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Further Evidence for the Role of Neurokinins in the Expression of Male Copulatory Behavior

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FURTHER EVIDENCE FOR THE ROLE OF NEUROKININS IN THE EXPRESSION OF MALE COPULATORY BEHAVIOR

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Accumulating evidence indicate that neurokinins (neuropeptides synthesized in the brain) play a role in the neural regulation of male rat copulatory behavior. Recently we reported on the effects of intracerebral injections of two novel neurokinins on male rat sexual behavior. Bilateral injections of neurokinin K (NKK) into the medial preoptic area (MPOA) produced a marked disruption in the expression of male rat sexual behavior, while injections of neurokinin A (NKA) had no effect. In this study, a four part experiment was conducted. Experiment 1 was conducted in an attempt to replicate the NKK induced inhibition of male copulatory behavior observed previously. Experiment 2 examined the question of whether the effects observed previously are specific to the MPOA by assessing the effects of NKK into the caudate-putamen (an area which contains neurokinin receptors) on male copulatory behavior. In experiment 3, the effect of another novel neurokinin, neurokinin y (NKy), on male sexual behavior was assessed following bilateral injections into the MPOA. Lastly, in order to ascertain whether the effects on male copulatory behavior were mediated via a neurokinin receptor (NK-2) animals were pre-treated with a selective NK-2 receptor antagonist followed by bilateral injections of saline, NKK, or NKy into the MPOA. In support of a previous study in this lab, our results indicate that bilateral injections of NKK markedly inhibited the expression of male copulatory behavior when compared to injections of saline ($X^2 = 10.5$, $df = 1$, $p < .001$). In contrast, bilateral injections of NKy, failed to effect the expression of male copulatory behavior in sexually vigorous male rats when compared to control injections. Bilateral injections of NKy did, however, produce marked increases in intromission and mount latencies. No other behavioral parameter of male copulatory behavior was affected.