Supplementary Information

Title:

Histone deacetylase inhibitors facilitate partner preference formation in female prairie voles

Hui Wang*,[1,2,3] Florian Duclot*,[1,2] Yan Liu,[2,3] Zuoxin Wang[2,3,#] and Mohamed Kabbaj[1,2,#]

* *These authors contributed equally to this work*

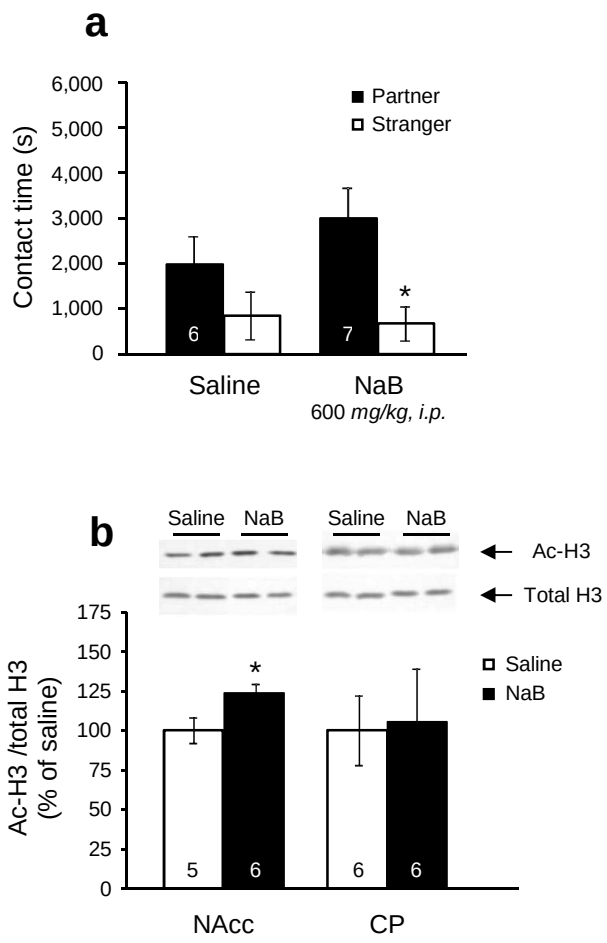
[#] *To whom correspondence should be addressed:* mohamed.kabbaj@med.fsu.edu

zwang@psy.fsu.edu

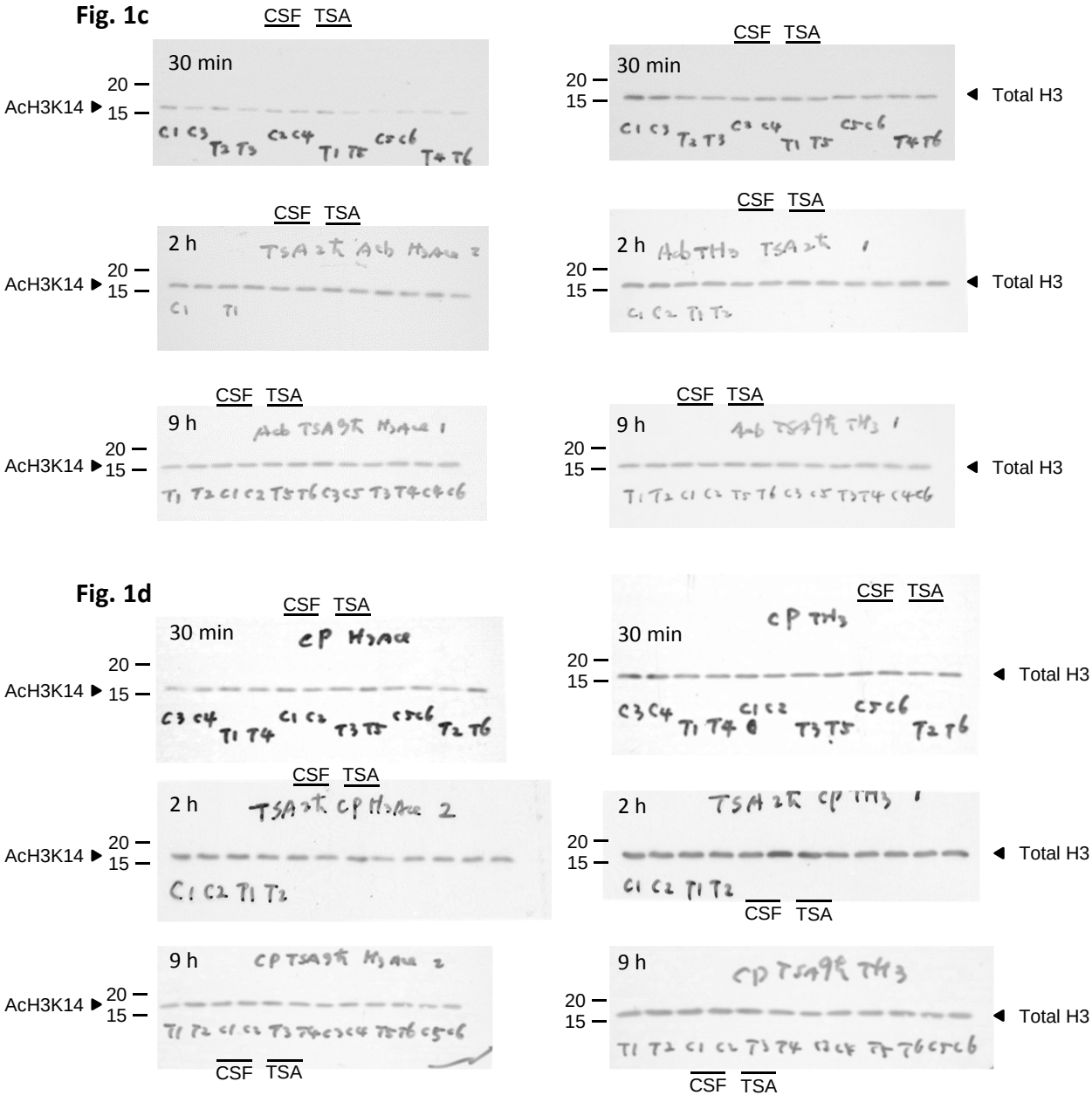
[1]Department of Biomedical Sciences, Florida State University, Tallahassee, FL-32306

[2]Program in Neuroscience, Florida State University, Tallahassee, FL-32306

[3]Department of Psychology, Florida State University, Tallahassee, FL-32306



Supplementary Figure 1. Sodium butyrate (NaB) facilitates partner preference in female prairie voles. (a) Sexually naïve females received intraperitoneal (*i.p.*) injections of either saline or NaB (600 mg/kg), cohabited with a male for 6 hours without mating, and then tested for partner preference. (a) Similar to TSA, animals injected with NaB exhibited a significant partner preference (two-tailed paired *t*-test: $t_6 = 2.71$, $P = 0.03$), while saline-injected animals did not (two-tailed paired *t*-test: $t_5 = 1.07$, $P = 0.33$). However, NaB treatment had no effect on the locomotion (two-tailed unpaired *t*-test: 146.5 ± 19.2 for saline, and 147.0 ± 33.8 for NaB; $t_{11} = 0.01$, $P = 0.99$). (b) To investigate whether these behavioral effects were associated with an alteration of global histone acetylation, a separate batch of females was injected with saline or NaB (600 mg/kg, *i.p.*), sacrificed 2 hours later, and global histone H3 acetylation (Lys14, H3K14) was assessed by Western-blot in the nucleus accumbens (NAcc) and caudate putamen (CP). NaB-treated animals had a significantly higher level of global histone H3K14 acetylation in the NAcc (two-tailed unpaired *t*-test: $t_9 = 2.46$, $P = 0.03$) but not CP ($t_{10} = 0.13$, $P = 0.90$), as compared to saline-treated controls.



Supplementary Figure 2. Images of full length blots presented in the main Figure 1.

Fig. 2e

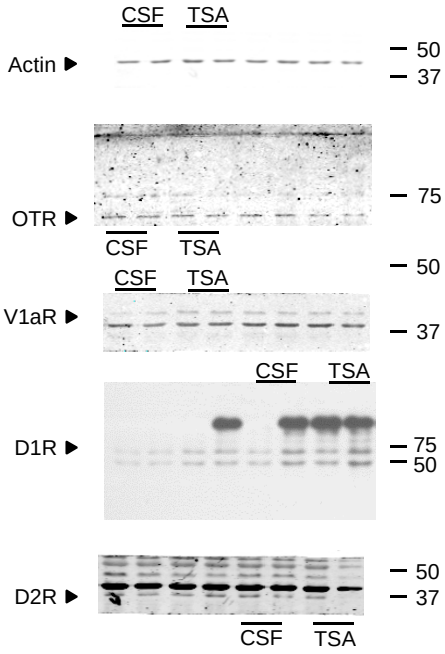


Fig. 2f

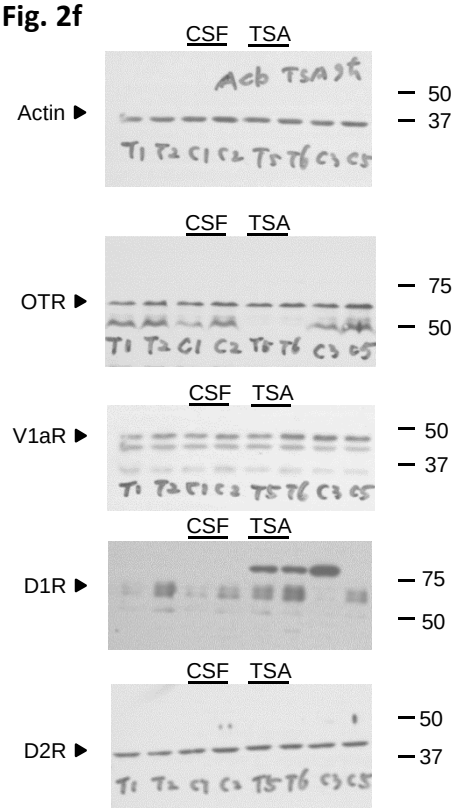


Fig. 2g

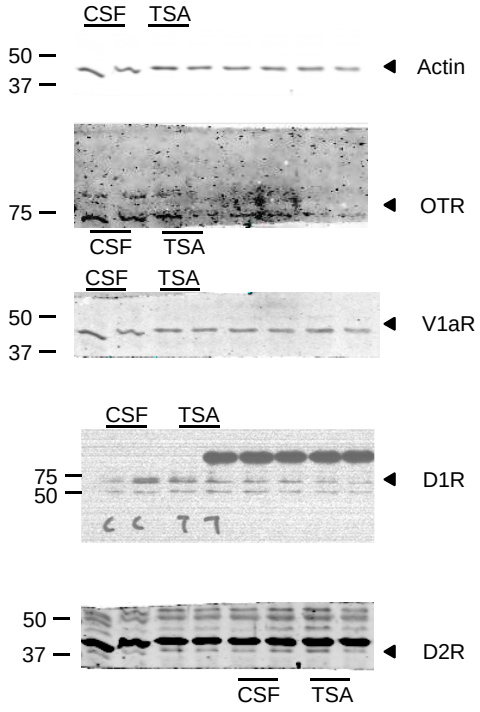
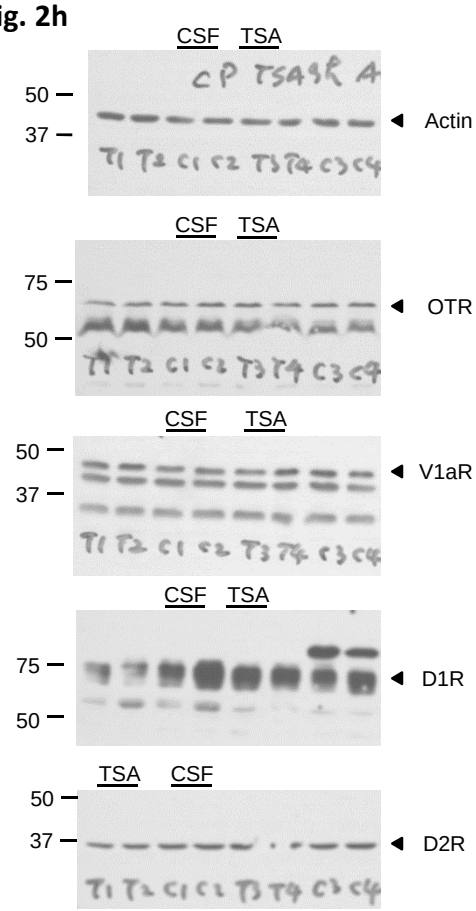
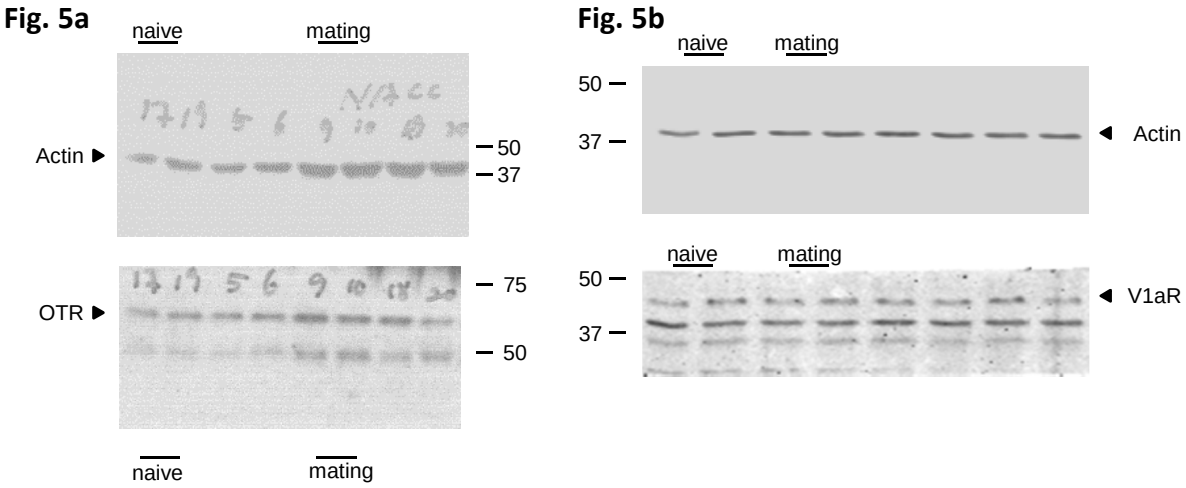


Fig. 2h

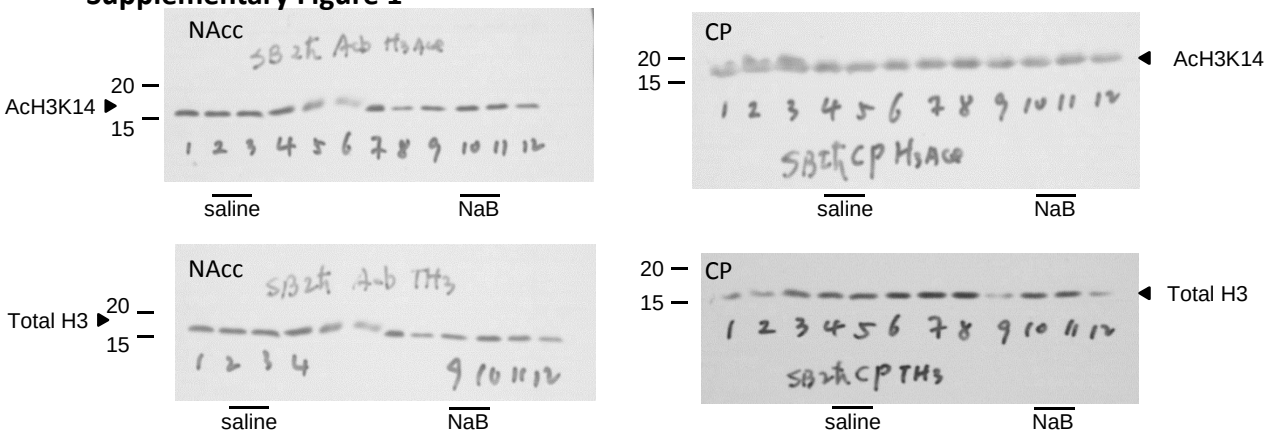


Supplementary Figure 3. Images of full length blots presented in the main Figure 2.



Supplementary Figure 4. Images of full length blots presented in the main Figure 5.

Supplementary Figure 1



Supplementary Figure 5. Images of full length blots presented in the Supplementary Figure 1.