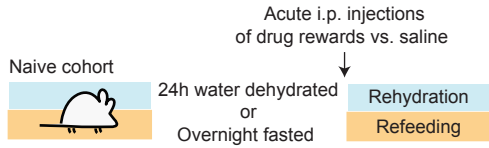


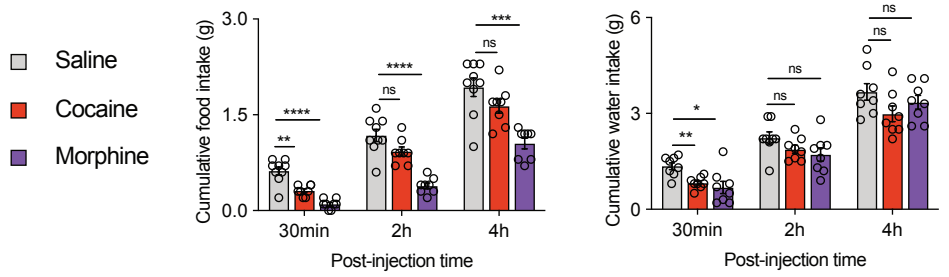
Figure S1

a

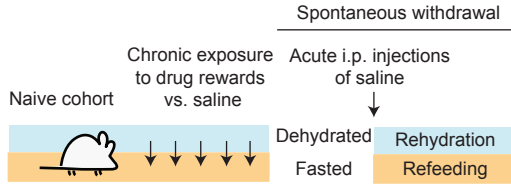


b

Acute exposure of cocaine vs. morphine

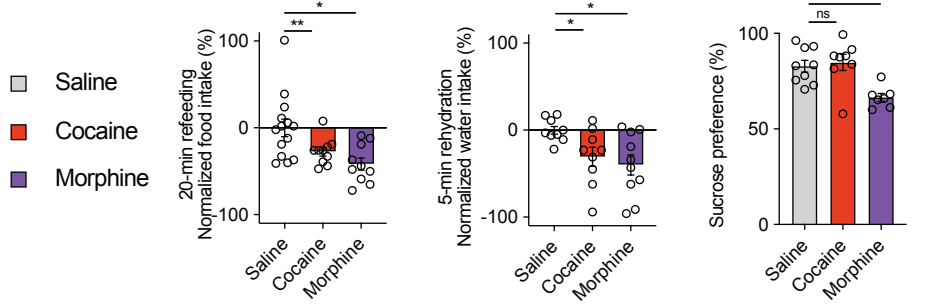


c



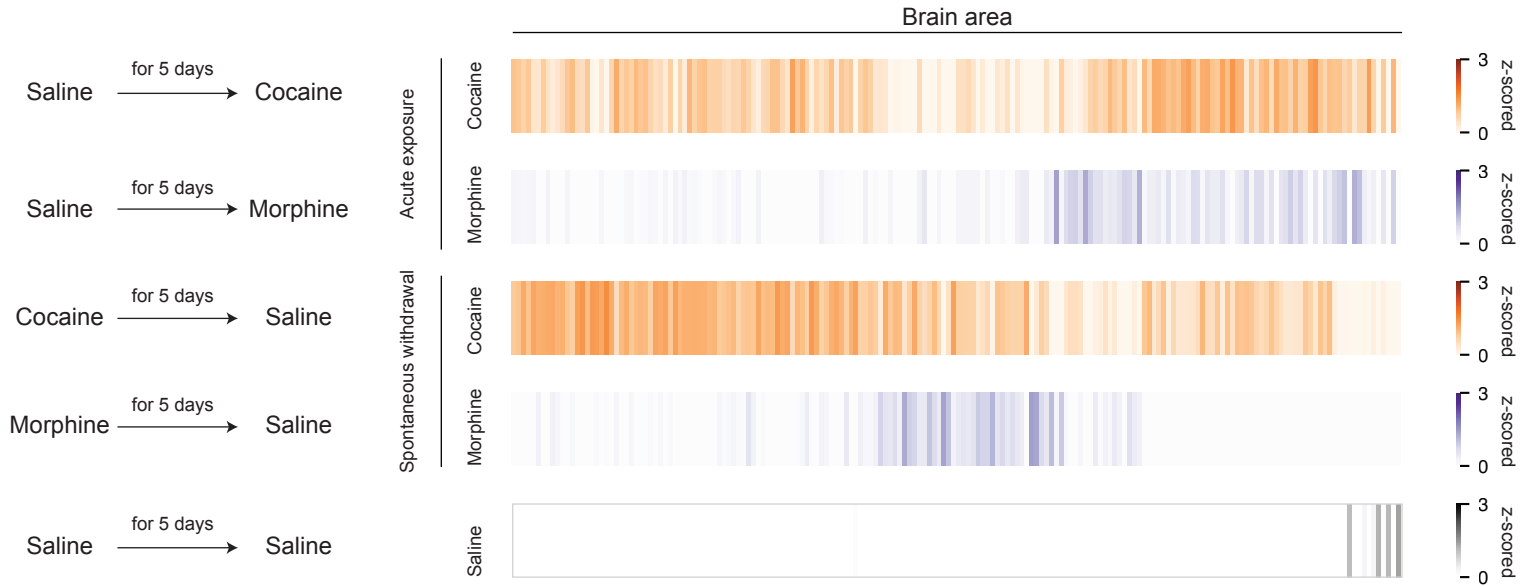
d

Spontaneous withdrawal from chronic exposure of cocaine vs. morphine



e

Brain-wide c-Fos activity mapping



f

Acute exposure

Spontaneous withdrawal

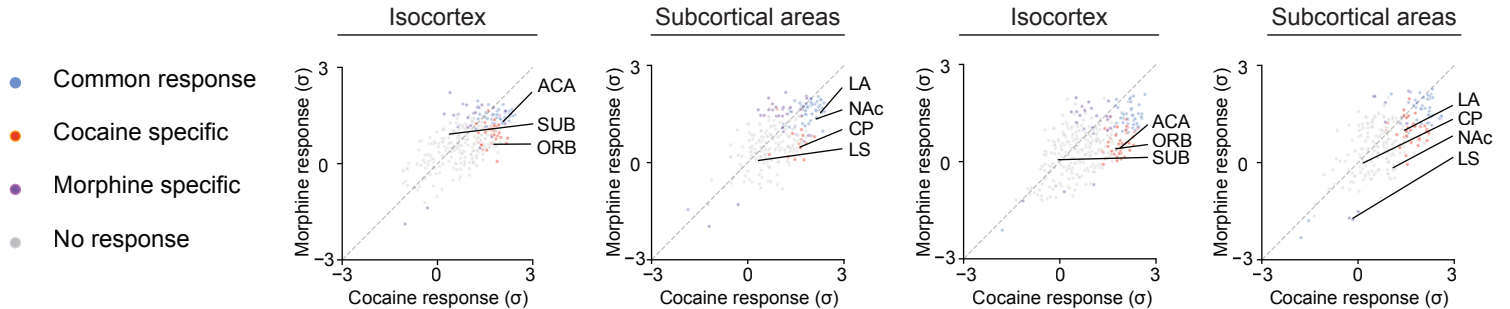


Figure S2

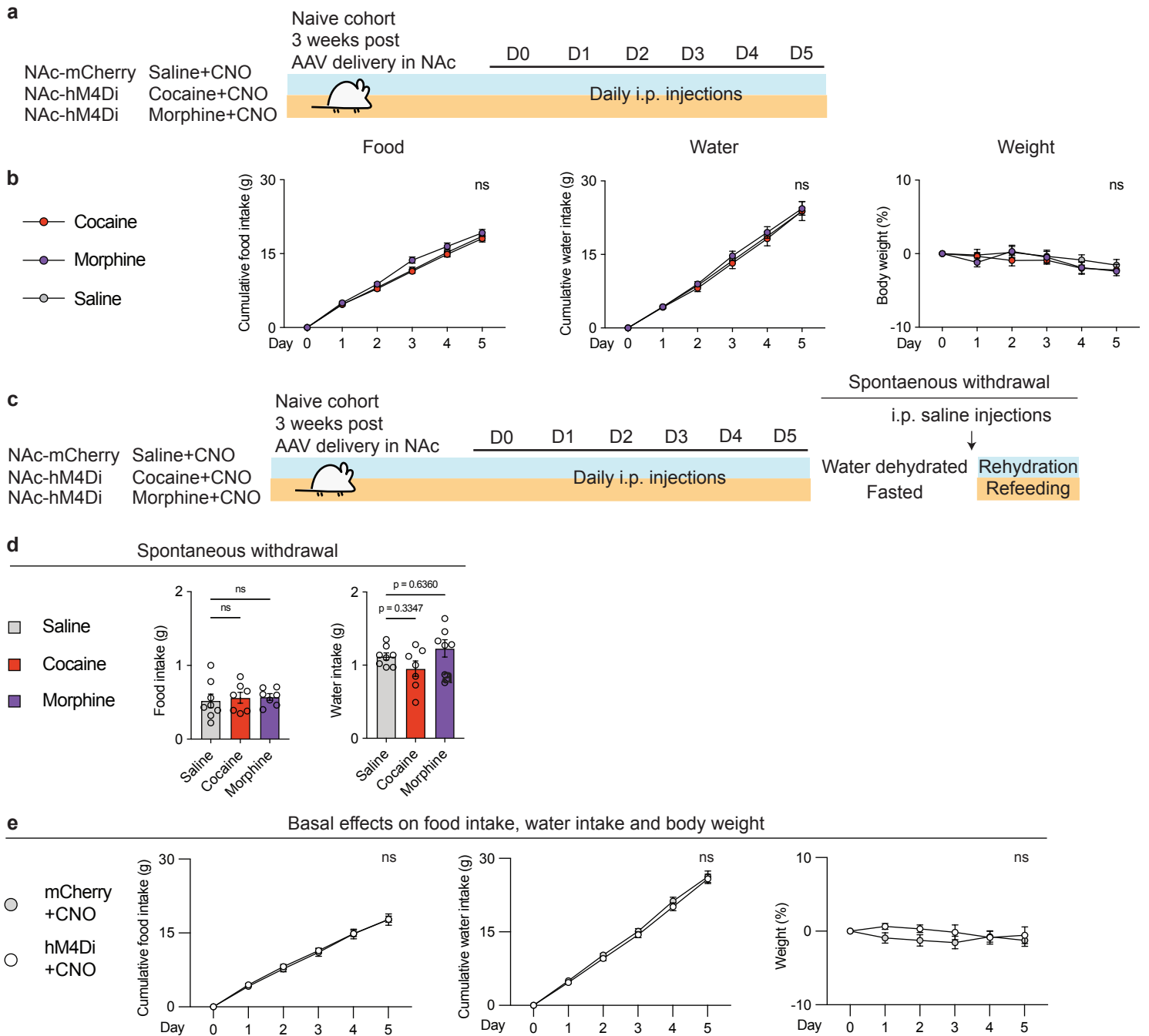


Figure S3

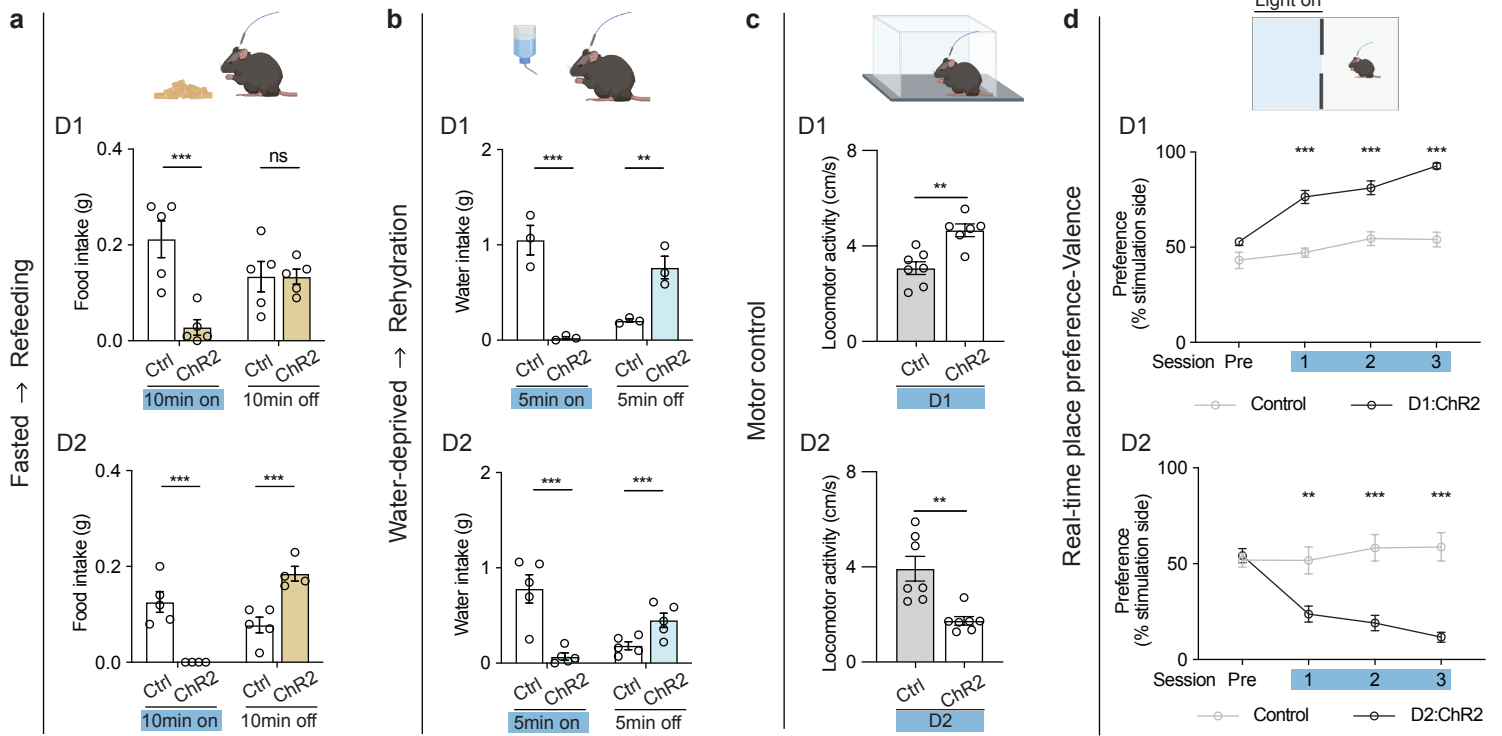


Figure S4

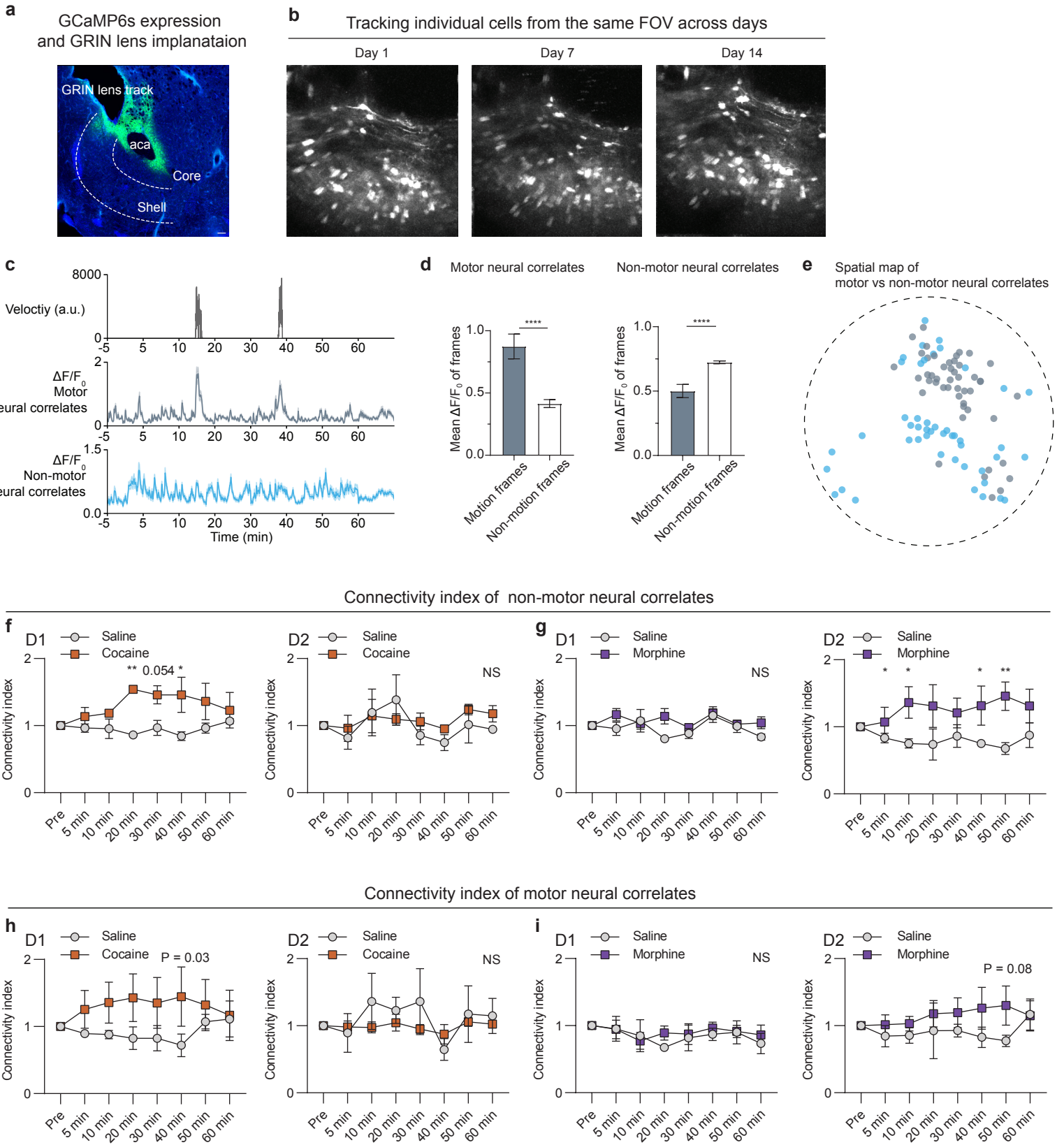


Figure S5

Distribution of PCCs
($\mu = 0.04$, $\sigma = 0.15$)

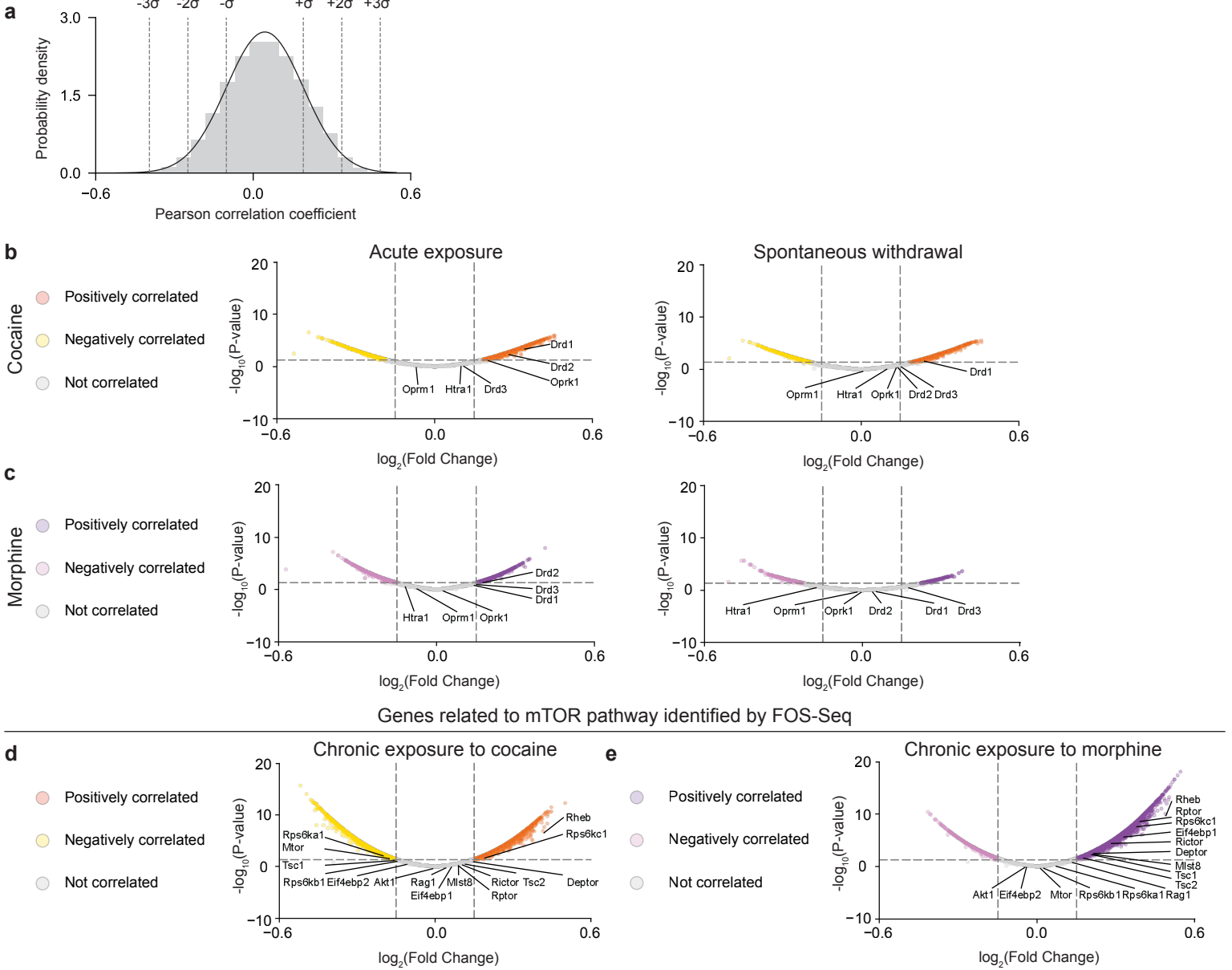


Figure S6

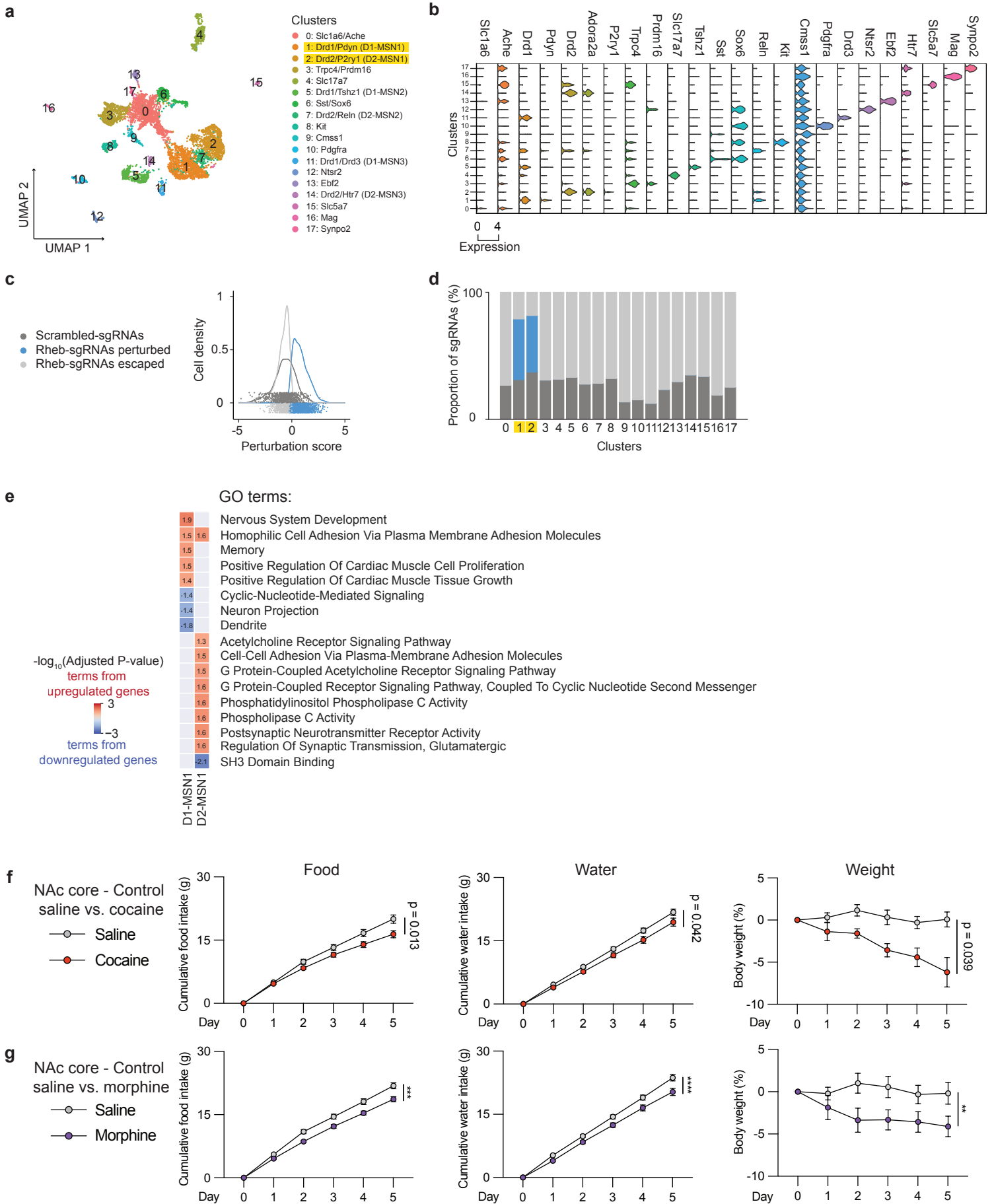


Figure S7

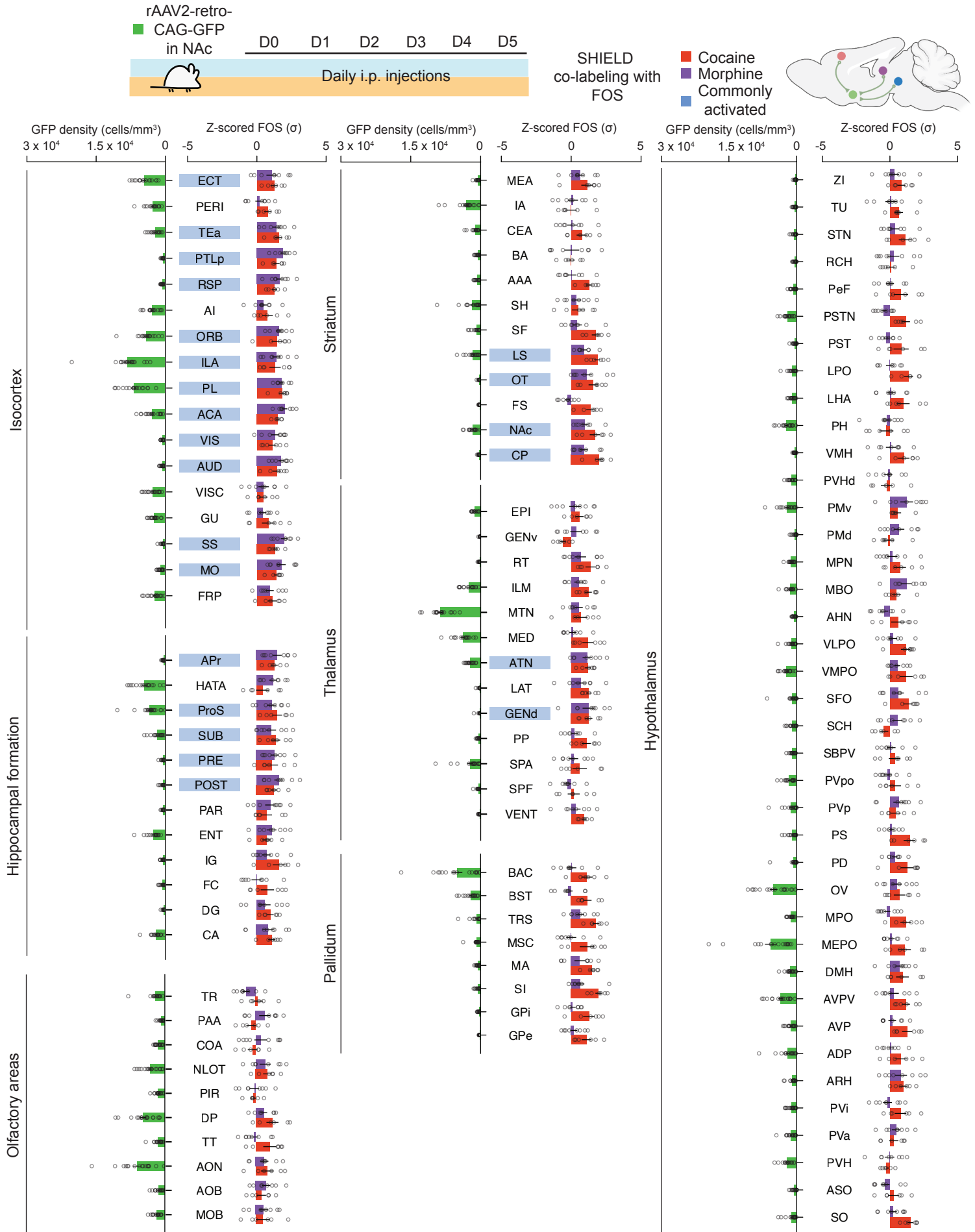


Figure S8

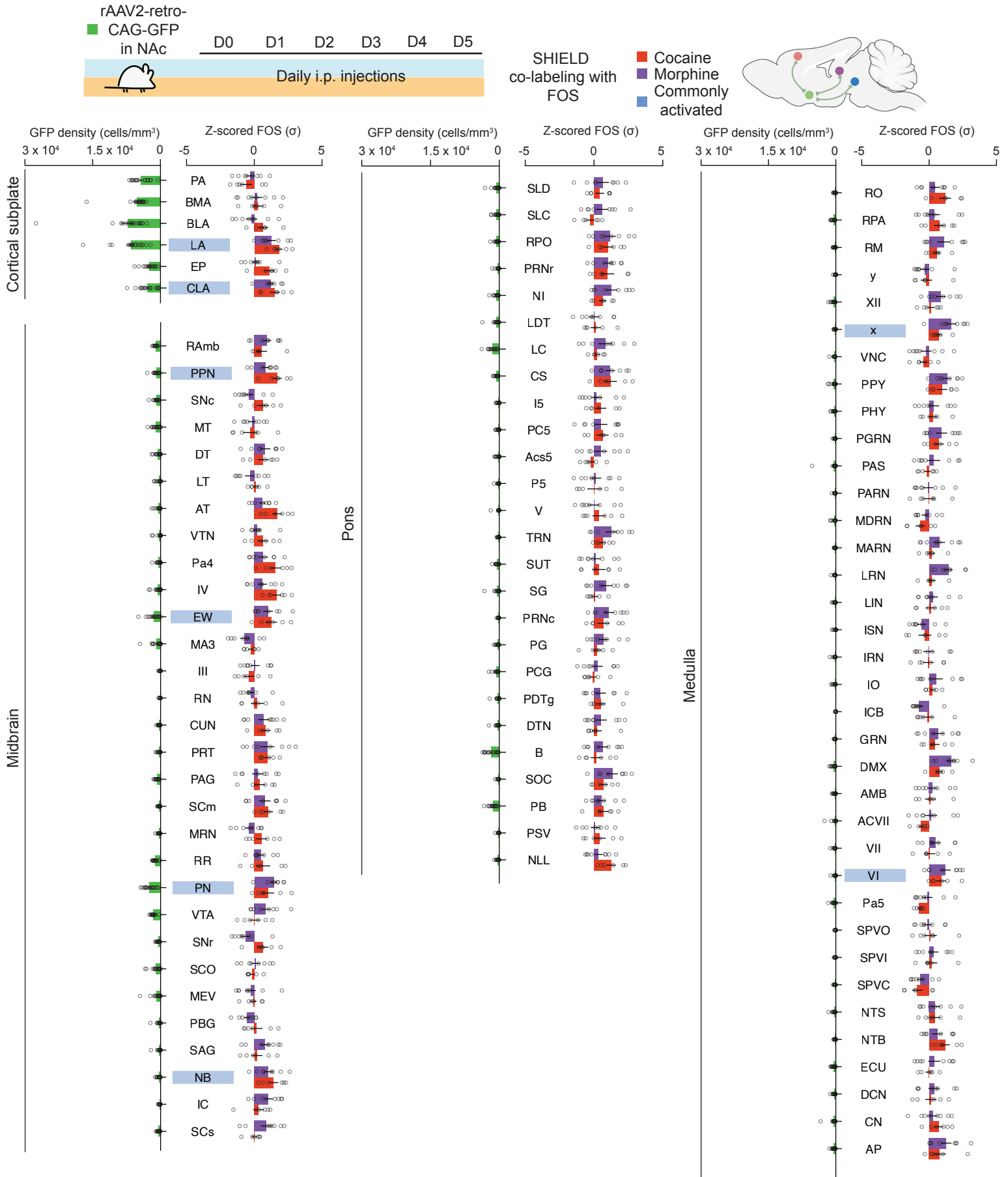
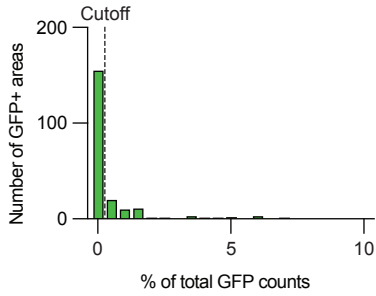


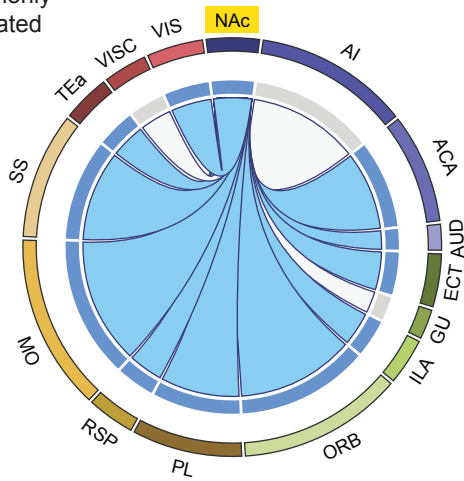
Figure S9

a Distribution of GFP+ brain areas

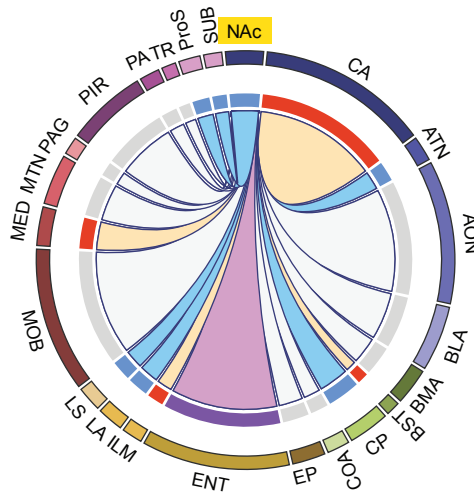


b Cortical projections to NAc

■ Cocaine
■ Morphine
■ Commonly activated



c Subcortical projections to NAc



d Retrograde chemogenetic activation of NAc-projecting neurons

NAc: AAVrg-hSyn-DIO-hM3D(Gq)
 Higher-order nodes: AAV5-hSyn-Cre

