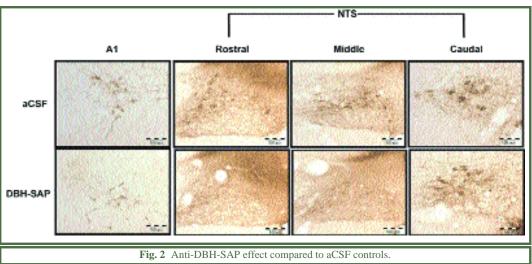
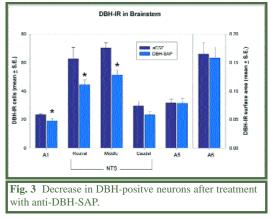
Norepinephrine Release After Mating Stimulation

(continued from page 1) injection sites within the MePD at 4X magnification, and the lack of tissue damage around the site of injection at 40X magnification. There was no indication that local infusion of anti-DBH-SAP induced neurotoxic damage around the area of infusion, as similar numbers of neurons were present in anti-DBH-SAP and aCSF groups and



since there did not appear to be microglial infiltration around the injection site in either group. Figure 2 shows the effects of anti-DBH-SAP on the number of DBH-stained cells within the A1 and A2 (nucleus tractus solitarius, NTS)

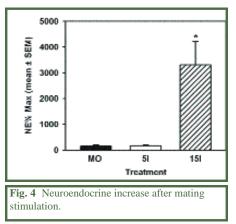


cell groups. Significant reductions in DBH-positive cells were observed compared to aCSF controls. Quantification of the results are shown in Figure 3, where it can be seen that decreases in DBH-positive neurons occurred in the A1 and rostral and middle NTS. These data demonstrated that noradrenergic projections to the MePD originate within the latter two cell groups.

Experiment 2:

Ovariectomized female rats were implanted with an intracerebral guide cannula targeting the left MePD, and were treated with estrogen and progesterone to induce sexual receptivity.

Fourteen to sixteen hours before mating (36-38 h after injection with estradiole benzoate) a microdialysis probe was inserted through the guide cannula. Microdialysate was collected at 20 min intervals (20μ /sample) beginning 2 h before to 3 h after mating. Animals received 5 intromissions (51), 151 or 15 mounts-without-intromission (MO) during mating. The content of monoamines in the dialysis sample was analyzed by HPLC with



electrochemical detection. As seen in Figure 4, there was a significant release of norepinephrine (max %) in females who received 15I, a number sufficient to induce the neuroendocrine changes of pseudopregnancy, whereas insufficient mating stimulation (MO and 5I) induced no increase in norepinephrine after or during mating.

These data show that noradrenergic cells within the A1 and A2 cell groups of the brainstem project to the MePD, and suggest that norepinephrine release in response to mating stimulation may be involved in establishment of the neuroendocrine memory of pseudopregnancy.

References

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