

Table S2. Summary of statistical analysis (related to Figures 1-6)

Figure 1		Sample size	Statistical test	Treatment effect		Significance
E	Activity of ventral tegmental area dopamine neurons (fiber recording, dexmedetomidine 10 µg/kg)	6 mice	Paired Student's t test	t=0.3347 df=5	P=0.751	no
G	Activity of ventral tegmental area dopamine neurons (fiber recording, dexmedetomidine 40 µg/kg)	6 mice	Paired Student's t test	t=7.458 df=5	P=0.001	**P<0.01
I	Activity of ventral tegmental area dopamine neurons (fiber recording, dexmedetomidine 100 µg/kg)	6 mice	Paired Student's t test	t=8.499 df=5	P<0.0001	****P<0.0001
K	Activity of ventral tegmental area dopamine neurons (fiber recording, dexmedetomidine 400 µg/kg)	6 mice	Paired Student's t test	t=9.539 df=5	P<0.0001	****P<0.0001
Figure 2						
D	Dopamine content in the medial prefrontal cortex (fiber recording, dexmedetomidine 10 µg/kg)	6 mice	Paired Student's t test	t=1.331 df=5	P=0.241	no
F	Dopamine content in the medial prefrontal cortex (fiber recording, dexmedetomidine 40 µg/kg)	6 mice	Paired Student's t test	t=6.651 df=5	P=0.001	**P<0.01
H	Dopamine content in the medial prefrontal cortex (fiber recording, dexmedetomidine 100 µg/kg)	6 mice	Paired Student's t test	t=5.423 df=5	P=0.002	**P<0.01
J	Dopamine content in the medial prefrontal cortex (fiber recording, dexmedetomidine 400 µg/kg)	6 mice	Paired Student's t test	t=13.9 df=5	P<0.0001	****P<0.0001
Figure 3						
D	Dopamine content in the nucleus accumbens (fiber recording, dexmedetomidine 10 µg/kg)	6 mice	Paired Student's t test	t=1.089 df=5	P=0.3258	no
F	Dopamine content in the nucleus accumbens (fiber recording, dexmedetomidine 40 µg/kg)	6 mice	Paired Student's t test	t=7.56 df=5	P=0.001	**P<0.01
H	Dopamine content in the nucleus accumbens (fiber recording, dexmedetomidine 100 µg/kg)	6 mice	Paired Student's t test	t=10.68 df=5	P<0.0001	****P<0.0001
J	Dopamine content in the nucleus accumbens (fiber recording, dexmedetomidine 400 µg/kg)	6 mice	Paired Student's t test	t=5.741 df=5	P=0.002	**P<0.01
Figure 4						
B	Excitability of ventral tegmental area dopamine neurons (patch-clamp recording, dexmedetomidine)	10 cells	Paired Student's t test	t=2.515 df=10	P=0.031	*P<0.01
D	Excitability of ventral tegmental area dopamine neurons (patch-clamp recording, dexmedetomidine)	28 cells	two-way repeated measures ANOVA	F(1,27)=34.5	P<0.0001	****P<0.0001
	Injected current(-50 pA)		Bonferroni's multiple comparisons test	95% CI of diff, -1.111 to 1.04	P>0.9999	no
	Injected current(0 pA)		Bonferroni's multiple comparisons test	95% CI of diff, -1.218 to 0.9326	P>0.9999	no
	Injected current(50 pA)		Bonferroni's multiple comparisons test	95% CI of diff, -2.397 to -0.246	P=0.007	**P<0.01
	Injected current(100 pA)		Bonferroni's multiple comparisons test	95% CI of diff, -2.433 to -0.2817	P=0.005	**P<0.01
	Injected current(150 pA)		Bonferroni's multiple comparisons test	95% CI of diff, -3.29 to -1.139	P<0.0001	****P<0.0001
	Injected current(200 pA)		Bonferroni's multiple comparisons test	95% CI of diff, -3.397 to -1.246	P<0.0001	****P<0.0001
	Injected current(250 pA)		Bonferroni's multiple comparisons test	95% CI of diff, -3.04 to -0.8888	P<0.0001	****P<0.0001
Figure 5						
B	Excitability of ventral tegmental area dopamine neurons (patch-clamp recording, dexmedetomidine + RS79948)	10 cells	Paired Student's t test	t=1.835 df=9	P=0.100	no
D	Potassium ion in the ventral tegmental area dopamine neurons (dexmedetomidine)	15 cells	two-way repeated measures ANOVA	F(1,14)=16.09	P=0.001	**P<0.01
	Voltage(0 mV)		Bonferroni's multiple comparisons test	95% CI of diff, -338.7 to 341.4	P>0.9999	no
	Voltage(10 mV)		Bonferroni's multiple comparisons test	95% CI of diff, -343.8 to 336.3	P>0.9999	no
	Voltage(20 mV)		Bonferroni's multiple comparisons test	95% CI of diff, -348.5 to 331.6	P>0.9999	no
	Voltage(30 mV)		Bonferroni's multiple comparisons test	95% CI of diff, -338.7 to 341.4	P>0.9999	no
	Voltage(40 mV)		Bonferroni's multiple comparisons test	95% CI of diff, -306.1 to 374	P>0.9999	no
	Voltage(50 mV)		Bonferroni's multiple comparisons test	95% CI of diff, -238.4 to 441.7	P>0.9999	no
	Voltage(60 mV)		Bonferroni's multiple comparisons test	95% CI of diff, -160.1 to 519.9	P>0.9999	no
	Voltage(70 mV)		Bonferroni's multiple comparisons test	95% CI of diff, -60.81 to 619.3	P=0.234	no

	Voltage(80 mV)		Bonferroni's multiple comparisons test	95% CI of diff, 69.32 to 749.4	P=0.007	**P<0.01
	Voltage(90 mV)		Bonferroni's multiple comparisons test	95% CI of diff, 228.2 to 908.2	P<0.0001	****P<0.0001
	Voltage(100 mV)		Bonferroni's multiple comparisons test	95% CI of diff, 406.2 to 1086	P<0.0001	****P<0.0001
	Voltage(110 mV)		Bonferroni's multiple comparisons test	95% CI of diff, 576.3 to 1256	P<0.0001	****P<0.0001
	Voltage(120 mV)		Bonferroni's multiple comparisons test	95% CI of diff, 717.2 to 1397	P<0.0001	****P<0.0001
	Voltage(130 mV)		Bonferroni's multiple comparisons test	95% CI of diff, 895.5 to 1576	P<0.0001	****P<0.0001
	Voltage(140 mV)		Bonferroni's multiple comparisons test	95% CI of diff, 1060 to 1740	P<0.0001	****P<0.0001
F	Potassium ion currents in the ventral tegmental area dopamine neurons (dexmedetomidine+RS79948)	10 cells	two-way repeated measures ANOVA	F (1, 9) = 4.019	P=0.076	no
Figure 6						
F	EEG delta wave group: mCherry vs. hM3Dq vs. hM4Di	12 mice	two-way repeated measures ANOVA	F(2, 33)=8.016	P=0.002	**P<0.01
	EEG delta wave group: mCherry vs. hM3Dq	12 mice	two-way repeated measures ANOVA	F(1, 22)=6.974	p=0.015	*P<0.05
	Time (1 min)		Bonferroni's multiple comparisons test	95% CI of diff, -13.29 to 14.72	P>0.9999	no
	Time (2 min)		Bonferroni's multiple comparisons test	95% CI of diff, -12.68 to 15.32	P>0.9999	no
	Time (3 min)		Bonferroni's multiple comparisons test	95% CI of diff, -7.292 to 20.71	P>0.9999	no
	Time (4 min)		Bonferroni's multiple comparisons test	95% CI of diff, -0.5017 to 27.5	P=0.076	no
	Time (5 min)		Bonferroni's multiple comparisons test	95% CI of diff, -0.02309 to 27.98	P=0.051	no
	Time (6 min)		Bonferroni's multiple comparisons test	95% CI of diff, 0.9863 to 28.99	P=0.021	*P<0.05
	Time (7 min)		Bonferroni's multiple comparisons test	95% CI of diff, 7.421 to 35.42	P<0.0001	****P<0.0001
	Time (8 min)		Bonferroni's multiple comparisons test	95% CI of diff, 3.19 to 31.19	P=0.003	**P<0.01
	Time (9 min)		Bonferroni's multiple comparisons test	95% CI of diff, 0.393 to 28.39	P=0.036	*P<0.05
	Time (10 min)		Bonferroni's multiple comparisons test	95% CI of diff, 0.869 to 28.87	P=0.023	*P<0.05
	Time (11 min)		Bonferroni's multiple comparisons test	95% CI of diff, -7.38 to 20.62	P>0.9999	no
	Time (12 min)		Bonferroni's multiple comparisons test	95% CI of diff, -1.278 to 26.72	P=0.143	no
	Time (13 min)		Bonferroni's multiple comparisons test	95% CI of diff, -1.988 to 26.01	P=0.247	no
	Time (14 min)		Bonferroni's multiple comparisons test	95% CI of diff, 1.711 to 29.71	P=0.011	*P<0.05
	Time (15 min)		Bonferroni's multiple comparisons test	95% CI of diff, 1.126 to 29.13	P=0.019	*P<0.05
	Time (16 min)		Bonferroni's multiple comparisons test	95% CI of diff, -5.219 to 22.78	P>0.9999	no
	Time (17 min)		Bonferroni's multiple comparisons test	95% CI of diff, -0.9295 to 27.07	P=0.108	no
	Time (18 min)		Bonferroni's multiple comparisons test	95% CI of diff, -0.4.081 to 23.92	P>0.9999	no
	Time (19 min)		Bonferroni's multiple comparisons test	95% CI of diff, -6.421 to 21.58	P>0.9999	no
	Time (20 min)		Bonferroni's multiple comparisons test	95% CI of diff, -7.81 to 20.19	P>0.9999	no
	Time (21 min)		Bonferroni's multiple comparisons test	95% CI of diff, -8.354 to 19.65	P>0.9999	no
	Time (22 min)		Bonferroni's multiple comparisons test	95% CI of diff, -2.593 to 25.41	P=0.386	no
	Time (23 min)		Bonferroni's multiple comparisons test	95% CI of diff, -3.114 to 24.89	P=0.559	no
	Time (24 min)		Bonferroni's multiple comparisons test	95% CI of diff, -3.308 to 24.69	P=0.639	no
	Time (25 min)		Bonferroni's multiple comparisons test	95% CI of diff, -5.743 to 22.26	P>0.9999	no
	Time (26 min)		Bonferroni's multiple comparisons test	95% CI of diff, -7.745 to 20.26	P>0.9999	no
	Time (27 min)		Bonferroni's multiple comparisons test	95% CI of diff, -9.133 to 18.87	P>0.9999	no
	Time (28 min)		Bonferroni's multiple comparisons test	95% CI of diff, -4.241 to 23.76	P>0.9999	no

	Time (29 min)		Bonferroni's multiple comparisons test	95% CI of diff, -7.577 to 20.42	P>0.9999	no
	Time (30 min)		Bonferroni's multiple comparisons test	95% CI of diff, -9.294 to 18.71	P>0.9999	no
	Time (31 min)		Bonferroni's multiple comparisons test	95% CI of diff, -7.729 to 20.27	P>0.9999	no
	Time (32 min)		Bonferroni's multiple comparisons test	95% CI of diff, -6.793 to 21.21	P>0.9999	no
	Time (33 min)		Bonferroni's multiple comparisons test	95% CI of diff, -6.781 to 21.22	P>0.9999	no
	Time (34 min)		Bonferroni's multiple comparisons test	95% CI of diff, -7.499 to 20.5	P>0.9999	no
	Time (35 min)		Bonferroni's multiple comparisons test	95% CI of diff, -8.906 to 19.1	P>0.9999	no
	Time (36 min)		Bonferroni's multiple comparisons test	95% CI of diff, -5.751 to 22.25	P>0.9999	no
	Time (37 min)		Bonferroni's multiple comparisons test	95% CI of diff, -8.296 to 19.71	P>0.9999	no
	Time (38 min)		Bonferroni's multiple comparisons test	95% CI of diff, -7.54 to 20.46	P>0.9999	no
	Time (39 min)		Bonferroni's multiple comparisons test	95% CI of diff, -6.097 to 21.9	P>0.9999	no
	Time (40 min)		Bonferroni's multiple comparisons test	95% CI of diff, -4.822 to 23.18	P>0.9999	no
	Time (41 min)		Bonferroni's multiple comparisons test	95% CI of diff, -4.523 to 23.48	P>0.9999	no
	Time (42 min)		Bonferroni's multiple comparisons test	95% CI of diff, -6.31 to 21.69	P>0.9999	no
	Time (43 min)		Bonferroni's multiple comparisons test	95% CI of diff, -6.376 to 21.62	P>0.9999	no
	Time (44 min)		Bonferroni's multiple comparisons test	95% CI of diff, -7.646 to 20.35	P>0.9999	no
	Time (45 min)		Bonferroni's multiple comparisons test	95% CI of diff, -6.546 to 21.45	P>0.9999	no
	Time (46 min)		Bonferroni's multiple comparisons test	95% CI of diff, -5.776 to 22.22	P>0.9999	no
	Time (47 min)		Bonferroni's multiple comparisons test	95% CI of diff, -5.717 to 22.28	P>0.9999	no
	Time (48 min)		Bonferroni's multiple comparisons test	95% CI of diff, -4.136 to 23.87	P>0.9999	no
	Time (49 min)		Bonferroni's multiple comparisons test	95% CI of diff, -7.621 to 20.38	P>0.9999	no
	Time (50 min)		Bonferroni's multiple comparisons test	95% CI of diff, -9.109 to 18.89	P>0.9999	no
	Time (51 min)		Bonferroni's multiple comparisons test	95% CI of diff, -5.572 to 22.43	P>0.9999	no
	Time (52 min)		Bonferroni's multiple comparisons test	95% CI of diff, -4.443 to 23.56	P>0.9999	no
	Time (53 min)		Bonferroni's multiple comparisons test	95% CI of diff, -5.621 to 22.38	P>0.9999	no
	Time (54 min)		Bonferroni's multiple comparisons test	95% CI of diff, -5.584 to 22.42	P>0.9999	no
	Time (55 min)		Bonferroni's multiple comparisons test	95% CI of diff, -5.431 to 22.57	P>0.9999	no
	Time (56 min)		Bonferroni's multiple comparisons test	95% CI of diff, -6.388 to 21.61	P>0.9999	no
	Time (57 min)		Bonferroni's multiple comparisons test	95% CI of diff, -5.358 to 22.64	P>0.9999	no
	Time (58 min)		Bonferroni's multiple comparisons test	95% CI of diff, -6.733 to 21.27	P>0.9999	no
	Time (59 min)		Bonferroni's multiple comparisons test	95% CI of diff, -4.07 to 23.93	P>0.9999	no
	Time (60 min)		Bonferroni's multiple comparisons test	95% CI of diff, -4.603 to 23.4	P>0.9999	no
	EEG delta wave group: mCherry vs. hM4Di	12 mice	two-way repeated measures ANOVA	F(1,22)=1.294	P=0.268	no
G	EEG delta wave group: mCherry vs. hM3Dq vs. hM4Di		Kruskal-Wallis one-way ANOVA		P<0.0001	****P<0.0001
H	EEG theta wave group: mCherry vs. hM3Dq vs. hM4Di	12 mice	two-way repeated measures ANOVA	F(2,33)=22.8	P<0.0001	****P<0.0001
	EEG theta wave group: mCherry vs. hM3Dq	12mice	two-way repeated measures ANOVA	F(1,22)=14.82	P=0.001	**P<0.01
	Time(1 min)		Bonferroni's multiple comparisons test	95% CI of diff, 6.164 to 19.39	P<0.0001	****P<0.0001
	Time(2 min)		Bonferroni's multiple comparisons test	95% CI of diff, 6.051 to 19.28	P<0.0001	****P<0.0001
	Time(3 min)		Bonferroni's multiple comparisons test	95% CI of diff, 8.185 to 21.42	P<0.0001	****P<0.0001

	Time(4 min)		Bonferroni's multiple comparisons test	95% CI of diff, 7.323 to 20.55	P<0.0001	****P<0.0001
	Time(5 min)		Bonferroni's multiple comparisons test	95% CI of diff, 5.766 to 19	P<0.0001	****P<0.0001
	Time(6 min)		Bonferroni's multiple comparisons test	95% CI of diff, 5.402 to 18.63	P<0.0001	****P<0.0001
	Time(7 min)		Bonferroni's multiple comparisons test	95% CI of diff, 4.663 to 17.89	P<0.0001	****P<0.0001
	Time(8 min)		Bonferroni's multiple comparisons test	95% CI of diff, 1.91 to 15.14	P=0.001	**P<0.01
	Time(9 min)		Bonferroni's multiple comparisons test	95% CI of diff, 2.117 to 15.35	P=0.001	**P<0.01
	Time(10 min)		Bonferroni's multiple comparisons test	95% CI of diff, 0.024 to 13.26	P=0.048	*P<0.05
	Time(11 min)		Bonferroni's multiple comparisons test	95% CI of diff, -1.139 to 12.09	P=0.338	no
	Time(12 min)		Bonferroni's multiple comparisons test	95% CI of diff, -0.3631 to 12.87	P=0.095	no
	Time(13 min)		Bonferroni's multiple comparisons test	95% CI of diff, -1.373 to 11.86	P=0.483	no
	Time(14 min)		Bonferroni's multiple comparisons test	95% CI of diff, -0.4201 to 12.81	P=0.105	no
	Time(15 min)		Bonferroni's multiple comparisons test	95% CI of diff, -1.081 to 12.15	P=0.309	no
	Time(16 min)		Bonferroni's multiple comparisons test	95% CI of diff, -1.878 to 11.35	P=0.997	no
	Time(17 min)		Bonferroni's multiple comparisons test	95% CI of diff, -0.1883 to 13.04	P=0.070	no
	Time(18 min)		Bonferroni's multiple comparisons test	95% CI of diff, -0.1638 to 13.07	P=0.067	no
	Time(19 min)		Bonferroni's multiple comparisons test	95% CI of diff, -0.466 to 12.77	P=0.113	no
	Time(20 min)		Bonferroni's multiple comparisons test	95% CI of diff, -0.4326 to 12.8	P=0.107	no
	Time(21 min)		Bonferroni's multiple comparisons test	95% CI of diff, -0.03116 to 13.2	P=0.053	no
	Time(22 min)		Bonferroni's multiple comparisons test	95% CI of diff, 0.880 to 14.11	P=0.009	**P<0.01
	Time(23 min)		Bonferroni's multiple comparisons test	95% CI of diff, 0.504 to 13.73	P=0.020	*P<0.05
	Time(24 min)		Bonferroni's multiple comparisons test	95% CI of diff, -1.061 to 12.17	P=0.300	no
	Time(25 min)		Bonferroni's multiple comparisons test	95% CI of diff, -0.3239 to 12.91	P=0.089	no
	Time(26 min)		Bonferroni's multiple comparisons test	95% CI of diff, -0.6855 to 12.55	P=0.1639	no
	Time(27 min)		Bonferroni's multiple comparisons test	95% CI of diff, -1.382 to 11.85	P=0.489	no
	Time(28 min)		Bonferroni's multiple comparisons test	95% CI of diff, -0.9732 to 12.26	P=0.261	no
	Time(29 min)		Bonferroni's multiple comparisons test	95% CI of diff, -1.146 to 12.09	P=0.342	no
	Time(30 min)		Bonferroni's multiple comparisons test	95% CI of diff, -1.28 to 11.95	P=0.420	no
	Time(31 min)		Bonferroni's multiple comparisons test	95% CI of diff, -2.129 to 11.1	P>0.9999	no
	Time(32 min)		Bonferroni's multiple comparisons test	95% CI of diff, -0.4179 to 12.81	P=0.104	no
	Time(33 min)		Bonferroni's multiple comparisons test	95% CI of diff, -0.322 to 12.91	P=0.089	no
	Time(34 min)		Bonferroni's multiple comparisons test	95% CI of diff, 0.151 to 13.38	P=0.038	*P<0.05
	Time(35 min)		Bonferroni's multiple comparisons test	95% CI of diff, -1.501 to 11.73	P=0.583	no
	Time(36 min)		Bonferroni's multiple comparisons test	95% CI of diff, -1.433 to 11.8	P=0.528	no
	Time(37 min)		Bonferroni's multiple comparisons test	95% CI of diff, -9845 to 12.25	P=0.266	no
	Time(38 min)		Bonferroni's multiple comparisons test	95% CI of diff, -0.2274 to 13	P=0.075	no
	Time(39 min)		Bonferroni's multiple comparisons test	95% CI of diff, -1.662 to 11.57	P=0.736	no
	Time(40 min)		Bonferroni's multiple comparisons test	95% CI of diff, -1.571 to 11.66	P=0.646	no
	Time(41 min)		Bonferroni's multiple comparisons test	95% CI of diff, -0.3116 to 12.92	P=0.087	no
	Time(42 min)		Bonferroni's multiple comparisons test	95% CI of diff, -1.564 to 11.67	P=0.639	no
	Time(43 min)		Bonferroni's multiple comparisons test	95% CI of diff, 0.102 to 13.33	P=0.041	*P<0.05

	Time(44 min)		Bonferroni's multiple comparisons test	95% CI of diff, -2.007 to 11.22	P>0.9999	no
	Time(45 min)		Bonferroni's multiple comparisons test	95% CI of diff, -2.101 to 11.13	P>0.9999	no
	Time(46 min)		Bonferroni's multiple comparisons test	95% CI of diff, -1.011 to 12.22	P=0.277	no
	Time(47 min)		Bonferroni's multiple comparisons test	95% CI of diff, -1.222 to 12.01	P=0.384	no
	Time(48 min)		Bonferroni's multiple comparisons test	95% CI of diff, -1.515 to 11.72	P=0.596	no
	Time(49 min)		Bonferroni's multiple comparisons test	95% CI of diff, -1.574 to 11.66	P=0.649	no
	Time(50 min)		Bonferroni's multiple comparisons test	95% CI of diff, -2.214 to 11.11	P>0.9999	no
	Time(51 min)		Bonferroni's multiple comparisons test	95% CI of diff, -1.476 to 11.76	P=0.562	no
	Time(52 min)		Bonferroni's multiple comparisons test	95% CI of diff, -2.41 to 10.82	P>0.9999	no
	Time(53 min)		Bonferroni's multiple comparisons test	95% CI of diff, -1.796 to 11.44	P=0.889	no
	Time(54 min)		Bonferroni's multiple comparisons test	95% CI of diff, -2.151 to 11.08	P>0.9999	no
	Time(55 min)		Bonferroni's multiple comparisons test	95% CI of diff, -1.316 to 11.92	P=0.443	no
	Time(56 min)		Bonferroni's multiple comparisons test	95% CI of diff, -2.162 to 11.07	P>0.9999	no
	Time(57 min)		Bonferroni's multiple comparisons test	95% CI of diff, -1.618 to 11.61	P=0.691	no
	Time(58 min)		Bonferroni's multiple comparisons test	95% CI of diff, -2.959 to 10.27	P>0.9999	no
	Time(59 min)		Bonferroni's multiple comparisons test	95% CI of diff, -1.901 to 11.33	P>0.9999	no
	Time(60 min)		Bonferroni's multiple comparisons test	95% CI of diff, -1.478 to 11.75	P=0.564	no
	EEG theta wave group: mCherry vs. hM4Di	12 mice	two-way repeated measures ANOVA	F(1,22) =7.348	P=0.013	*P<0.05
	Time(1 min)		Bonferroni's multiple comparisons test	95% CI of diff, -12.72 to 3.156	P>0.9999	no
	Time(2 min)		Bonferroni's multiple comparisons test	95% CI of diff, -12.44 to 3.439	P>0.9999	no
	Time(3 min)		Bonferroni's multiple comparisons test	95% CI of diff, -12.37 to 3.513	P>0.9999	no
	Time(4 min)		Bonferroni's multiple comparisons test	95% CI of diff, -13.74 to 2.14	P=0.873	no
	Time(5 min)		Bonferroni's multiple comparisons test	95% CI of diff, -13.51 to 2.365	P>0.9999	no
	Time(6 min)		Bonferroni's multiple comparisons test	95% CI of diff, -12.89 to 2.992	P>0.9999	no
	Time(7 min)		Bonferroni's multiple comparisons test	95% CI of diff, -10.99 to 4.891	P>0.9999	no
	Time(8 min)		Bonferroni's multiple comparisons test	95% CI of diff, -12.34 to 3.537	P>0.9999	no
	Time(9 min)		Bonferroni's multiple comparisons test	95% CI of diff, -11.83 to 4.052	P>0.9999	no
	Time(10 min)		Bonferroni's multiple comparisons test	95% CI of diff, -12.16 to 3.72	P>0.9999	no
	Time(11 min)		Bonferroni's multiple comparisons test	95% CI of diff, -11.68 to 4.198	P>0.9999	no
	Time(12 min)		Bonferroni's multiple comparisons test	95% CI of diff, -11.64 to 4.236	P>0.9999	no
	Time(13 min)		Bonferroni's multiple comparisons test	95% CI of diff, -12.44 to 3.442	P>0.9999	no
	Time(14 min)		Bonferroni's multiple comparisons test	95% CI of diff, -12.2 to 3.676	P>0.9999	no
	Time(15 min)		Bonferroni's multiple comparisons test	95% CI of diff, -12.14 to 3.737	P>0.9999	no
	Time(16 min)		Bonferroni's multiple comparisons test	95% CI of diff, -11.87 to 4.011	P>0.9999	no

	Time(17 min)		Bonferroni's multiple comparisons test	95% CI of diff, -12.24 to 3.644	P>0.9999	no
	Time(18 min)		Bonferroni's multiple comparisons test	95% CI of diff, -11.67 to 4.212	P>0.9999	no
	Time(19 min)		Bonferroni's multiple comparisons test	95% CI of diff, -11.72 to 4.164	P>0.9999	no
	Time(20 min)		Bonferroni's multiple comparisons test	95% CI of diff, -13.02 to 2.858	P>0.9999	no
	Time(21 min)		Bonferroni's multiple comparisons test	95% CI of diff, -12.56 to 3.323	P>0.9999	no
	Time(22 min)		Bonferroni's multiple comparisons test	95% CI of diff, -12 to 3.882	P>0.9999	no
	Time(23 min)		Bonferroni's multiple comparisons test	95% CI of diff, -11.93 to 3.948	P>0.9999	no
	Time(24 min)		Bonferroni's multiple comparisons test	95% CI of diff, -13.24 to 2.642	P>0.9999	no
	Time(25 min)		Bonferroni's multiple comparisons test	95% CI of diff, -12.58 to 3.301	P>0.9999	no
	Time(26 min)		Bonferroni's multiple comparisons test	95% CI of diff, -14.21 to 1.672	P=0.497	no
	Time(27 min)		Bonferroni's multiple comparisons test	95% CI of diff, -14.25 to 1.633	P=0.474	no
	Time(28 min)		Bonferroni's multiple comparisons test	95% CI of diff, -13.21 to 2.665	P>0.9999	no
	Time(29 min)		Bonferroni's multiple comparisons test	95% CI of diff, -13.04 to 2.836	P>0.9999	no
	Time(30 min)		Bonferroni's multiple comparisons test	95% CI of diff, -13.37 to 2.507	P>0.9999	no
	Time(31 min)		Bonferroni's multiple comparisons test	95% CI of diff, -14.01 to 1.872	P=0.636	no
	Time(32 min)		Bonferroni's multiple comparisons test	95% CI of diff, -14.66 to 1.218	P=0.279	no
	Time(33 min)		Bonferroni's multiple comparisons test	95% CI of diff, -14.02 to 1.863	P=0.629	no
	Time(34 min)		Bonferroni's multiple comparisons test	95% CI of diff, -13.49 to 2.391	P>0.9999	no
	Time(35 min)		Bonferroni's multiple comparisons test	95% CI of diff, -13.75 to 2.129	P=0.862	no
	Time(36 min)		Bonferroni's multiple comparisons test	95% CI of diff, -15.54 to 0.338	P=0.083	no
	Time(37 min)		Bonferroni's multiple comparisons test	95% CI of diff, -14.7 to 1.181	P=0.265	no
	Time(38 min)		Bonferroni's multiple comparisons test	95% CI of diff, -13.84 to 2.041	P=0.778	no
	Time(39 min)		Bonferroni's multiple comparisons test	95% CI of diff, -15.01 to 0.873	P=0.176	no
	Time(40 min)		Bonferroni's multiple comparisons test	95% CI of diff, -14.96 to 0.9225	P=0.188	no
	Time(41 min)		Bonferroni's multiple comparisons test	95% CI of diff, -13.13 to 2.751	P>0.9999	no
	Time(42 min)		Bonferroni's multiple comparisons test	95% CI of diff, -14.66 to 1.221	P=0.280	no
	Time(43 min)		Bonferroni's multiple comparisons test	95% CI of diff, -13.45 to 2.429	P>0.9999	no
	Time(44 min)		Bonferroni's multiple comparisons test	95% CI of diff, -14.97 to 0.9133	P=0.186	no
	Time(45 min)		Bonferroni's multiple comparisons test	95% CI of diff, -15.19 to 0.6876	P=0.136	no
	Time(46 min)		Bonferroni's multiple comparisons test	95% CI of diff, -13.39 to 2.489	P>0.9999	no
	Time(47 min)		Bonferroni's multiple comparisons test	95% CI of diff, -15.75 to 0.1263	P=0.060	no
	Time(48 min)		Bonferroni's multiple comparisons test	95% CI of diff, -15.25 to 0.6249	P=0.124	no
	Time(49 min)		Bonferroni's multiple comparisons test	95% CI of diff, -13.57 to 2.31	P>0.9999	no
	Time(50 min)		Bonferroni's multiple comparisons test	95% CI of diff, -14.48 to 1.394	P=0.351	no

	Time(51 min)		Bonferroni's multiple comparisons test	95% CI of diff, -14.95 to 0.9261	P=0.189	no
	Time(52 min)		Bonferroni's multiple comparisons test	95% CI of diff, -14.7 to 1.178	P=0.265	no
	Time(53 min)		Bonferroni's multiple comparisons test	95% CI of diff, -16.08 to -0.198	P=0.037	*P<0.05
	Time(54 min)		Bonferroni's multiple comparisons test	95% CI of diff, -15.88 to -0.002	P=0.050	no
	Time(55 min)		Bonferroni's multiple comparisons test	95% CI of diff, -14.36 to 1.518	P=0.411	no
	Time(56 min)		Bonferroni's multiple comparisons test	95% CI of diff, -14.65 to 1.231	P=0.284	no
	Time(57 min)		Bonferroni's multiple comparisons test	95% CI of diff, -13.89 to 1.99	P=0.732	no
	Time(58 min)		Bonferroni's multiple comparisons test	95% CI of diff, -16.01 to -0.126	P=0.041	*P<0.05
	Time(59 min)		Bonferroni's multiple comparisons test	95% CI of diff, -15.43 to -0.449	P=0.097	no
	Time(60 min)		Bonferroni's multiple comparisons test	95% CI of diff, -14.77 to 1.113	P=0.243	no
I	EEG theta wave group: mCherry vs. hM3Dq vs. hM4Di		Kruskal-Wallis one-way ANOVA		P<0.0001	****P<0.0001

Summary of statistical analysis related to Figures 1-6.

EEG, electroencephalography; hM3Dq, Gq-coupled human M3 muscarinic receptor; hM4Di, Gi-coupled human M4 muscarinic receptor.