

SUPPLEMENTARY MATERIAL TO THE MANUSCRIPT:

“The effect of the general anesthetic sevoflurane on neurotransmission: an experimental and computational study”

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Figure SM-1

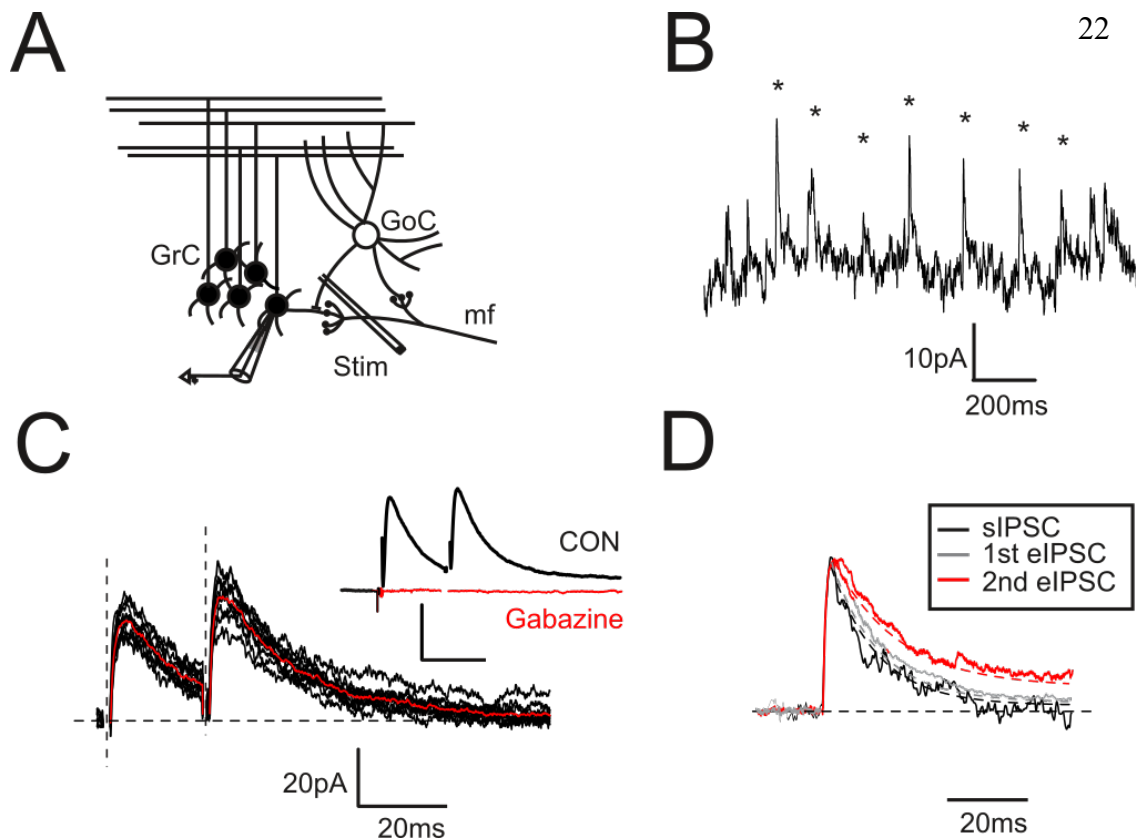


Figure SM-1. Inhibitory neurotransmission and sevoflurane. A. The stimulating electrode (stim) is placed in the surrounding of the recorded GrC in order to elicit action potentials in the axonal plexus of the GoC. B. The spontaneous activity (spontaneous Inhibitory Post-Synaptic Currents, sIPSCs) recorded from a GrC voltage clamped at 0 mV reflects the autorhythmic discharge of GoCs. The asterisks indicate spontaneous events evenly spaced and induced by the regular firing of a GoC. C. eIPSCs evoked by 2 pulses at 50 Hz (vertical lines). eIPSCs were elicited in the supra-minimal range so that sIPSCs amplitudes (9.4 ± 1.3 pA; $n = 9$ cells and $n = 198$ events) were significantly smaller than eIPSCs (28.3 ± 5.9 pA, $p < 0.01$; $n = 9$). The red trace shows the average of 10 consecutive acquisitions (black traces). Inset. The application of Gabazine (red) completely abolished eIPSCs ($n=5$). D. Normalized spontaneous (black trace) and evoked IPSCs (gray trace 1st response, red trace 2nd response). Note the similar kinetics of the 1st evoked and spontaneous IPSC. The 2nd eIPSC has a longer decay phase probably due to the neurotransmitter accumulation in the glomerular space.

Supplementary tables

	Control	Sevoflurane	Wash out
V_0	-63.2 ± 2.1 mV	-61.9 ± 2.2 mV	-62.7 ± 1.9 mV
R_{input}	1.9 ± 0.1 G Ω	1.9 ± 0.4 G Ω	1.8 ± 0.3 G Ω

Table SM-1. Zero-current potential (V_0) and Input Resistance (R_{input}) of granule cells in control condition and during perfusion with sevoflurane ($n = 7$).

<i>Parameter</i>	CONTROL	SEVOFLURANE
<i>Release probability</i>	<u>0.35</u>	<u>0.5</u>
<i>$\alpha 1$ GABA conductance (pS)</i>	918.807	2500

<i>$\alpha 1$ GABA conductance (pS)</i>	<i>132.842</i>	<i>800</i>
<i>a1 activation kinetics</i>	<i>0.414</i>	<i>0.514</i>
<i>b1 activation kinetics</i>	<i>0.03</i>	<i>0.3</i>
<i>R1 activation kinetics</i>	<i>$7 * 10^{-4}$;</i>	<i>$7 * 10^{-3}$;</i>
<i>R2 activation kinetics</i>	<i>0.14208</i>	<i>1.4208</i>
<i>d2 activation kinetics</i>	<i>3,4898</i>	<i>10</i>
<i>d3 activation kinetics</i>	<i>21,703</i>	<i>30</i>
<i>Koff deactivation kinetics</i>	<i>2</i>	<i>1</i>

Table SM-2 Synaptic model parameters