

**Supplementary Table 3. Effect of 8-OH-DPAT on firing properties of SNr neurons.**

Sham	8-OH-DPAT ( $\mu\text{g/kg}$ ) i.v.					WAY-101635 ( $\text{mg/kg}$ ) i.v.	
	Basal	20	40	80	160	0.5	1
<b>Firing rate (Hz)</b>	20.3 $\pm$ 1.5	15.8 $\pm$ 1.7	13.0 $\pm$ 1.1	9.4 $\pm$ 1.9	10.3 $\pm$ 1.8	23.9 $\pm$ 7.6	22.1 $\pm$ 7.3
<b>Coefficient of variation</b>	31.0 $\pm$ 6.0	29.2 $\pm$ 3.7	32.9 $\pm$ 4.4	28.2 $\pm$ 4.9	40.7 $\pm$ 7.2	33.7 $\pm$ 8.5	40.8 $\pm$ 15.1
<b>Neurons exhibiting burst firing pattern (%)</b>	40	20 <sup>&amp;</sup>	0 <sup>&amp;</sup>	0 <sup>&amp;</sup>	40	0 <sup>&amp;</sup>	0 <sup>&amp;</sup>
<b>Number of bursts</b>	9.3 $\pm$ 8.8	2	0	0	7.3 $\pm$ 6.3	0	0
<b>Duration of burst (ms)</b>	0.1 $\pm$ 0.1	6.8	0	0	0.2 $\pm$ 0.1	0	0
<b>N° spikes/burst</b>	4.3 $\pm$ 3.4	154	0	0	2.3 $\pm$ 12	0	0
<b>Recurrence of burst (n° burst/min)</b>	5.6 $\pm$ 5.3	1.25	0	0	4.3 $\pm$ 3.8	0	0
<b>Intraburst frequency (spike/s)</b>	31.2 $\pm$ 15.6	21.21	0	0	34.0 $\pm$ 29.0	0	0

6-OHDA	8-OH-DPAT ( $\mu\text{g/kg}$ ) i.v.					WAY-101635 ( $\text{mg/kg}$ ) i.v.	
	Basal	20	40	80	160	0.5	1
<b>Firing rate (Hz)</b>	25.3 $\pm$ 3.1	27.9 $\pm$ 4.7	25.6 $\pm$ 4.1	22.4 $\pm$ 3.7	20.9 $\pm$ 3.6	17.7 $\pm$ 4.2	17.4 $\pm$ 4.4
<b>Coefficient of variation</b>	33.3 $\pm$ 11.2	33.3 $\pm$ 9.7	29.6 $\pm$ 9.0	31.7 $\pm$ 11.9	35.3 $\pm$ 9.1	29.8 $\pm$ 5.1	38.1 $\pm$ 7.0
<b>Neurons exhibiting burst firing pattern (%)</b>	50	50	33.3 <sup>&amp;</sup>	33.3 <sup>&amp;</sup>	100 <sup>&amp;</sup>	50	66.6
<b>Number of bursts</b>	11.5 $\pm$ 5.9	2.5 $\pm$ 2.1	1.7 $\pm$ 1.5	1.8 $\pm$ 1.6	3.5 $\pm$ 1.3	1.0 $\pm$ 0.5	1.9 $\pm$ 1.0
<b>Duration of burst (ms)</b>	1.1 $\pm$ 1.0	0.2 $\pm$ 0.1	0.1 $\pm$ 0.0	0.4 $\pm$ 0.3	0.4 $\pm$ 0.1	0.1 $\pm$ 0.0	4.6 $\pm$ 3.7
<b>N° spikes/burst</b>	7.1 $\pm$ 3.9	4.9 $\pm$ 2.5	2.8 $\pm$ 1.9	9.6 $\pm$ 7.2	8.3 $\pm$ 2.2	3.6 $\pm$ 2.1	87.7 $\pm$ 47.6
<b>Recurrence of burst (n° burst/min)</b>	3.9 $\pm$ 3.4	1.5 $\pm$ 1.2	1.0 $\pm$ 0.9	1.1 $\pm$ 1.0	2.1 $\pm$ 0.8	0.7 $\pm$ 0.3	1.1 $\pm$ 0.6
<b>Intraburst frequency (spike/s)</b>	25.8 $\pm$ 12.6	25.0 $\pm$ 13.7	17.6 $\pm$ 12.9	8.2 $\pm$ 5.3	45.7 $\pm$ 8.1	26.9 $\pm$ 13.1	40.4 $\pm$ 19.2

6-OHDA L-DOPA	8-OH-DPAT ( $\mu\text{g/kg}$ ) i.v.					WAY-101635 ( $\text{mg/kg}$ ) i.v.	
	Basal	20	40	80	160	0.5	1
<b>Firing rate (Hz)</b>	32.0 $\pm$ 3.1	31.5 $\pm$ 4.6	30.7 $\pm$ 5.9	29.0 $\pm$ 5.8	28.9 $\pm$ 6.6	23.9 $\pm$ 3.8	21.9 $\pm$ 4.1
<b>Coefficient of variation</b>	46.0 $\pm$ 17.2	38.4 $\pm$ 13.4	45.7 $\pm$ 18.3	50.5 $\pm$ 21.0	51.1 $\pm$ 18.4	36.2 $\pm$ 7.7	25.1 $\pm$ 1.8
<b>Neurons exhibiting burst firing pattern (%)</b>	60 <sup>s</sup>	40 <sup>&amp;</sup>	40 <sup>&amp;</sup>	40 <sup>&amp;</sup>	80 <sup>&amp;</sup>	40 <sup>&amp;</sup>	20 <sup>&amp;</sup>
<b>Number of bursts</b>	40.3 $\pm$ 25.8	32.3 $\pm$ 28.7	39.3 $\pm$ 37.9	37.3 $\pm$ 34.3	42.5 $\pm$ 34.3	2.3 $\pm$ 0.8	3
<b>Duration of burst (ms)</b>	2.4 $\pm$ 2.3	0.1 $\pm$ 0.1	0.1 $\pm$ 0.1	0.6 $\pm$ 0.5	0.7 $\pm$ 0.5	2.3 $\pm$ 1.9	0.32
<b>N° spikes/burst</b>	19.0 $\pm$ 9.2	4.9 $\pm$ 3.3	4.4 $\pm$ 2.6	21.0 $\pm$ 14.8	21.0 $\pm$ 14.8	60.3 $\pm$ 40.2	11.3
<b>Recurrence of burst (n° burst/min)</b>	17.7 $\pm$ 16.8	29.1 $\pm$ 17.1	23.3 $\pm$ 22.5	25.6 $\pm$ 20.6	25.6 $\pm$ 20.6	1.4 $\pm$ 0.5	1.8
<b>Intraburst frequency (spike/s)</b>	48.2 $\pm$ 20.0	37.1 $\pm$ 25.5	38.0 $\pm$ 25.0	46.7 $\pm$ 22.2	45.9 $\pm$ 22.7	27.2 $\pm$ 10.7	39.7

Data from the sham group (n = 5), 6-OHDA (n = 5), and 6-OHDA L-DOPA (n = 5) expressing the firing rate, coefficient of variation, percentage of neurons exhibiting burst firing pattern and burst related parameters defined as number of bursts, mean duration of the burst, mean number of spikes per burst, the recurrence of burst per min, and intraburst frequency or the interval of spike patterns within bursts. Burst activity was detected in the spike train in a period of 90s based following Surprise method. <sup>&</sup>p < 0.05 vs baseline and <sup>s</sup>p < 0.05 vs sham (Fisher's exact test).