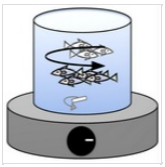

Assessing vertebrate physiology: A simple and cost-effective method to exercise adult zebrafish.

PLOS One

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Working

Sep 26, 2018

dx.doi.org/10.17504/protocols.io.sa2eage

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ABSTRACT

Zebrafish are an increasingly popular model system to better understand vertebrate physiology. Physical challenge by exercise has become popular to assess physical fitness of genetically manipulated animals or to identify gene regulatory networks that prepare the organism for higher physical demands. The increasing popularity of the zebrafish model system to address questions surrounding physical fitness and physiology has led to the development and commercial availability of sophisticated exercise setups (e.g. swim tunnel respirometers, Loligo® Systems, Viborg, Denmark). However, in many cases, these commercial systems are not available to researchers as they are costly.

This protocol describes a simple and effective way to exercise zebrafish. The setup is assembled from components that are present in virtually any laboratory. Its adoptable to constant or increasing endurance exercise as well as interval exercise or sprint tasks. The procedure does not cause stress to the animals as it relies on their natural behavior to swim against water currents to hold their position relative to their visual environment.

TAGS

physiology

Zebrafish

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EXTERNAL LINK

https://doi.org/10.1371/journal.pone.0204312

THIS PROTOCOL ACCOMPANIES THE FOLLOWING PUBLICATION

Boskovic S, Marín-Juez R, Jasnic J, Reischauer S, Sammak HE, Kojic A, Faulkner G, Radojkovic D, Stainier DYR, Kojic S (2018) Characterization of zebrafish (*Danio rerio*) muscle ankyrin repeat proteins reveals their conserved response to endurance exercise. PLoS ONE 13(9): e0204312. doi: 10.1371/journal.pone.0204312

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