

Expanded View Figures

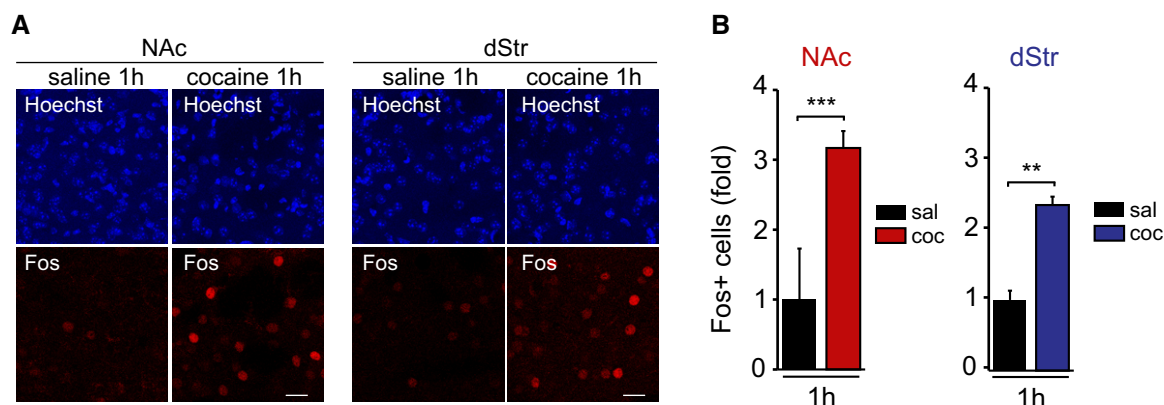


Figure EV1. Fos induction in response to cocaine occurs in both the nucleus accumbens and dorsal striatum.

A Brain slices from the same mice as in Fig 1, stained for Fos. Mice were treated with cocaine (15 mg/kg) or a saline solution daily for 5 days. Fos expression was analysed by immunohistochemistry (NAc: nucleus accumbens; dStr: dorsal striatum) 1 h after the last injection of cocaine or saline and nuclei were counterstained with Hoechst (scale bar: 20 μ m).

B Quantifications of Fos-positive cells (fold change normalized to the saline-treated group) in the NAc and dStr. $n = 4$ mice per group; Mean + SEM; ** $P < 0.01$; *** $P < 0.001$, unpaired Student's t -test.

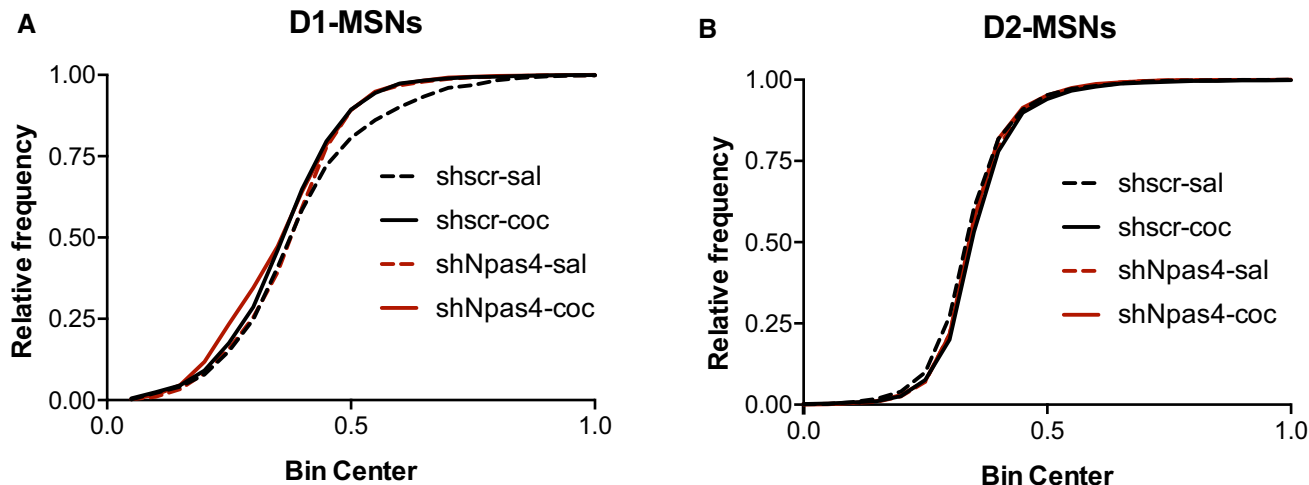


Figure EV2. Npas4 knockdown has no effect on spine head diameter in D1- and D2-MSNs under basal conditions and after cocaine treatment.

A, B The datasets from Fig 5 were analysed for spine head diameter and plotted in a cumulative distribution. Around 2,000 spines from 10 neurons from four mice per group were analysed. (A) D1-MSNs. (B) D2-MSNs. Two-way ANOVA with Bonferroni *post-hoc* tests. Scrambled saline vs scrambled cocaine: $P < 0.004$ with a mean difference of 0.016 microns. This mean difference constitutes a negligible effect, in spite of statistical significance. For ANOVA statistics, please see Table EV2.