmic serotonin and dopamine expression
	Hayashi et al., 2013	Mouse	Male	Rhythmic cortical synaptic activity and spine density
Opioid System	Asai et al., 2007	Rat	Male	Rhythmic met-enkephalin and leu-enkephalin concentration fluctuations
	Kurumaji et al., 1988	Rat	Male	Rhythmic striatal and mesolimbic met-enkephalin expression
	Reid et al., 1982	Rat	Male	Rhythmic hypothalamic and pituitary dynorphin expression
	Mozzanica et al., 1991	Human	Not described	Rhythmic plasma Met-enkephalin and β -endorphin concentration fluctuations
	Mozzanica et al., 1992	Human	Female/Male	Rhythmic plasma Met-enkephalin and β -endorphin concentration fluctuations
	Petraglia et al., 1983	Human	Female/Male	Rhythmic plasma β -endorphin concentration fluctuations

	Wesche and Frederickson, 1981	Rat	Male	Rhythmic whole-brain met-enkephalin concentration fluctuations
	Frederickson et al., 1977	Mouse	Not described	Varying effect of morphine/naloxone on rhythmic pain behavior
	Kavaliers and Hirst, 1983	Mice	Male	Rhythmic pain behavior, rhythmic morphine analgesia
	Ibrahim et al., 2017	Rat	Male	Examines green-light induced analgesia and the role of RVM activity
	Martin et al., 2021	Rat	Male	Green light analgesia dependent on μ - and δ -opioid receptor signaling in the spinal cord
	Takada et al., 2013	Mouse	Male	Rhythmic PAG/Frontal cortex μ -opioid receptor gene expression
Endocrine System	Weitzman et al., 1971	Human	Female/Male	Diurnal plasma cortisol concentration fluctuations
	Albers et al., 1985	Hamsters	Male	Rhythmic serum cortisol/corticosterone concentration fluctuations
	Heybach and Vernikos-Danellis, 1978	Rat	Male	Adrenalectomy does not abolish diurnal variations in pain behavior
	Koyanagi et al., 2016	Mouse	Male	Rhythmic corticosterone secretion necessary for diurnal neuropathic pain behavior
	Bremner et al., 1983	Human	Male	Rhythmic androgen concentration fluctuations
	Spies et al., 1974	Rhesus Monkey	Female	Rhythmic serum progesterone and estradiol concentration fluctuations during luteal phase of estrous cycle
Immune System	Hayashi et al. 2013	Mouse	Male	Microglia-driven rhythmic cortical synaptic activity and spine density