

Accepted Manuscript

Title: Combined Toxicity of Prevalent Mycotoxins Studied in Fish Cell Line and Zebrafish Larvae Revealed that Type of Interactions is Dose-dependent

Authors: Hongyuan Zhou, Saji George, Caixia Li, Subramaniam Gurusamy, Xiulan Sun, Zhiyuan Gong, He Qian



PII: S0166-445X(17)30278-3
DOI: <https://doi.org/10.1016/j.aquatox.2017.09.030>
Reference: AQTOX 4762

To appear in: *Aquatic Toxicology*

Received date: 29-6-2017
Revised date: 29-9-2017
Accepted date: 30-9-2017

Please cite this article as: Zhou, Hongyuan, George, Saji, Li, Caixia, Gurusamy, Subramaniam, Sun, Xiulan, Gong, Zhiyuan, Qian, He, Combined Toxicity of Prevalent Mycotoxins Studied in Fish Cell Line and Zebrafish Larvae Revealed that Type of Interactions is Dose-dependent. *Aquatic Toxicology* <https://doi.org/10.1016/j.aquatox.2017.09.030>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Combined Toxicity of Prevalent Mycotoxins Studied in Fish Cell Line and Zebrafish Larvae Revealed that Type of Interactions is Dose-dependent

Hongyuan Zhou^a, Saji George^{b,c,*}, Caixia Li^d, Subramaniam Gurusamy^b, Xiulan Sun^a,
Zhiyuan Gong^d, He Qian^{a,*}

^a School of Food Science and Technology, Jiangnan University, Wuxi 214122, PR China

^b Centre for Sustainable Nanotechnology, School of Chemical & Life Sciences, Nanyang
Polytechnic, Singapore 569830, Singapore

^c Department of Food Science and Agricultural Chemistry, Faculty of Agricultural and
Environmental Sciences, McGill University, 2111 Lakeshore, Ste Anne de Bellevue, Quebec
H9X3V9, Canada.

^d Molecular Biology Laboratory, Department of Biological Sciences, National University of
Singapore, Singapore 117543, Singapore

Highlights

- Demonstrated the individual and combinatorial effects of prevalent mycotoxins- AFB₁, DON and ZEN- on aquatic life-forms.
- Showed that, rankings of individual toxic effects on BF-2 cells and Zebrafish are AFB₁ > DON > ZEN and AFB₁ > ZEN > DON, respectively.
- Combinations of AFB₁+DON and AFB₁+ZEN showed synergistic effects whereas DON+ZEN revealed antagonistic effect on both BF-2 cells and Zebrafish.
- The tertiary combination displayed an overall antagonism in Zebrafish larvae while the interaction was concentration-dependent on BF-2 cells that showed synergism-to-antagonism as the concentration of individual mycotoxins were gradually increased.
- Demonstrated the utility of high content screening for elucidating combinatorial toxicity of mycotoxins *in vitro* and *in vivo*.

Download English Version:

<https://daneshyari.com/en/article/8883922>

Download Persian Version:

<https://daneshyari.com/article/8883922>

[Daneshyari.com](https://daneshyari.com)