



Supplementary information, Fig. 5 Tracing inputs to D1^{NAc-VM} and D1^{NAc-VP} neurons defined by their output site.

a, Schematic of rabies virus-based monosynaptic tracing. *AAV9-EF1 α -DIO-mCherry-F2A-TVA* and *AAV9-EF1 α -DIO-RVG* were injected unilaterally in the NAc of *D1-* or *D2-Cre* mice. Two weeks later, *RV-ENVA-deltaG-dsRed* (RVdG) was injected into the VM or VP. b, Brain-wide quantification of inputs to D1^{NAc-VM} and D1^{NAc-VP} neurons [D1^{NAc-VM} n = 6, D1^{NAc-VP} n = 6, Two-tailed *Student's t*-test, PrL: $t(10) = 2.457, p = 0.034$; Thalamus: $t(10) = -2.293, p = 0.044$; Mann-Whitney U test, IL: $Z = -2.882, p = 0.0022$; BLA: $Z = 2.242, p = 0.026$.] * $p < 0.05$, ** $p < 0.01$ vs D1^{NAc-VP}, # $p < 0.05$, ## $p < 0.01$ vs D2^{NAc-VP}. Data are presented as a percentage of total input counted in each individual brain. Abbreviations of brain region shown in legend of Extended Data Fig. 4c, Representative images of different input brain regions. The dsRed⁺ cells represent individual neurons sending monosynaptic input to D1^{NAc-VM} or D1^{NAc-VP} neurons in the NAc. Scale bar: 100 μ m. NAc, nucleus accumbens; VP, ventral pallidum; S, subiculum; IL, infralimbic cortex; PrL, prelimbic cortex; BLA, basolateral amygdala; LEC, lateral entorhinal cortex; vCA1, ventral hippocampal; PRh, perirhinal cortex; LS, lateral septal nucleus; ECT, entorhinal cortex; ACC, anterior cingulate cortex; BNST, bed nucleus of the stria terminalis; LH, lateral hypothalamus; Pir, posterior insular cortex; VM, ventral mesencephalon; PVT, paraventricular nucleus of the thalamus; PHb, perihabenular nucleus. Related to Figure 4.