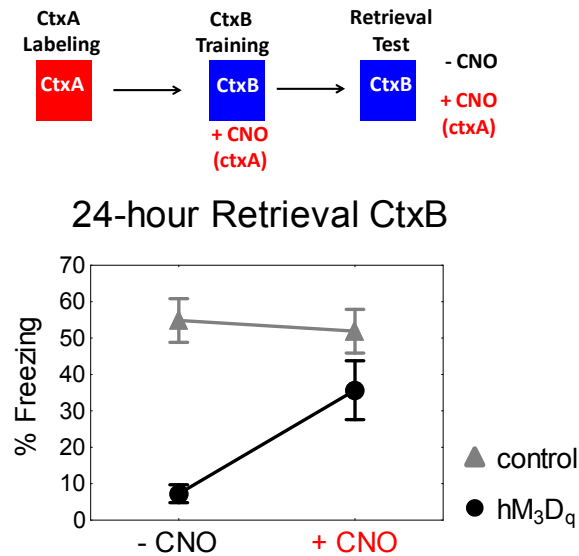


**Table S1. Percent cfos expression in hippocampus and amygdala.** Mice from experiment in Fig. 2 were examined 1-hour following the retrieval trial in ctxB and immunostained for cfos expression. Data is presented as a percentage of total cells counted in the corresponding area.  $hM3D_q$   $n = 10$ , control  $n = 10$ . Group means were compared by T-test and p-value is indicated.



**Fig. S1.** Using a different context for novel ctxA results in the same effects as shown in experiment 1 (see Fig 3C).  $hM3D^{fos}$  mice show impaired 24 hour memory for ctxB that is rescued by injection of CNO.  $hM3D^{fos}$   $n = 15$ , control  $n = 17$ . Repeated measures ANOVA genotype x CNO interaction  $F(1,28) = 5.012$ ,  $p < .05$ . Post hoc Fisher's LSD test revealed that  $hM3D^{fos}$  mice were freezing significantly less than control mice in the absence of CNO,  $p < 0.001$ , were statistically similar to controls in the presence of CNO,  $p = 0.114$ , and showed a significant increase in freezing in ctxB in the presence of CNO compared to ctxB alone,  $p < .005$ .