



Fig. S1 Effects on gene expression of chronic intraperitoneal injections of vehicle solution (controls of Figure 5) compared to uninjected WT and *Crtc1*^{-/-} mice (controls of Figure 2). **(A)** Effects of chronic injections on total *Bdnf* expression in the hippocampus (HIP) and prefrontal cortex (PFC). Chronic injections reduced *Bdnf* levels of WT in the HIP and PFC (** $p < 0.01$, *** $p < 0.001$) and of *Crtc1*^{-/-} mice in the PFC (### $p < 0.001$, vs. *Crtc1*^{-/-} mice). **(B)** Effects of chronic injections on *BdnfIV* expression in the HIP and PFC. Chronic injections had no effect on *BdnfIV* levels in the HIP. Injections significantly downregulated *BdnfIV* in the PFC of *Crtc1*^{-/-} mice (§§ $p < 0.01$, vs. *Crtc1*^{-/-} mice), and they also presented lower *BdnfIV* levels than injected WT mice in the same structure (§ $p < 0.05$, vs. WT injected). **(C-F)** Effects of chronic injections on *Nr4a1-3* expression in the HIP and PFC. Chronic injections significantly decreased the expression of *Nr4a1-3* in the HIP and of *Nr4a2-3* in the PFC of WT mice (* $p < 0.05$, *** $p < 0.001$, vs. WT mice). Non-injected *Crtc1*^{-/-} mice presented lower *Nr4a1-3* levels in the HIP and PFC than non-injected WT mice (+ $p < 0.05$, vs. WT mice), except for *Nr4a3* in the HIP. Injected *Crtc1*^{-/-} mice also displayed lower levels of *Nr4a1* and *Nr4a2* in the PFC (§ $p < 0.01$, vs. WT injected). In *Crtc1*^{-/-} mice, chronic injections only reduced the levels of *Nr4a3* in the HIP (#### $p < 0.001$). *: WT vs. WT injected, +: WT vs. *Crtc1*^{-/-}, #: *Crtc1*^{-/-} vs. *Crtc1*^{-/-} injected, §: WT injected vs. *Crtc1*^{-/-} injected.