

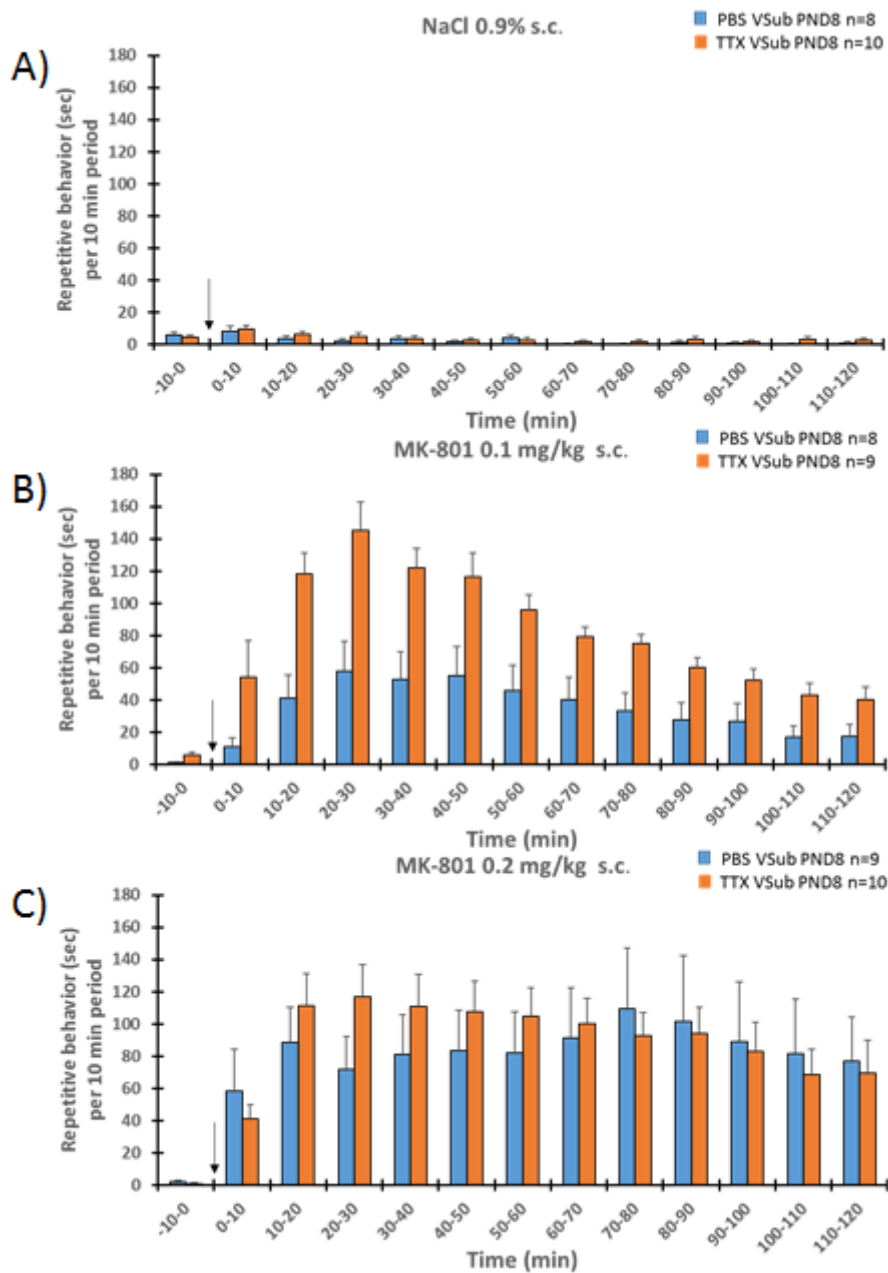
Supplementary material

MK-801-induced behavioral and dopaminergic responses in the shell part of the nucleus accumbens in adult male rats are disrupted after neonatal blockade of the ventral subiculum.

Hana SAOUD*, Elora KERESLIDZE*, Séverine EYBRARD and Alain LOUILOT

University of Strasbourg, INSERM U 1114, Faculty of Medicine, FMTS, Strasbourg, France

* These two authors contributed equally to the work.



Supplemental Figure: Repetitive behavior

Supplemental Figure Legend:

Repetitive behavior after administration of MK-801 in adult male rats subjected to neonatal inactivation of the left ventral subiculum (VSub) by microinjection of TTX at post-natal day 8 (PND8). Each adult animal micro-injected in the left VSub with the PBS (blue) or TTX (orange) solution at PND8 receives, at random, a s.c injection (arrow) of NaCl 0.9% (A), MK-801 0.1 mg/kg (B), or MK-801 0.2 mg/kg (C). The repetitive behavior was measured as the time per 10 min period spent in repetitive behavior including rotation (defined as 4 consecutive 1/4 turns in the same direction), head weaving, and intense sniffing, behaviors reported by other authors (Hofmann, 1992; Andiné et al., 1999; Wu et al., 2005; Lopez Hill et al., 2019) as being impaired in rodents by MK-801. Locomotor activity results (Figure 2) and repetitive behavior results were obtained simultaneously but analyzed independently of each other by different observers not informed of the results of the others.

The results are expressed as mean + SEM of the duration of repetitive behavior (sec) per 10 min period. n corresponds to the number of rats per group. The general ANOVA performed on the 54 animals for the duration of repetitive behavior during the 60 min post-injection period shows a significant effect for the administered dose (NaCl 0.9%; MK-801 0.1 mg/kg; MK-801 0.2 mg/kg) ($F[2,48] = 22.23$; $p < 0.00001$), and for the neonatal microinjection (PBS/TTX) ($F[1,48] = 6.73$; $p < 0.05$), but not for the dose x injection interaction ($F[2,48] = 2.74$; n.s.). The general ANOVA performed on all 54 animals for repetitive behavior during the 120 min post-injection period reveals a significant effect for the dose administered ($F[2,48] = 20.39$; $p < 0.00001$). By contrast no significant effects for neonatal microinjection (PBS/TTX) ($F[1,48] = 2.81$; n.s.) or for the dose x injection interaction ($F[2,48] = 1.67$; n.s.) were obtained for the 120 min post-injection.

As regards the time course for repetitive behavior the general ANOVA performed on the 54 animals during the 60 min post-injection period reveals a significant effect of the time factor ($F[5,240] = 16.49$; $p < 0.00001$), a significant effect of the time x dose interaction ($F[10,240] = 6.47$; $p < 0.00001$), and a significant effect of the time x microinjection interaction ($F[5,240] = 3.42$; $p < 0.01$), but no significant time x dose x microinjection interaction ($F[10,240] = 1.08$; n.s.). Concerning the 120 min post-injection, the ANOVA highlights significant effects for the time factor ($F[11,528] = 10.85$; $p < 0.00001$), the time x dose interaction ($F[22,528] = 5.21$; $p < 0.00001$), and the time x microinjection interaction ($F[11,528] = 3.42$; $p < 0.001$), but not for the time x dose x microinjection interaction ($F[22,528] = 1.09$; n.s.).

The profile of responses concerning repetitive behavior appeared very similar to that obtained with locomotor activity, albeit not identical, but time spent in repetitive behaviour seems to be a statistically less sensitive index than locomotor activity.