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**Supplemental Information**

**Dopamine Cells Differentially Regulate Striatal  
Cholinergic Transmission across Regions  
through Corelease of Dopamine and Glutamate**

**Yuan Cai and Christopher P. Ford**

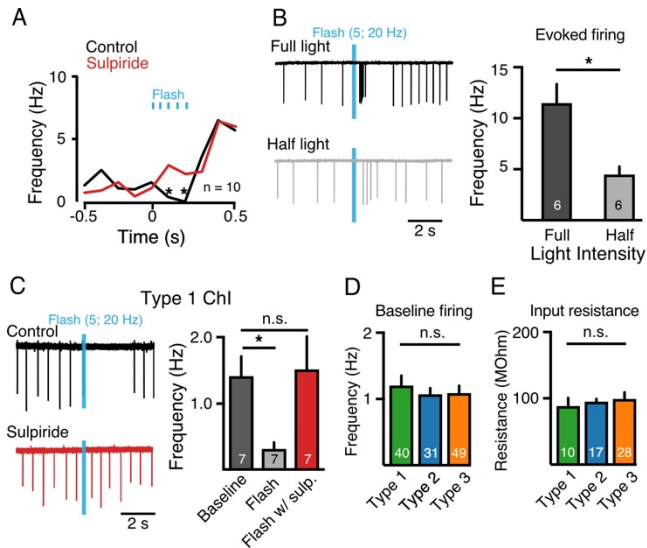
## **Supplemental Materials**

### **Dopamine cells differentially regulate striatal cholinergic transmission across regions through corelease of dopamine and glutamate**

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**Supplemental Figure 1. (Associated with Figure 1)**

(A) Expanded time scale population peristimulus histograms illustrating the brief, sulpiride-sensitive pause in DLS ChI firing post flash.

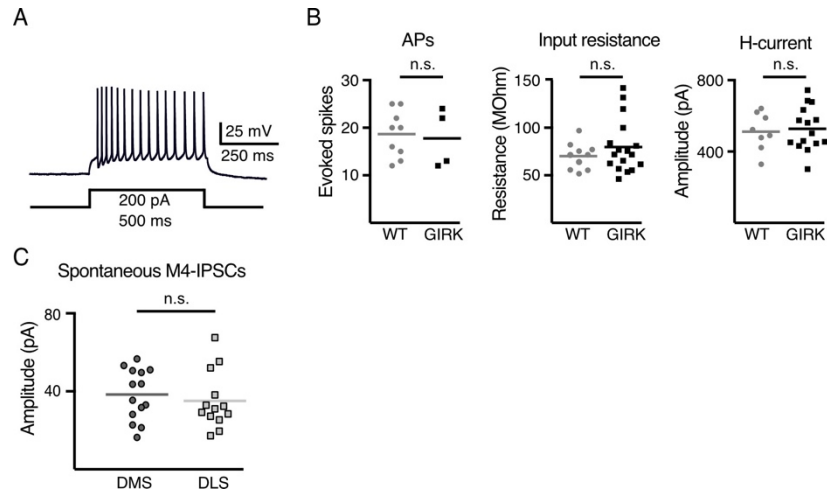
(B) Left: Example traces of cell-attached recordings from ChIs stimulated with full or half of the light intensity. Right: Summary of the evoked firing frequency in ChIs.

(C) Left: Example traces of cell-attached recordings from a type 1 ChI; right: Summary of the effect of sulpiride (500nM) on post flash frequencies in type 1 ChIs (baseline:  $1.4 \pm 0.3$  Hz; control post flash:  $0.3 \pm 0.1$  Hz; sulpiride post flash:  $1.5 \pm 0.5$  Hz,  $n = 7$ . baseline vs. control post flash  $p < 0.05$ ; baseline vs. sulpiride post flash  $p > 0.05$ . Friedman test).

(D) Summary of baseline firing frequencies in type 1, 2 and 3 ChIs.

(E) Summary of input resistances in type 1, 2 and 3 ChIs.

Summary data are mean  $\pm$  SEM. \* =  $p < 0.05$ .



**Supplemental Figure 2. (Associated with Figure 5)**

(A) An example trace of current-clamp recording from a ChI with a 200 pA current injection (the cell is at its resting membrane potential).

(B) Summary showing no differences in evoked APs (left), input resistances (middle) or H-currents (right,  $V_{\text{hold}} = -60$  mV,  $-30$  mV hyperpolarization for 5 s) of ChIs in GIRK injected and non-injected slices.

(C) Amplitude of spontaneous M4-IPSCs in dMSNs in the DMS and DLS.