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NEUROKININ K AND NEUROKININ P MODULATION OF MALE COPULATORY
BEHAVIOR AND THE EFFECT ON C-FOS IMMUNOREACTIVITY IN
THE MALE RAT BRAIN.

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There is a body of accumulating evidence regarding male rat copulatory behavior that has implicated several key structures in the rat brain that modulate sexual behavior. These structures include the medial preoptic area, the medial amygdala, the bed nucleus of the stria terminalis, the midbrain tegmental area, and the accessory olfactory bulb. Lesion and electrical stimulation studies have shown that the above areas are integral in the expression of male sexual behavior. In addition to this, research on the role of neurokinins in the neurochemical mechanisms underlying these behaviors also indicate that several of the derivatives of the neurokinin P gene are both manufactured and released in the above areas. Among these products, neurokinin K has been demonstrated to produce a profound inhibition of all aspects of male sexual behavior. When injected into the lateral ventricles at a sufficient dose, neurokinin K is known to completely inhibit all expression of male sexual behavior. What has yet to be shown is how this neurokinin is altering neuronal activity patterns in the rat sexually dimorphic circuit outlined above. Another product of neurokinin P gene, neurokinin P, was also be used in this study. To date, intraventricular injections of neurokinin P have not been shown to produce any significant behavioral effects in the male despite its know stimulatory properties. To quantify these changes in neuronal activity following injections of these two peptide, *c-fos* immunocytochemistry was used as a technique for determining recent neuronal activity at the cellular level. In this experiment, we used *c-fos* immunocytochemistry to visualize changes in neuronal activity in the male rat sexual circuit induced by intraventricular injections of neurokinin K, neurokinin P or saline.