

## Will *Amtitlaniaa nigrofasciatum* and *Amtitlaniaa siquia* Cortisol Levels Habituate to Stressor

The objective is to identify whether naturalistic strains (less than 2 generations in captivity), *Amtitlaniaa nigrofasciatum* and *Amtitlaniaa siquia*, will habituate to a standardized unfamiliar stressor common in fish research, air stress. Previous work has suggested that commercially raised *A. nigrofasciatum* habituates to the stress of confinement (Wong, 2008). Cortisol (CORT), an endocrine hormone, is released in response to normal events, such as waking and falling asleep, but is primarily elevated in response to acute and chronic stress. To determine whether the fish are habituating to this stressor, their cortisol levels will be monitored using a non-invasive water sampling technique (Schweitzer, Melot, Laubu, et al., 2017). The control group will not be exposed to the air stress while an experimental group will be exposed to the stressor. Both groups will have their sample cortisol measured for five consecutive days. In the third group, the animals will be stressed and placed back in the tank and their cortisol samples will be collected after 30 minutes of isolation in a cup on the fifth day. Confinement for a given amount of time after a stressor has been found to be an effective noninvasive technique for hormone sampling (Gabor, 2012). The convict cichlids are expected to accommodate to the air stressor and consequently, their cortisol levels will fall over the course of the five-day period. The suppression of the HPA (hypothalamic-pituitary-adrenal) axis during a normally stressful stimulus might involve displays of associative learning for habituation to occur. We hope to examine why these two species might exhibit lower cortisol levels after a common non-threatening environmental stressor, which may be due to desensitization through a daily stimulus to maintain homeostasis for a prolonged period of time.

### Works Cited

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