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Title: Effect of Short and Long Term Starvation on Fin and Retina Regeneration in Zebrafish(Danio Rerio)

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Keywords: Retina Regeneration

Zebrafish Danio Rerio

Issue Date: Apr-2023

Publisher:

IISER Mohali

Abstract:

Zebrafish (Danio rerio) exhibit phenomenal capacity to regenerate certain tissue like Retina, Fin, Spinal Cord and Heart etc. Retinal Müller-Glia cells regenerate upon injury and restore vision and zebrafish eye is structurally similar to humans, hence it's an exciting possibility to learn lessons from Zebrafish eye for Regeneration and apply to mankind. In aquatic animals, Starvation due to Feed Limitation/Migration/ Seasonal Variations is a severe environmental Stressor. During the course of Evolution Zebrafish has acquired the Art of Retina(Visual Input) and Fin(Mobility) Regeneration enduring periods of Starvation. Recent Literature shows higher Levels of Apoptosis in body tissue and irreversible Transcriptomic changes in starved zebrafishes. Starvation as an environmental stressor causes epigenetic modifications to the genome and it's exciting to trace those changes and give a try to rescue them by either reversing the feeding situation or by using epigenome modifier drugs. Starvation experiment has been conducted with Complete Food Absence. Hence it would be interesting to see How Starvation modulates Regenerative Capacity in Zebrafish for dillerent durations and to what extent?

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