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## The effect of Ochratoxin A (OTA) and *Cupriavidus Basilensis* OR16 strain biodegradation metabolites on zebrafish embryos (*Danio Rerio*)

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Nowadays, the size of mycotoxin-contaminated areas has been growing. Based on recent studies, all *Aspergillus* species are present in all across Hungary. The presence of mycotoxins in the food end feed chains are a worldwide hazard. Many mycotoxin detoxification methods are known (e.g. prevention, physical, chemical, biological methods). One of them is biodegradation which was tested in our experiments. During the microbial biodegradation of mycotoxins, in some cases, secondary products occur that might be more toxic than the original mycotoxins. According to the EFSA statement, metabolites from mycotoxins' degradation processes also need to be examined. During our former works, we applied an alternative method for toxicity analysis. This method was used to certify the OTA-degrading ability of the microbial strain. Ochratoxin A is a mycotoxin with nephrotoxic and possibly carcinogenic effects in humans and animals. OTA is often found as a contaminant in cereal grains or other crops and plant products (e.g. red wine, coffee beans) and also capable to accumulate in several animal-derived food products (meat, egg, blood, milk products). At 120 hpf (hour post fertilization), embryos' lethal and sub-lethal endpoints were examined. During the classification of the bacterial strain's degradation capacity, we tested normal, toxin-free control containing only the metabolic products of the microorganisms and samples degraded by the strain. The bacterial strain showed 96% degradation efficiency in our experiments. The outcomes were compared with the results of 5 ppm OTA. Based on our results, ÖR16 bacterial strain (*Cupriavidus Basilensis*) produces toxic materials but they are less toxic than OTA itself. The degradation of secondary products also showed a lower toxicity than OTA. The conclusion is that ÖR16 bacterial strain is suitable for the detoxification of OTA-contaminated feed in confined places.

### Biography

Edina Garai is PhD student at Szent Istvan University, Hungary. She has completed her master degree as ecotoxicologists in 2016. Her PhD work concentrating on mycotoxins and their biodegradation metabolites effects on zebrafish.

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