The Development of a Mass Spectrometric Method for the Detection of Neuropeptide Receptors in the American Lobster, Homarus americanus

Louis D. Mendez, Class of 2019

Neuropeptides are short chains of amino acids that are a part of a large class of signaling molecules. Neuropeptides are able to regulate animal physiology and behavior by interacting with their respective cell membrane receptors. One particular group of neuropeptides, C-type allatostatins (AST-Cs), have been found to modulate cardiac function in a number of insects and crustaceans.¹ To characterize the effect of these neuropeptides on the modulation of the lobster's rhythmic pattern generators (RPGs), or th 559.98cm **B** 50 0 00 Tm(8rr t) 0.20

References:

1. Stanhope, M.; Lameyer, T. J.; Shea, D. N.; Chi, M.; Pascual, M. G.; Schulz, D. J.; Christie, A. E.; Dickinson, P. S., Mechanisms Underlying Differential Responses to the Neuropeptide Allatostatin-C (AST-C) in the Cardiac Ganglion of the Lobster, Homarus americanus. *The FASEB Journal* **2016**, *30* (1 Supplement), 760.1-760.1.

2. Williams, A. H.; Calkins, A.; O'Leary, T.; Symonds, R.; Marder, E.; Dickinson, P. S., The neuromuscular transform of the lobster cardiac system explains the opposing effects of a neuromodulator on muscle output. *Journal of Neuroscience* **2013**, *33* (42), 16565-16575.

3. Aebersold, R.; Mann, M., Mass spectrometry-based proteomics. *Nature* **2003**, *422* (6928), 198.