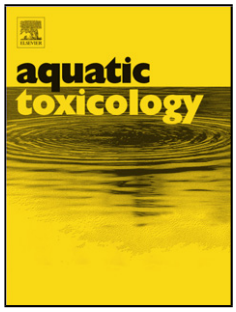

Title: High-throughput assessment of oxidative respiration in fish embryos: Advancing adverse outcome pathways for mitochondrial dysfunction

Authors: Christopher L. Souders, Xuefang Liang, Xiaohong Wang, Naomi Ector, Yuan H. Zhao, Christopher J. Martyniuk

PII: S0166-445X(18)30301-1
DOI: https://doi.org/10.1016/j.aquatox.2018.03.031
Reference: AQTOX 4903

To appear in: *Aquatic Toxicology*

Received date: 3-10-2017
Revised date: 21-3-2018
Accepted date: 26-3-2018

Please cite this article as: Souders, Christopher L., Liang, Xuefang, Wang, Xiaohong, Ector, Naomi, Zhao, Yuan H., Martyniuk, Christopher J., High-throughput assessment of oxidative respiration in fish embryos: Advancing adverse outcome pathways for mitochondrial dysfunction.Aquatic Toxicology https://doi.org/10.1016/j.aquatox.2018.03.031

High-throughput assessment of oxidative respiration in fish embryos: Advancing adverse outcome pathways for mitochondrial dysfunction

Christopher L. Souders II[1*], Xuefang Liang[1,2*], Xiaohong Wang[1,3], Naomi Ector[1], Yuan H. Zhao[3], Christopher J. Martyniuk[1,4]

[1]Department of Physiological Sciences and Center for Environmental and Human Toxicology, College of Veterinary Medicine, UF Genetics Institute, University of Florida, Gainesville, FL, 32611 USA

[2] School of Ecology and Environment, Inner Mongolia University, Hohhot 010021, China

[3] State Environmental Protection Key Laboratory of Wetland Ecology and Vegetation Restoration, School of Environment, Northeast Normal University, Changchun, Jilin, 130117, P. R. China

[4]Correspondence to Tel.: +1 352 294 4642; fax: +1 352 392 4707; email: cmartyn@ufl.edu

*These authors contributed equally to the preparation of the manuscript.

Highlights

- Environmental contaminants can cause mitochondrial dysfunction.
- Adverse Outcome Pathways can include impaired mitochondrial bioenergetics
- Fish embryos can be used to rapidly screen for mitochondrial dysfunction
- Zebrafish embryos show high individual variability in oxygen consumption rates
- Chorionated and dechorionated embryos can be used in mitochondrial bioenergetics bioassays