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Expression level of MSN markers in D1^{NAc}-VM and D1^{NAc}-VP

Neuronal type	D1-MSN						D2-MSN					
	Tac1	Pdyn	Chrm4	Foxp1	Isl1	Slc35d3	Adora2a	Sp9	Penk	Gpr52	Adk	
D1 ^{NAc} -VM	97.0±1.7	99.5±0.5	99.0±1.1	100.0±0.0	100.0±0.0	100.0±0.0	0.0±0.0	0.0±0.0	0.0±0.0	0.3±0.6	0.0±0.0	
D1 ^{NAc} -VP	79.3±3.1**	77.0±5.1*	99.0±0.5	100.0±0.0	99.7±0.3	100.0±0.0	1.0±0.6	1.8±0.6	1.9±0.8	1.4±0.8	1.6±0.5	

*p<0.05, **p<0.01.

Supplementary information, Fig. 8 Expression of D1- and D2-MSN markers in D1^{NAc-VM} and D1^{NAc-VP} neurons.

a, Representative confocal images of eGFP expression (Green), smFISH of the markers (red) and *DrdI* (Blue) in the NAc of C57 mice with the injection of *AAV_{2/retro}-hSyn-eGFP* into the VP or VM. Scale bar: 25 μ m. **b**, Violin plot of D1-MSN and D2-MSN marker expression in transcriptome analysis [Negative binomial generalized linear models, D1^{NAc-VM} n = 120 cells, D1^{NAc-VP} n = 182 cells, see Statistical Table]. *** $p < 0.001$. **c**, Percentage of triple positive cells in the NAc out of *DrdI*⁺ eGFP⁺ cells. [Two-tailed Student's *t*-test, *Tac1*: $t(6) = -5.036$, $p = 0.00237$; *Pdyn*: $t(5) = -3.755$, $p = 0.013$]. * $p < 0.05$, ** $p < 0.01$. Related to Figure 4.