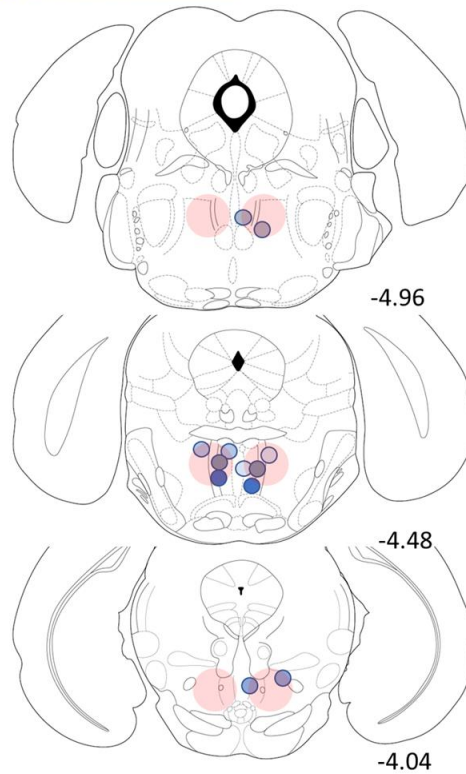
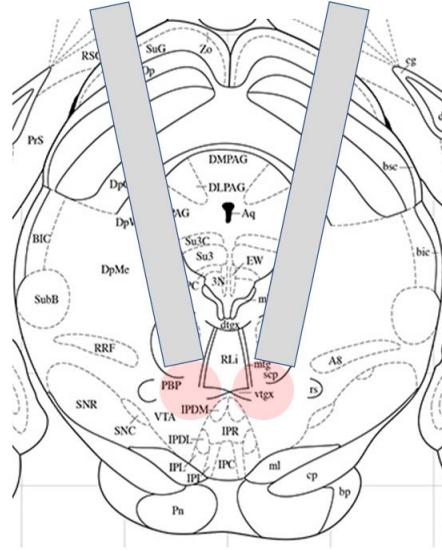
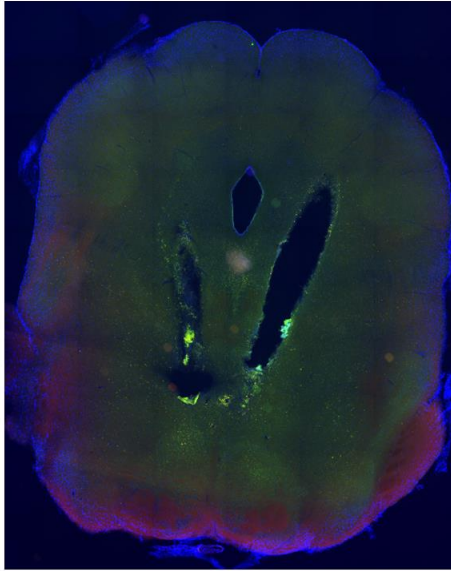


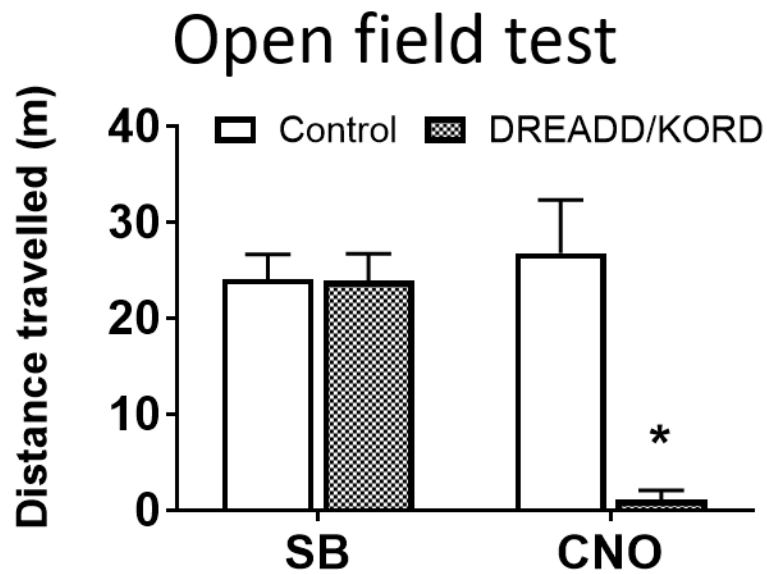
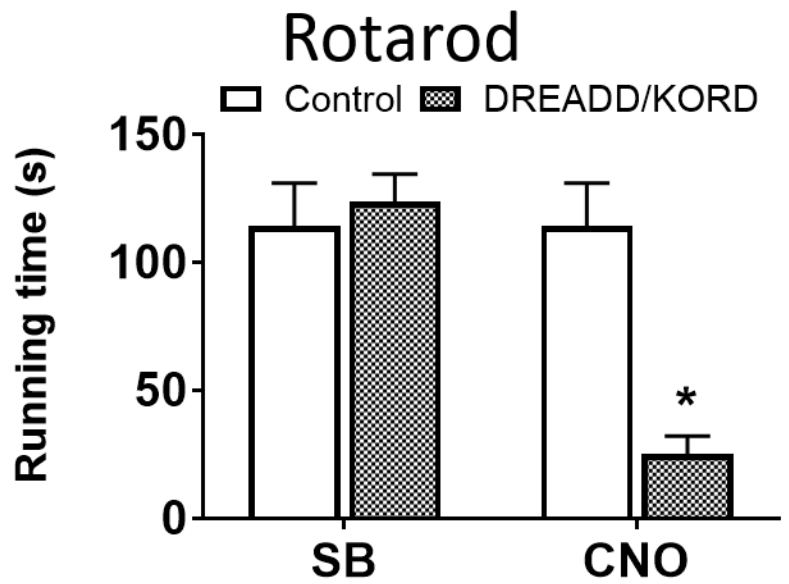
**Supplemental Figure 1:**

Thick colored lines depict the boundaries of cell body expression of hM3 DREADD (left) or KORD (right) as indicated by mCherry (DREADD) or HA tag FISH (KORD).



**Supplemental Figure 2:**

Representative section demonstrating the location of infusion cannula targeting the RMTg (top left). RMTg target location on mouse atlas (4.7 mm anterior/posterior,  $\pm 0.5$  mm lateral, and -2.75 mm dorsal/ventral to bregma) (top right). Summary figure of all cannula tip locations in relation to RMTg (large red circles).



**Supplemental Figure 3:**

SB-induced inhibition of RMTg GABA neurons had no effect on motor performance in either open field or rotarod tests, while CNO activation of these neurons significantly impaired performance (i.e., decreased fall latency) in the rotarod test and decreased distance travelled in the open field test.