**INTRODUCTION**

Neuropeptides modulate physiological processes. Although many have been identified and their effects on the organism have been determined, there are many neuropeptides whose roles have yet to be determined.

In crustaceans, little information is known about the role that neuropeptides play in controlling musculature in the gut region. Determining the effects of different neuropeptides on the gut region is important for controlling gut movements and for better understanding the physiological processes of the gut.

**OBJECTIVE**

To determine the effects of orcokinins, CabTRP Ia, and Val1-SIFamide on the mid and hindgut of lobster and crayfish.

If activation or inhibition is found, to determine what these results mean for feeding patterns.

**METHODS**

- The animals were anesthetized with ice for 15 to 30 minutes.
- The tail was removed and was pinned down in a dissection dish in physiological saline (10-12°C for lobster, 18-20°C for crayfish).
- The ventral side of the animal and the skeletal muscle was removed to expose the midgut and the hindgut.

A string was tied around the midgut of the animal and was connected to a force transducer. The force transducer converted mechanical movements of the string into a recording on the computer.

- Peptides at a concentration of 10⁻⁶ M were applied and movements were recorded.
- Proctolin as a positive control
- Orcokinins, CabTRP Ia, and Val1-SIFamide

**RESULTS**

- Val1-SIFamide at a concentration of 10⁻⁶ M stimulates gut contractions

**SUMMARY OF RESULTS**

LOBSTER

Crayfish

**CONCLUSIONS**

- Val1-SIFamide at 10⁻⁶ M increases the average contraction rate for the lobster and crayfish

- Orcokinins seem to activate the gut of the crayfish, but not the gut of the lobster

- More replicates needed to determine role of CabTRP Ia

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