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Supplemental Information

A Hippocampus-Accumbens Tripartite Neuronal Motif

Guides Appetitive Memory in Space

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Table S1. Intrinsic membrane properties of NAc neurons (related to Figure 6).

	dCA1-responding	Not dCA1-responding	p
MSN			
Resting membrane potential (mV)	-78.8 ± 1.8	-78.4 ± 2.3	0.98
Input resistance (MΩ)	98.1 ± 11.0	88.5 ± 9.1	0.69
Spike rate (+300pA) (Hz)	18.7 ± 2.9	20.0 ± 2.6	0.82
First ISI (ms)	29.9 ± 4.1	31.2 ± 7.1	0.65
Second ISI (ms)	28.2 ± 3.1	36.3 ± 8.0	0.61
First spike amplitude (mV)	73.1 ± 3.6	71.4 ± 3.6	0.78
Second spike amplitude (mV)	56.7 ± 4.0	58.9 ± 5.3	0.82
First spike duration (ms)	1.9 ± 0.1	2.1 ± 0.2	0.36
Second spike duration (ms)	3.0 ± 0.3	2.9 ± 0.2	0.91
PV⁺ interneuron			
Resting membrane potential (mV)	-71.0 ± 2.7	-64.0 ± 3.1	0.20
Input resistance (MΩ)	159.2 ± 28.4	161.0 ± 55.1	0.79
Spike rate (+60pA) (Hz)	57.5 ± 18.6	41.1 ± 16.1	0.28
First ISI (ms)	14.9 ± 3.9	17.8 ± 2.2	0.63
Second ISI (ms)	12.1 ± 3.3	10.5 ± 2.7	0.79
First spike amplitude (mV)	80.5 ± 4.5	99.5 ± 14.9	0.28
Second spike amplitude (mV)	73.0 ± 4.7	87.2 ± 15.7	0.57
First spike duration (ms)	0.8 ± 0.1	1.3 ± 0.3	0.85
Second spike duration (ms)	0.9 ± 0.2	1.4 ± 0.3	0.41
non-PV⁺ interneuron			
Resting membrane potential (mV)	n/a	-65.0 ± 1.4	
Input resistance (MΩ)	n/a	289.1 ± 28.1	
Spike rate (+300pA) (Hz)	n/a	12.1 ± 2.6	
First ISI (ms)	n/a	29.9 ± 14.4	
Second ISI (ms)	n/a	29.4 ± 8.2	
First spike amplitude (mV)	n/a	68.5 ± 5.8	
Second spike amplitude (mV)	n/a	48.0 ± 4.0	
First spike duration (ms)	n/a	1.7 ± 0.4	
Second spike duration (ms)	n/a	2.0 ± 0.4	

Data are mean ± SEM; statistical comparisons by Mann-Whitney

Table S2. List of antibodies (related to STAR Methods)

Figure	Primary antibodies			Secondary antibodies		
	Antibody	Dilut.	Source	Antibody	Dilut.	Source
3	Rb α -wfs1	1:500	Proteintech Group Cat# 11558-1-AP, RRID:AB_2216046	Dk α -Rb Cy3	1:1000	Jackson ImmunoResearch Labs Cat# 711-165-152, RRID:AB_2307443
5	Rb α -CR	1:1000	Synaptic Systems 214102 RRID:AB_2228331	Dk α -Rb 488	1:250	Thermo Fisher Scientific Cat# A-21206, RRID:AB_2535792
5, 6	Gp α -PV	1:1000	Synaptic Systems 195004 RRID:AB_2156476	Dk α -GP AMCA Dk α -GP Cy3 Gt α -Gp 647	1:1000 1:1000 1:500	Jackson ImmunoResearch Labs Cat# 706-155-148, RRID:AB_2340458 Thermo Fisher Scientific Cat# A-21450, RRID:AB_2735091
S6	Rb α -NOS	1:1000	Millipore Cat# AB5380, RRID:AB_91824	Dk α -Rb 488	1:500	Thermo Fisher Scientific Cat# A-21206, RRID:AB_2535792
S6	Ms α -ChAT	1:500	Gift C. Cozzari	Dk α -Ms 647	1:250	Jackson ImmunoResearch Labs Cat# 715-605-151, RRID:AB_2340863
1, 4, 5, S1, S6	Rat α -GFP	1:1000	Nacalai Tesque Cat# 04404-84, RRID:AB_10013361	Gt α -Rat (Biotinylated)	1:300	Vector Laboratories Cat# BA-9400, RRID:AB_2336202
5, S6	Gp α -PV	1:1000	Synaptic Systems 195004 RRID:AB_2156476	Gt α -Gp (1.4nm gold-conjugated)	1:300	Nanoprobes
6	Chk α -GFP	1:1000	Aves Labs Cat# GFP-1020, RRID:AB_10000240	Gt α -Chk 488	1:500	Thermo Fisher Scientific Cat# A-11039, RRID:AB_2534096
6	Rat α -RFP	1:1000	ChromoTek Cat# 5f8-100, RRID:AB_2336064	Gt α -Rat 555	1:500	Thermo Fisher Scientific Cat# A-21434, RRID:AB_2535855

Abbreviations: Dilut.: Dilution; AMCA: 7-amino-4-methylcoumarin-3-acetic acid; ChAT: choline acetyltransferase; Chk: chicken; CR: calretinin; Dk: donkey; GFP: green fluorescent protein; Gt: goat; Gp, guinea pig; NOS: neuronal isoform of nitric oxide synthase; PV: parvalbumin; Rb, rabbit; RFP: red fluorescent protein.