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Increase in Dopamine levels lead to monogamy

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Monogamy has long been a subject of scientific interest for researchers. Visual observations have shown that Convict cichlid fish stay together after mating. Zebra fish (Danio rerio) were chosen as an alternative model for non-monogamous behavior. In this research study, dopamine receptors will be investigated because dopamine plays an important role in monogamous behavior. Dopamine is a modulatory neurotransmitter used in several ways, such as learning and memory, cognition, attention, reward pathways, and social behavior. For these reasons, I propose that the number of dopaminergic neurons in the midbrain of zebra fish will be fewer than in the membrane of Convict cichlid. This results in Convict cichlid monogamous behavior. The expression of dopaminergic neurons will be visualized by in-situ hybridization and with antibody immunohistochemistry. This research study will bring guidance to the future studies on monogamy.

Biography

Ezgi Sen is a Master Student in Biology Department at Georgia State University. Her interest is working with Dopamine pathways to investigate how dopamine levels can impact on monogamy in the Dr. Sylvester Lab. She has gained experiences, knowledge on developmental biology, evolutionary perspective of neural development and most importantly passion on doing research.

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