Table S1. Properties of SCN PER2::LUC rhythms (± SEM) prior to manipulation (averaged across slice position).

Experiment	Manipulation	Genotype	Sex	n	Phase (CT)	Period (h)	Damping (days)	Prediction Error (h)
1a§	V1A/B Dose, +V1A/B Antag	PER2::LUC	**Both**	**56**	**10.8 ± 0.1**	**24.47 ± 0.04***	**3.8 ± 0.2**	**0.03 ± 0.03**
			Female	26	10.9 ± 0.1	24.58 ± 0.06	3.6 ± 0.4	0.07 ± 0.06
			Male	30	10.8 ± 0.1	24.37 ± 0.05	3.9 ± 0.2	-0.003 ± 0.02
1b§	V1A, V1B	PER2::LUC	**Both**	**46**	**11.3 ± 0.2**	**24.51 ± 0.04***	**3.9 ± 0.3**	**-0.02 ± 0.04**
			Female	22	11.6 ± 0.3	24.65 ± 0.05	3.6 ± 0.3	0.06 ± 0.07
			Male	24	11.1 ± 0.3	24.38 ± 0.06	4.1 ± 0.5	-0.02 ± 0.03
2§	PRC	PER2::LUC	**Both**	**53**	**10.8 ± 0.1***	**24.54 ± 0.03**	**3.4 ± 0.1**	**0.01 ± 0.02**
			Female	24	11.0 ± 0.2	24.54 ± 0.05	3.2 ± 0.1	-0.03 ± 0.02
			Male	29	10.7 ± 0.1	24.53 ± 0.04	3.5 ± 0.2	0.04 ± 0.03
3§	PLC, AC Inhibitors	PER2::LUC	**Both**	**37**	**11.2 ± 0.1**	**24.51 ± 0.03***	**4.0 ± 0.2***	**-0.02 ± 0.02**
			Female	21	11.0 ± 0.1	24.63 ± 0.04	3.5 ± 0.9	-0.06 ± 0.02
			Male	16	10.9 ± 0.2	24.48 ± 0.03	4.1 ± 0.2	-0.02 ± 0.03
4a§	VIP WT	*Vip* $^{+/+}$; PER2::LUC	**Both**	**28**	**10.8 ± 0.2**	**24.45 ± 0.06***	**3.2 ± 0.1**	**0.04 ± 0.06**
			Female	12	11.1 ± 0.2	24.62 ± 0.07	3.0 ± 0.1	0.14 ± 0.13
			Male	16	10.7 ± 0.2	24.32 ± 0.07	3.3 ± 0.1	-0.03 ± 0.04
	VIP Deficient Heterozygous	*Vip* $^{cre/+}$; PER2::LUC	**Both**	**17**	**10.5 ± 0.1**	**24.34 ± 0.05***	**3.7 ± 0.1***	**0.04 ± 0.05**
			Female	10	10.4 ± 0.2‡	24.21 ± 0.05‡	3.5 ± 0.1‡	0.005 ± 0.05
			Male	7	10.7 ± 0.3	24.51 ± 0.07	3.9 ± 0.1‡	0.10 ± 0.1
	VIP Deficient Homozygous	*Vip* $^{cre/cre}$; PER2::LUC	**Both**	**16**	**10.1 ± 0.1**	**24.45 ± 0.05**	**4.4 ± 0.1**	**0.01 ± 0.03**
			Female	10	10.0 ± 0.1‡	24.39 ± 0.05‡	4.4 ± 0.1‡	0.02 ± 0.04
			Male	6	10.1 ± 0.3	24.55 ± 0.08‡	4.5 ± 0.3‡	-0.01 ± 0.04
4b§	VPAC2 Antagonist	PER2::LUC	**Both**	**12**	**11.2 ± 0.2**	**24.53 ± 0.05**	**3.5 ± 0.1**	**-0.04 ± 0.03**
			Female	6	11.4 ± 0.2	24.54 ± 0.07	3.3 ± 0.1	0.01 ± 0.04
			Male	6	10.9 ± 0.2	24.51 ± 0.08	3.6 ± 0.2	-0.08 ± 0.03
Overall§	Multiple	PER2::LUC WT	**Both**	**204**	**11.1 ± 0.1***	**24.52 ± 0.02***	**3.8 ± 0.1**	**-0.01 ± 0.01**
			Female	99	11.2 ± 0.1	24.57 ± 0.02	3.6 ± 0.1	-0.06 ± 0.03
			Male	105	10.9 ± 0.1	24.48 ± 0.03	3.9 ± 0.2	-0.10 ± 0.02

§1a- **Phase:** t (54) = -0.4, p > 0.6, **Period:** t (54) = -2.5, p = 0.02, **Damping:** t (54) = 0.6, p > 0.5, **Prediction Error:** t (54) = -1.1, p > 0.2

§1b- **Phase:** t (44) = -1.15, p > 0.2, **Period:** t (44) = -3.6, p < 0.001, **Damping:** t (44) =0.7, p > 0.4, **Prediction Error:** t (44) = -1.1, p > 0.2

§2: **Phase:** t (51) = -1.7, p = 0.09, **Period:** t (51) = -0.07, p > 0.9, **Damping:** t (51) = 1.0, p > 0.3, **Prediction Error:** t (51) = -1.9, p = 0.06

§3- **Phase:** t (35) = -0.4, p > 0.7, **Period:** t (35) = -2.6, p = 0.01, **Damping:** t (35) =3.3, p < 0.05, **Prediction Error:** t (35) = 1.1, p > 0.2

§4a- **Phase:** Genotype: F (2,55) = 6.5, p = 0.003, Sex: F (1,55) = 0.01, p > 0.9, Genotype*Sex: F (2,55) = 1.5, p > 0.2, **Period:** Genotype: F (2,55) = 1.6, p > 0.2, Sex: F (1,55) = 0.9, p > 0.3, Genotype*Sex: F (2,55) = 11.7, p < 0.0001, **Damping**: Genotype: F (2,55) = 1.7, p > 0.1, Sex: F (1,55) = 0.01, p > 0.9, Genotype*Sex: F (2,55) = 0.09, p > 0.9, **Prediction Error**: Genotype: F (2,55) = 0.2, p > 0.7, Sex: F (1,55) = 0.3, p > 0.6, Genotype*Sex: F (2,55) = 1.5, p > 0.2

§4b- **Phase:** t (10) = -1.7, p = 0.09, **Period:** t (10) = -0.2, p > 0.8, **Damping:** t (10) = 1.43, p > 0.1, **Prediction Error:** t (10) = -1.7, p > 0.1

§Overall- **Phase:** t (210) = -2.2, p = 0.03, **Period:** t (210) = -2.4, p = 0.02, **Damping:** t (210) = 1.8, p = 0.7, **Prediction Error:** t (210) = -1.3, p > 0.2

* Sex difference, p < 0.05. ‡ Genotype difference, p < 0.05

Table S2. Properties of SCN PER2::LUC rhythms (±SEM) after treatment (averaged across slice position).

				Phase Shift (h)			Period Difference (h)			Damping (days)		
Experiment	**Manipulation**	**V1 Group**	**n**	**Both**	**Female**	**Male**	**Both**	**Female**	**Male**	**Both**	**Female**	**Male**
1a§	0uM	Vehicle	10	**0.3 ± 0.2**	0.5 ± 0.2	0.0 ± 0.2	**0.02 ± 0.2**	0.21 ± 0.2	-0.16 ± 0.3	**4.2 ± 0.5**	3.8 ± 0.9	4.6 ± 0.3
	1uM	Agonists	7	**-0.4 ± 0.2**#	-0.2 ± 0.3#	-0.7 ± 0.2	**-0.31 ± 0.3**	-0.57 ± 0.5#	0.03 ± 0.3	**4.3 ± 0.5**	4.9 ± 0.7	3.5 ± 0.6
	5uM	Agonists	7	**-0.1 ± 0.1**	-0.2 ± 0.2#	-0.1 ± 0.1	**-0.48 ± 0.3**#	-0.32 ± 0.4	-0.70 ± 0.3	**3.7 ± 0.5**	3.8 ± 0.9	3.6 ± 0.5
	10uM	Agonists	18	**-0.9 ± 0.1**#*	-1.3 ± 0.3#	-0.6 ± 0.1#	**0.08 ± 0.1**	-0.05 ± 0.1	0.16 ± 0.1	**3.5 ± 0.4**	2.9 ± 0.2	3.9 ± 0.6
	50uM	Agonists	5	**0.0 ± 0.3**	0.2 ± 0.3	-0.1 ± 0.5	**-0.53 ± 0.1**#	-0.80 ± 0.2#	-0.35 ± 0.1	**5.0 ± 1.0**	5.4 ± 2.5	4.8 ± 1.1
	V1 Antagonists	Agonists	9	**0.2 ± 0.3**	0.0 ± 0.5	0.3 ± 0.3	**0.33 ± 0.2***	0.74 ± 0.4	0.01 ± 0.2	**3.6 ± 0.4**	3.2 ± 0.5	4.0 ± 0.7
1b§	Vehicle	Vehicle	23	**-0.1 ± 0.1**	0.3 ± 0.1	-0.2 ± 0.2	**-0.08 ± 0.1**	-0.11 ± 0.1	-0.04 ± 0.1	**4.9 ± 0.7**	4.1 ± 0.6	6.1 ± 1.3
	V1A/B	Agonists	35	**-0.7 ± 0.1**#	-0.8 ± 0.2#	-0.5 ± 0.1	**0.12 ± 0.1**	0.06 ± 0.1	0.18 ± 0.1	**3.8 ± 0.4**	3.1 ± 0.2	4.3 ± 0.7
	V1A	Agonist	9	**-0.4 ± 0.2**#	-0.5 ± 0.1#	-0.4 ± 0.5	**-0.27 ± 0.2**	-0.29 ± 0.1	-0.17 ± 0.1	**3.3 ± 0.5**	3.2 ± 0.4	3.5 ± 0.9
	V1B	Agonist	8	**-0.2 ± 0.2**	-0.2 ± 0.3	-0.3 ± 0.1	**-0.34 ± 0.2**	-0.08 ± 0.2	-0.30 ± 0.1	**3.6 ± 0.3**	3.1 ± 0.3	4.5 ± 0.2
2§	CT04	Vehicle	6	**0.6 ± 0.2**	0.8 ± 0.2	0.3 ± 0.4	**0.20 ± 0.2**	0.35 ± 0.1	0.06 ± 0.3	**4.8 ± 0.6**	4.5 ± 1.1	5.0 ± 0.5
		Agonists	11	**0.0 ± 0.1**#	0.1 ± 0.1	-0.1 ± 0.2	**0.10 ± 0.1**	0.04 ± 0.2	0.16 ± 0.1	**4.0 ± 0.7**	3.1 ± 0.2	4.8 ± 1.3
	CT10	Vehicle	8	**-0.4 ± 0.2**	-0.4 ± 0.2	-0.4 ± 0.3	**0.10 ± 0.1**	-0.12 ± 0.2	0.32 ± 0.1	**3.2 ± 0.3**	3.6 ± 0.5	2.9 ± 0.2
		Agonists	10	**0.0 ± 0.2**	0.2 ± 0.1	-0.1 ± 0.4	**0.01 ± 0.1**	0.16 ± 0.1	0.01 ± 0.1	**4.1 ± 0.5**	3.5 ± 0.5	4.5 ± 0.7
	CT16	Vehicle	9	**-0.5 ± 0.2**	-0.4 ± 0.3	-0.7 ± 0.3	**-0.38 ± 0.1***	-0.45 ± 0.2	-0.32 ± 0.1	**2.8 ± 0.5**	3.3 ± 0.6	3.2 ± 0.4
		Agonists	9	**-1.1 ± 0.1**#	-1.0 ± 0.3	-1.2 ± 0.1	**-0.38 ± 0.1***	-0.74 ± 0.2	-0.09 ± 0.1	**5.2 ± 0.7**#	4.6 ± 0.4	5.7 ± 1.3#
	CT22	Vehicle	10	**0.3 ± 0.2**	0.5 ± 0.2	0.0 ± 0.2	**0.05 ± 0.1**	0.06 ± 0.2	0.04 ± 0.2	**4.2 ± 0.5**	3.8 ± 0.9	4.6 ± 0.3
		Agonists	18	**-0.9 ± 0.2**#*	-1.3 ± 0.2#	-0.6 ± 0.1#	**0.29 ± 0.1**	0.20 ± 0.3	0.34 ± 0.1	**3.5 ± 0.4**	2.9 ± 0.2	3.9 ± 0.6
3§	Vehicle	Vehicle	25	**0.1 ± 0.1**	0.3 ± 0.1	-0.2 ± 0.2	**-0.16 ± 0.1**	-0.06 ± 0.2	-0.30 ± 0.2	**4.4 ± 0.5**	4.0 ± 0.6	5.1 ± 1.0
		Agonists	37	**-0.7 ± 0.1**#	-0.8 ± 0.2#	-0.6 ± 0.1	**0.00 ± 0.1**	-0.08 ± 0.1	0.08 ± 0.1	**3.5 ± 0.3**	3.4 ± 0.4	3.6 ± 0.4
	PLC Inhibitor	Vehicle	6	**-0.8 ± 0.2**‡	-0.6 ± 0.2‡	-1.1 ± 0.2	**-0.28 ± 0.2**	-0.29 ± 0.3	-0.29 ± 0.3	**4.0 ± 0.8**	4.3 ± 1.2	3.5 ± 1.0
		Agonists	7	**-0.4 ± 0.2**	-0.3 ± 0.3	-0.5 ± 0.2	**-0.40 ± 0.3**	-0.32 ± 0.4	-0.32 ± 0.4	**4.4 ± 1.0**	3.4 ± 0.6	5.8 ± 2.2
	AC Inhibitor	Vehicle	6	**-0.9 ± 0.2**‡	-0.9 ± 0.3‡	-0.9 ± 0.5	**-0.20 ± 0.2**	-0.15 ± 0.0	-0.15 ± 0.0	**6.3 ± 0.6**	6.3 ± 1.0	6.5 ± 0.4
		Agonists	7	**-0.6 ± 0.3**	-0.7 ± 0.6	-0.5 ± 0.2	**-0.18 ± 0.1**	-0.65 ± 0.2	0.05 ± 0.2	**4.9 ± 1.1**	5.1 ± 1.9	4.7 ± 0.9
	PLC+AC Inhibitors	Vehicle	6	**-0.5 ± 0.5**	-0.5 ± 0.3	-0.5 ± 1.1	**-0.14 ± 0.3**	-0.11 ± 0.5	0.00 ± 0.4	**6.3 ± 2.1**	8.3 ± 4.0‡	4.4 ± 1.6
		Agonists	9	**0.6 ± 0.3**#*	0.0 ± 0.3	1.0 ± 0.4#	**0.08 ± 0.1***	-0.16 ± 0.3	0.72 ± 0.2	**6.3 ± 1.5***	9.1 ± 2.6	4.0 ± 0.8
4a§	*Vip* $^{+/+}$ *; PER2::LUC*	Vehicle	10	**0.3 ± 0.2**	0.5 ± 0.2	0.0 ± 0.2	**0.02 ± 0.2**	0.21 ± 0.2	-0.16 ± 0.3	**4.9 ± 0.8**	3.8 ± 0.9	5.9 ± 1.3
		Agonists	18	**-0.9 ± 0.1**#*	-1.3 ± 0.2#	-0.6 ± 0.1	**0.08 ± 0.1**	-0.05 ± 0.1	0.16 ± 0.1	**3.5 ± 0.4**	2.9 ± 0.2	3.9 ± 0.6
	Vip $^{cre/+}$ *; PER2::LUC*	Vehicle	8	**-0.2 ± 0.3**	0.0 ± 0.4	-0.7 ± 0.2	**-0.17 ± 0.1**	0.00 ± 0.1	-0.44 ± 0.3	**5.0 ± 0.6**	5.6 ± 0.9	4.2 ± 0.2
		Agonists	9	**-0.3 ± 0.3**	-0.5 ± 0.4	-0.4 ± 0.3	**-0.04 ± 0.2***	0.22 ± 0.2	-0.46 ± 0.2	**3.3 ± 0.4**	3.5 ± 0.5	2.6 ± 0.9
	Vip $^{cre/cre}$ *; PER2::LUC*	Vehicle	7	**-0.2 ± 0.2**	-0.0 ± 0.2	-0.5 ± 0.4	**-0.06 ± 0.2**	-0.06 ± 0.2	-0.06 ± 0.1	**6.5 ± 1.1**	6.4 ± 1.3	6.7 ± 2.9
		Agonists	9	**-0.2 ± 0.2**	0.0 ± 0.3	-0.4 ± 0.3	**0.03 ± 0.1**	0.20 ± 0.1	-0.19 ± 0.2	**4.8 ± 0.8**	5.5 ± 1.6	4.2 ± 0.4
4b§	VPAC2 Vehicle	Vehicle	22	**0.1 ± 0.1**	0.3 ± 0.1	-0.1 ± 0.1	**-0.17 ± 0.1**	-0.06 ± 0.2	-0.36 ± 0.2	**4.3 ± 0.5**	4.0 ± 0.6	4.9 ± 1.1
		Agonists	36	**-0.7 ± 0.1**#	-0.8 ± 0.2#	-0.6 ± 0.1#	**-0.02 ± 0.1**	-0.08 ± 0.1	0.05 ± 0.1#	**3.5 ± 0.3**	3.4 ± 0.4	3.6 ± 0.4
	VPAC2 Antagonist	Vehicle	6	**-0.4 ± 0.2**	0.0 ± 0.2	-0.7 ± 0.1	**-0.48 ± 0.1**	-0.56 ± 0.2	-0.41 ± 0.1	**3.0 ± 0.3**	3.0 ± 0.6	3.0 ± 0.4
		Agonists	6	**-0.3 ± 0.3**	0.1 ± 0.2	-0.6 ± 0.1	**-0.52 ± 0.1**	-0.36 ± 0.1	-0.68 ± 0.3	**4.7 ± 1.3**	5.2 ± 2.5	4.2 ± 1.4

§1a **Phase Shift** FF ANOVA, Concentration: F (4,46) = 10.7, p < 0.001, Sex: F (1,46) = 0.5, p > 0.4, Concentration*Sex: F (4,46) = 3.2, p = 0.02, **Period Difference** FF ANOVA, Concentration: F (4,46) = 2.6, p = 0.05, Sex: F (1,46) = 0.4, p > 0.5, Concentration*Sex: F (4,46) = 1.4, p > 0.2, **Damping** FF ANOVA, Concentration: F (4,44) = 1.4, p > 0.2, Sex: F (1,44) = 0.0, p > 0.8, Concentration*Sex: F (4,44) = 0.9, p > 0.4

§1b **Phase Shift** FF ANOVA, Drug Group: F (2,36) = 18.4, p < 0.001, Sex: F (1,36) = 0.8, p > 0.3, Drug Group*Sex: F (2,36) = 3.4, p = 0.05, **Period Difference** FF ANOVA, Drug Group: F (2,36) = 1.9, p > 0.1, Sex: F (1,36) = 3.8, p = 0.06, Drug Group*Sex: F (2,36) = 3.6, p = 0.04, **Damping** FF ANOVA, Drug Group: F (2,35) = 2.4, p = 0.1, Sex: F (1,35) = 4.5, p = 0.04, Drug Group*Sex: F (2,35) = 0.4, p > 0.6

§1c **Phase Shift** FF ANOVA, V1 Agonist: F (3,76) = 6.3, p < 0.001, Sex: F (1,76) = 0.1, p > 0.7, V1 Agonist*Sex: F (3,76) = 2.1, p = 0.1, **Period Difference** FF ANOVA, V1 Agonist: F (3,73) = 1.4, p > 0.2, Sex: F (1,73) = 0.2, p > 0.6, V1 Agonist*Sex: F (3,73) = 0.5, p > 0.6, **Damping** FF ANOVA, V1 Agonist: F (3,68) = 2.1, p > 0.1, Sex: F (1,68) = 2.4, p > 0.1, V1 Agonist *Sex: F (3,68) = 0.2, p > 0.9

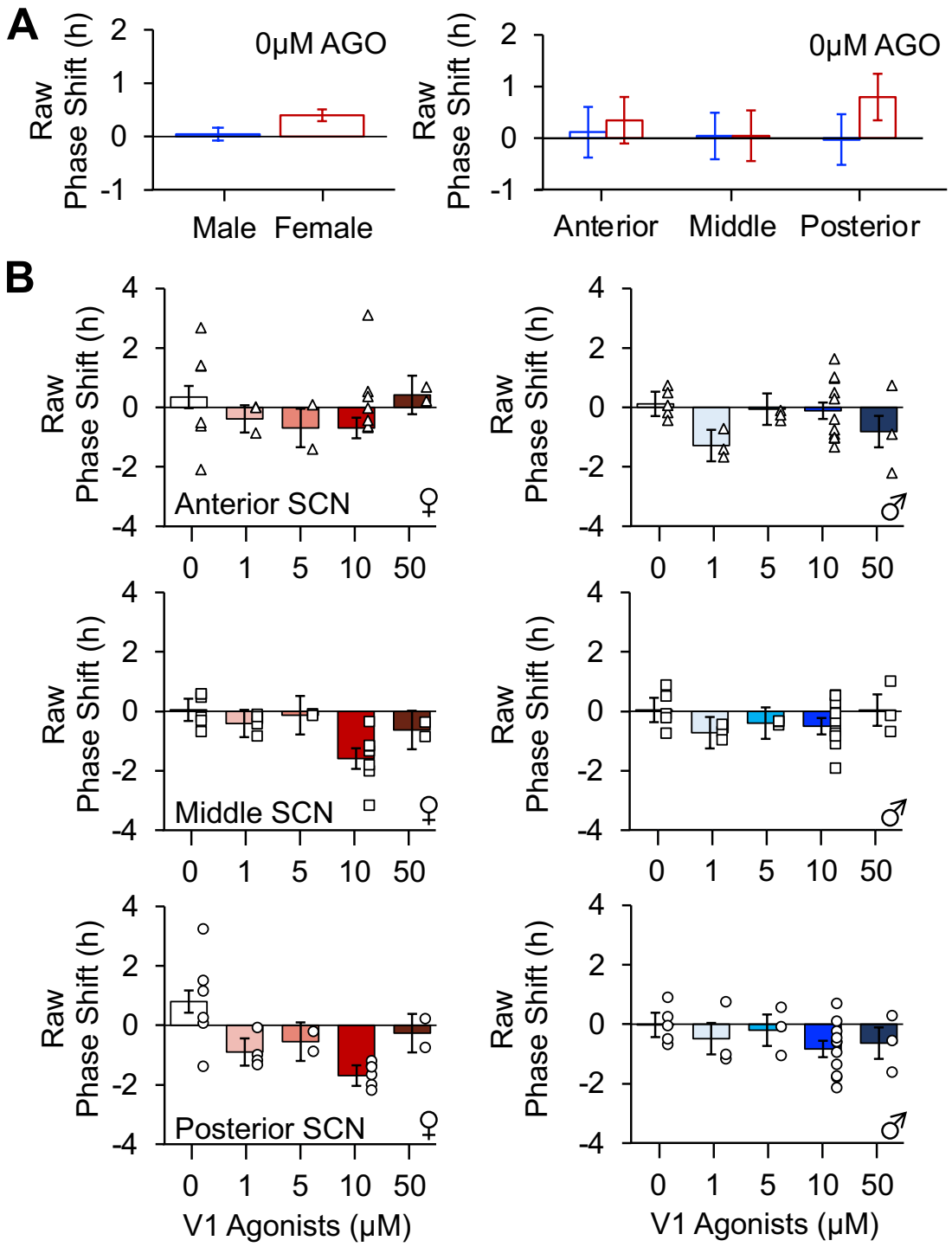
§2 **Phase Shift** FF ANOVA, Drug Group: F (1,80) = 18.4, p < 0.001, Sex: F (1,80) = 1.4, p > 0.2, Drug Group*Sex: F (1,80) = 2.4, p > 0.1, CT: F (3,80) = 11.9, p < 0.001, Drug Group*CT: F (3,80) = 9.8, p < 0.001, Sex*CT: F (3,80) = 1.1, p > 0.3, Drug Group*Sex*CT: F (3,80) = 2.6, p = 0.06, **Period Difference** FF ANOVA, Drug Group: F (1,80) = 1.3, p > 0.2, Sex: F (1,80) = 4.9, p = 0.03, Drug Group*Sex: F (1,80) = 0.1, p > 0.7, CT: F (3,80) = 16.7, p < 0.001, Drug Group*CT: F (3,80) = 0.5, p > 0.7, Sex*CT: F (3,80) = 2.7, p = 0.05, Drug Group*Sex*CT: F (3,80) = 2.2, p = 0.09, **Damping** FF ANOVA, Drug Group: F (1,77) = 0.4, p > 0.5, Sex: F (1,77) = 2.8, p = 0.1, Drug Group*Sex: F (1,77) = 1.9, p > 0.1, CT: F (3,77) = 0.7, p > 0.5, Drug Group*CT: F (3,77) = 3.0, p = 0.04, Sex*CT: F (3,77) = 0.3, p > 0.8, Drug Group*Sex*CT: F (3,77) = 0.2, p > 0.9

§3 **Phase Shift** FF ANOVA, V1 Agonist: F (1,98) = 2.1, p > 0.1, Inhibitor: F (3,98) = 3.6, p = 0.02, V1 Agonist*Inhibitor: F (3,98) = 8.2, p < 0.001, Sex: F (1,98) = 0.0, p > 0.9, V1 Agonist*Sex: F (1,198) = 2.7, p > 0.1, Inhibitor*Sex: F (3,98) = 1.2, p > 0.3, V1 Agonist*Inhibitor*Sex: F (3,98) = 0.3, p > 0.8, **Period Difference** FF ANOVA, V1 Agonist: F (1,98) = 0.1, p > 0.7, Inhibitor: F (3,98) = 1.7, p > 0.1, V1 Agonist*Inhibitor: F (3,98) = 0.9, p > 0.4, Sex: F (1,98) = 2.4, p > 0.1, V1 Agonist*Sex: F (1,98) = 4.2, p = 0.04, Inhibitor*Sex: F (3,98) = 1.1, p > 0.3, V1 Agonist*Inhibitor*Sex: F (3,98) = 0.3, p > 0.8, **Damping** FF ANOVA, V1 Agonist: F (1,96) = 0.4, p > 0.5, Inhibitor: F (3,96) = 4.3, p = 0.01, V1 Agonist*Inhibitor: F (3,96) = 0.7, p > 0.5, Sex: F (1,96) = 1.5, p > 0.2, V1 Agonist*Sex: F (1,96) = 0.0, p > 0.9, Inhibitor*Sex: F (3,96) = 4.0, p = 0.01, V1 Agonist*Inhibitor*Sex: F (3,96) = 0.6, p > 0.6

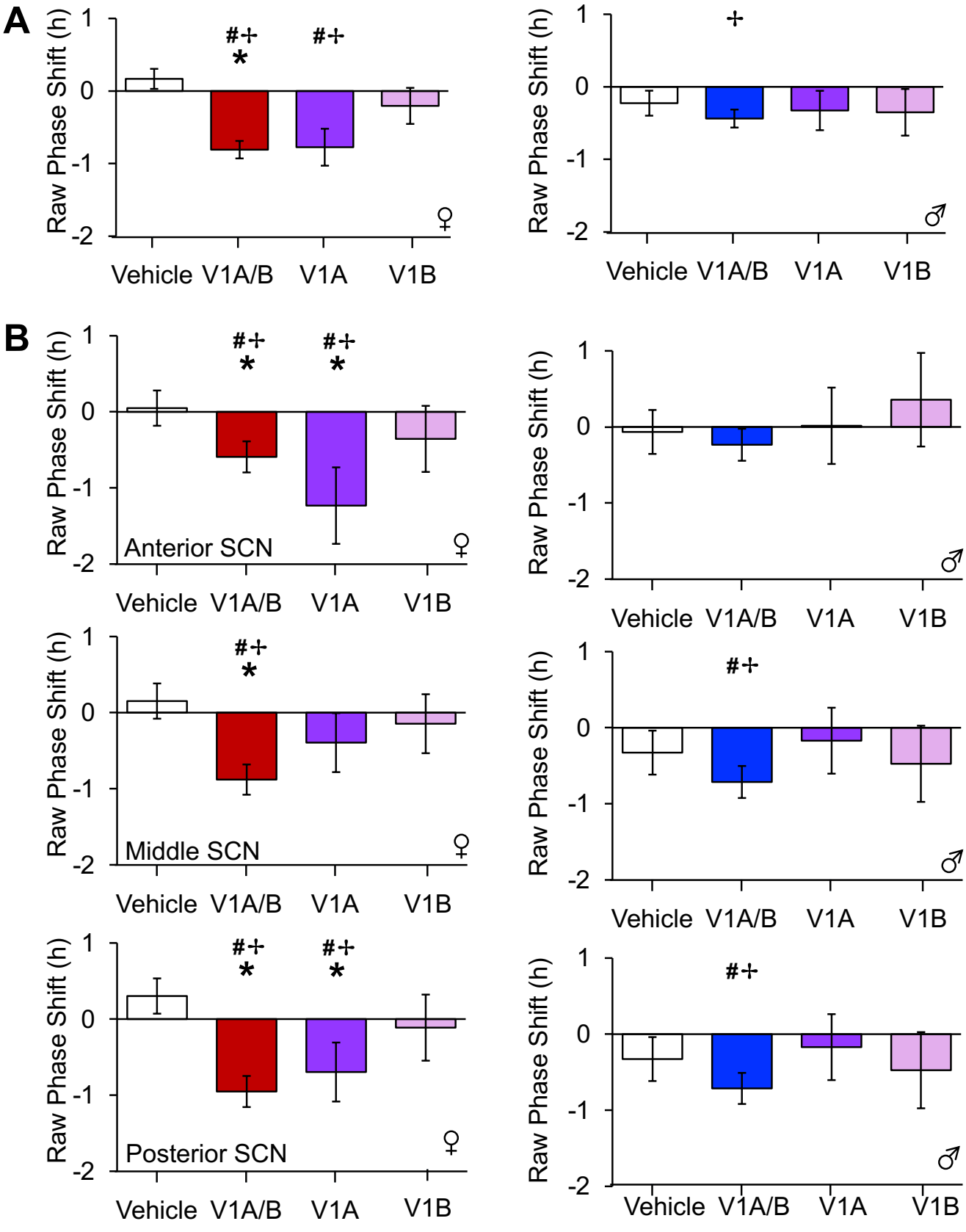
§4a **Phase Shift** FF ANOVA, Genotype: F (2,59) = 0.2, p > 0.8, Drug Group: F (1,59) = 4.2, p = 0.05, Genotype*Drug Group: F (2,59) = 6.6, p < 0.005, Sex: F (1,59) = 0.8, p > 0.3, Genotype*Sex: F (2,59) = 0.7, p > 0.4, Drug Group*Sex: F (1,59) = 4.4, p = 0.04, Genotype*Drug Group*Sex: F (2,59) = 1.0, p > 0.3, **Period Difference** FF ANOVA, Genotype: F (2,59) = 1.4, p > 0.2, Drug Group: F (1,59) = 0.4, p > 0.5, Genotype*Drug Group: F (2,59) = 0.0, p > 0.9, Sex: F (1,59) = 6.7, p = 0.01, Genotype*Sex: F (2,59) = 1.8, p > 0.1, Drug Group*Sex: F (1,59) = 0.0, p > 0.9, Genotype*Drug Group*Sex: F (2,59) = 2.3, p = 0.11, **Damping** FF ANOVA, Genotype: F (2,55) = 3.2, p = 0.05, Drug Group: F (1,55) = 8.0, p = 0.01, Genotype*Drug Group: F (2,55) = 0.0, p > 0.9, Sex: F (1,55) = 0.0, p > 0.9, Genotype*Sex: F (2,55) = 2.3, p = 0.11, Drug Group*Sex: F (1,55) = 0.4, p > 0.5, Genotype*Drug Group*Sex: F (2,55) = 0.2, p > 0.7

§4b **Phase Shift** FF ANOVA, VPAC2 Antagonist: F (1,69) = 0.0, p > 0.9, V1 Agonist: F (1,69) = 3.8, p = 0.06, VPAC2 Antagonist*V1 Agonist: F (1,69) = 6.3, p = 0.01, Sex: F (1,69) = 5.2, p = 0.03, VPAC2 Antagonist*Sex: F (1,69) = 3.8, p = 0.06, V1 Agonist*Sex: F (1,69) = 0.8, p > 0.3, VPAC2 Antagonist*V1 Agonist*Sex: F (1,69) = 0.8, p > 0.3, **Period Difference** FF ANOVA, VPAC2 Antagonist: F (1,69) = 6.7, p = 0.01, V1 Agonist: F (1,69) = 0.3, p > 0.6, VPAC2 Antagonist*V1 Agonist: F (1,69) = 0.6, p > 0.4, Sex: F (1,69) = 0.3, p > 0.5, VPAC2 Antagonist*Sex: F (1,69) = 0.0, p > 0.9, V1 Agonist*Sex: F (1,69) = 0.0, p > 0.9, VPAC2 Antagonist*V1 Agonist*Sex: F (1,69) = 2.2, p > 0.1, **Damping** FF ANOVA, VPAC2 Antagonist: F (1,69) = 0.0, p > 0.8, V1 Agonist: F (1,69) = 0.3, p > 0.5, VPAC2 Antagonist*V1 Agonist: F (1,69) = 3.8, p = 0.06, Sex: F (1,69) = 0.0, p > 0.9, VPAC2 Antagonist*Sex: F (1,69) = 0.5, p > 0.4, V1 Agonist*Sex: F (1,69) = 0.5, p > 0.5, VPAC2 Antagonist*V1 Agonist*Sex: F (1,69) = 0.0, p > 0.8

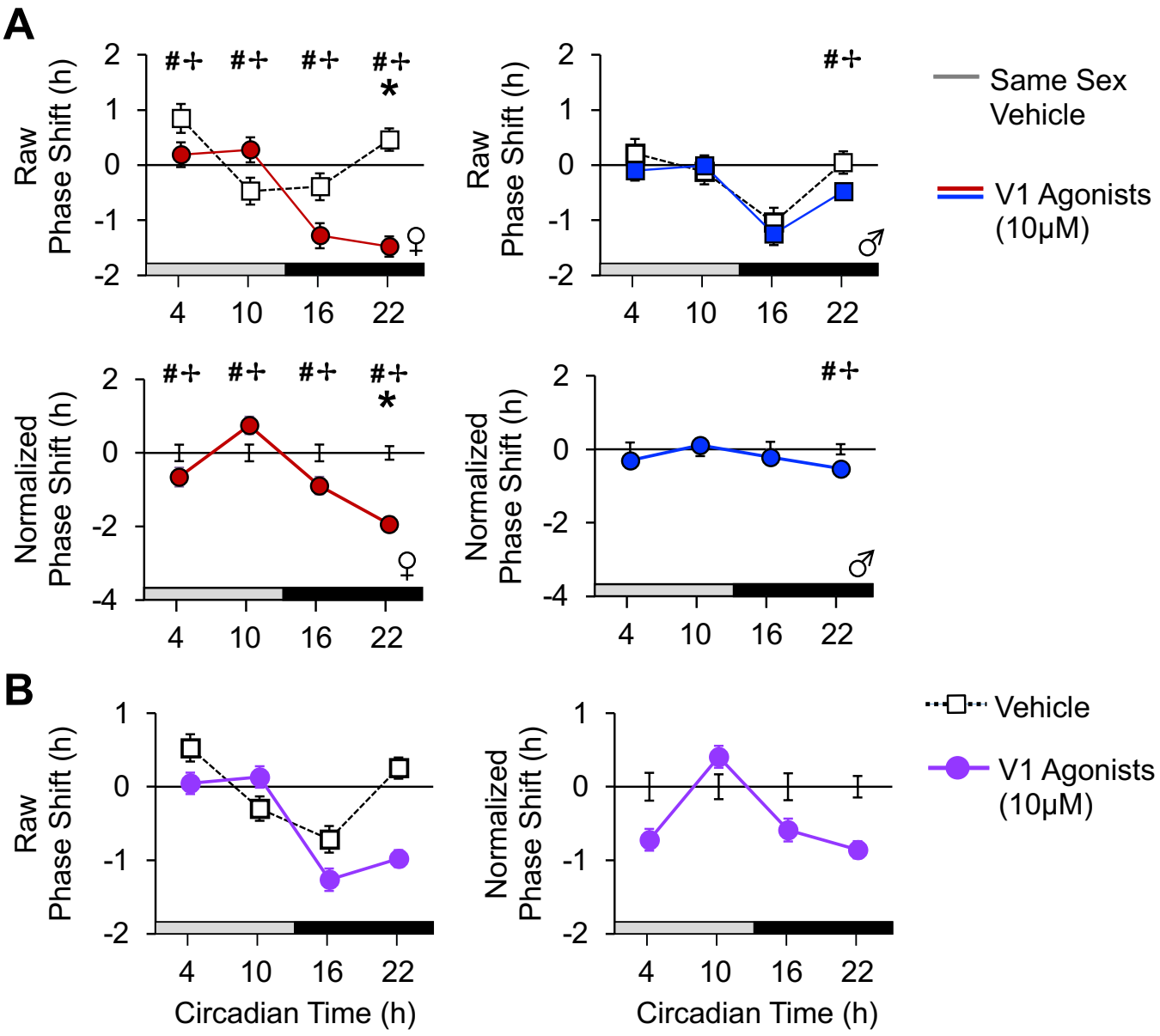
* Sex difference, p < 0.05. # Agonist different from Vehicle, p < 0.05. ‡ Inhibitor difference, p < 0.05



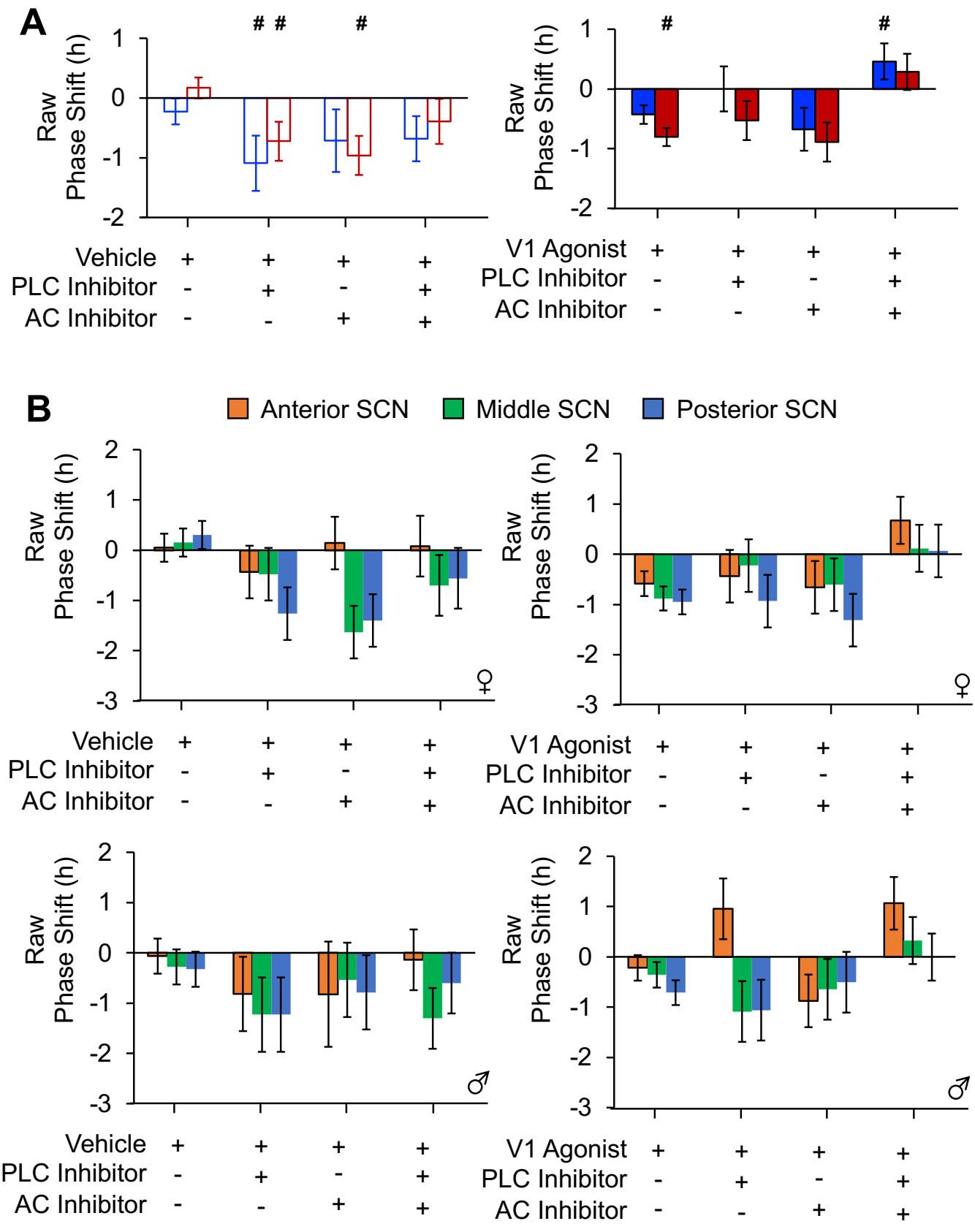
Supplemental Figure S1. V1A/B receptor agonists reset PER2::LUC rhythms in a dose- and sex-dependent manner. A. Phase shifting responses to vehicle administration. B. Phase shifting responses to vehicle and V1A/B agonist treatment divided by sex and SCN slice position. Scatterplot indicates data for individual samples. # Different from Vehicle. Estimated Marginal Means Contrasts: $p < 0.05$. ÷ Different from zero, Single sample t-test: $p < 0.05$. * Different by sex, Estimated Marginal Means Contrasts: $p < 0.05$.



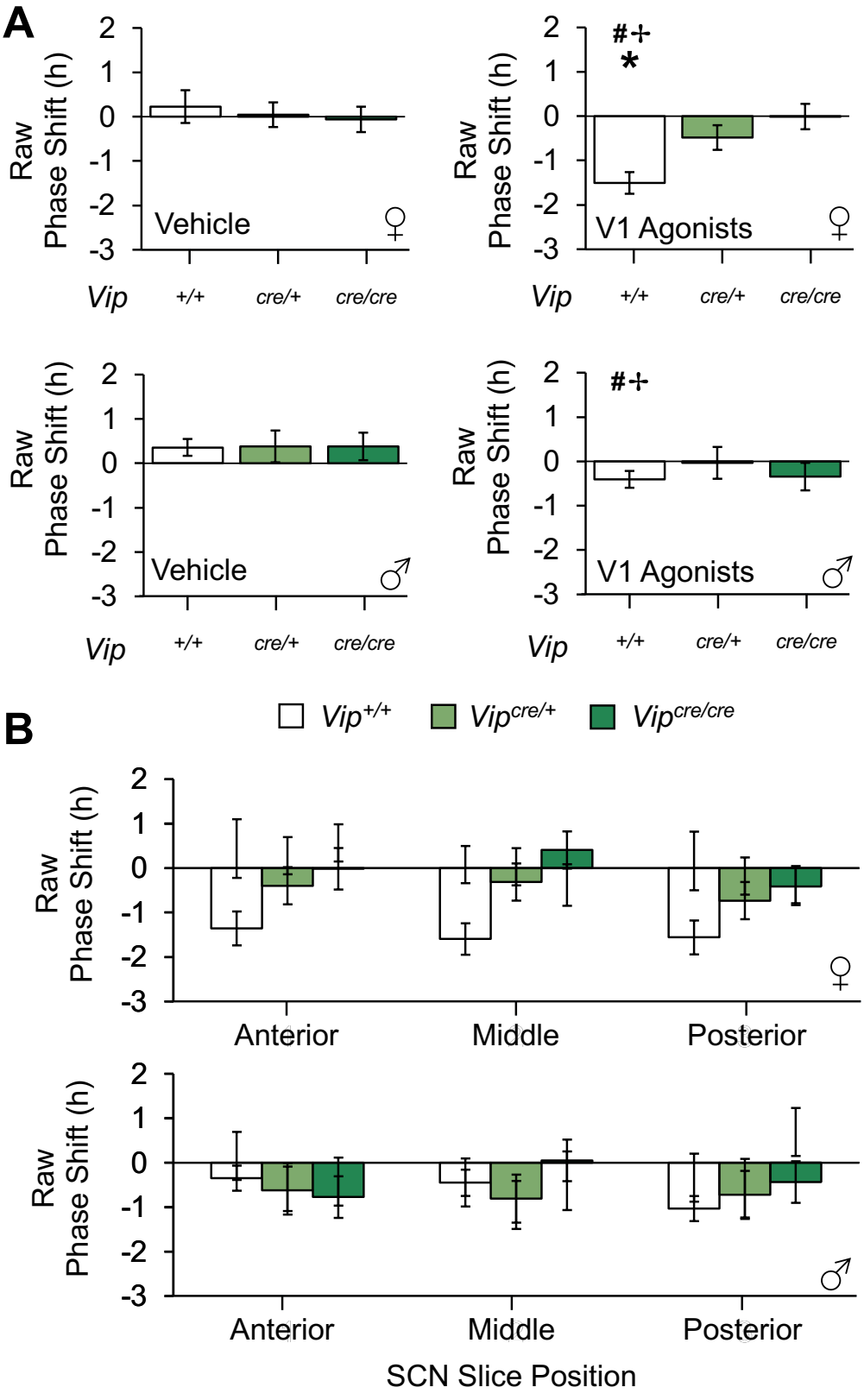
Supplemental Figure S2. SCN resetting to single V1 agonists divided by sex position.
Different from Vehicle. Estimated Marginal Means Contrasts: $p < 0.05$. + Different from zero, Single sample t-test: $p < 0.05$. * Different by sex, Estimated Marginal Means Contrasts: $p < 0.05$.



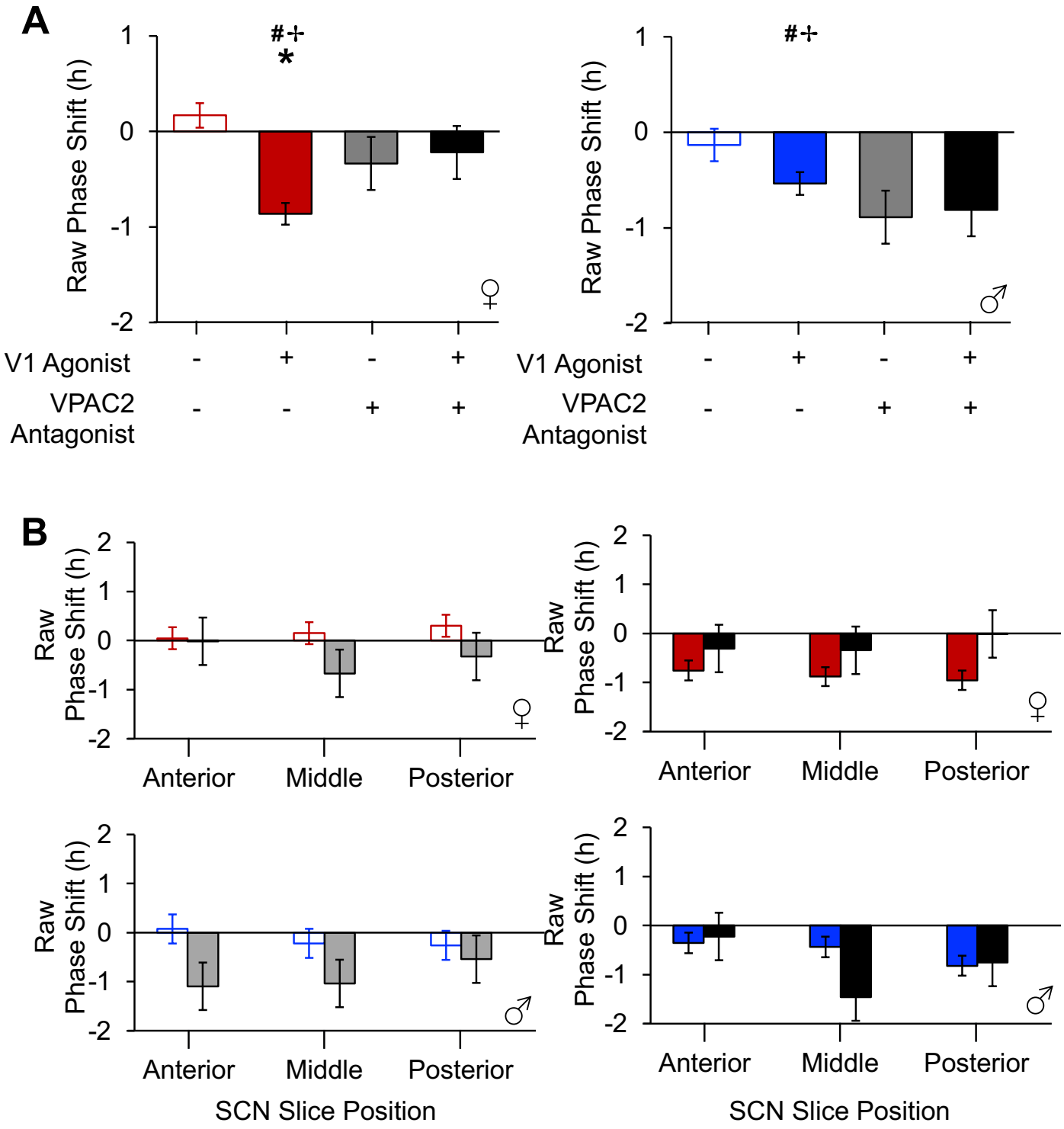
Supplemental Figure S3. SCN resetting to V1A/B agonists at different circadian times. # Different from Vehicle. Estimated Marginal Means Contrasts: $p < 0.05$. $^{+}$ Different from zero, Single sample t-test: $p < 0.05$. * Different by sex, Estimated Marginal Means Contrasts: $p < 0.05$.



Supplemental Figure S4. SCN resetting to PLC, AC, and V1 agonists. # Different from Vehicle. Estimated Marginal Means Contrasts: $p < 0.05$. ÷ Different from zero, Single sample t-test: $p < 0.05$. * Different by sex, Estimated Marginal Means Contrasts: $p < 0.05$.



Supplemental Figure S5. VIP deficiency blocks V1A/B-induced SCN resetting
Different from Vehicle. Estimated Marginal Means Contrasts: $p < 0.05$. ⁺ Different from zero, Single sample t-test: $p < 0.05$. * Different by sex, Estimated Marginal Means Contrasts: $p < 0.05$.



Supplemental Figure S6. VPAC2 antagonist blocks V1-induced resetting. A-B. VPAC2 antagonist co-administration blocked V1-induced SCN resetting. * Different by sex, Estimated Marginal Means Contrasts: $p < 0.05$. ⁺ Different from zero, Single sample t-test: $p < 0.05$ (symbols color coded in S2B based on Antagonist).