



**COST action 21111 – One Health Drugs**

## **Second workshop WG4, Giessen**

(hybrid format, online participation of the chair)

### **“Biomarkers, screening, standardized and non-standardized ecotoxicological testing in One Health drug discovery and development”**

September 20<sup>th</sup> and 21<sup>st</sup>, 2023

#### **Workshop venue:**

Research Centre for BioSystems, Land Use and Nutrition (iFZ)  
Justus Liebig University Giessen  
Heinrich-Buff-Ring 26  
35392 Giessen, Germany

Room B202

**preceding:**

**5<sup>th</sup> MC meeting**  
**20/09/2023, 9:00-12:00**  
**virtual**

In the development of new active substances, consideration of possible effects on non-target organisms is becoming increasingly important. What is already well established in pesticide development, namely the assessment of environmental effects, is still in its infancy in drug development. Here, the **One Health approach** often still falls short, as environmental health is an integral part of this concept, in addition to animal and human health. Efficient, innovative but also standardizable test methods and assays are needed to assess the behavior and effects of active ingredients released into the natural environment. The second workshop of WG4 will provide a platform to present and discuss different assays and test methods. Initial results of WG1-3 will be summarized and evaluated in an integrative manner with the goal of proposing a guideline paper to address ecotoxicological concerns in drug discovery and development in the anti-parasitic field. Visits to two research facilities focusing on drug discovery from bioresources or on risk assessment up to the mesocosm or field scale will round out the workshop.

## Programme

### September 20<sup>th</sup>

- 14:00–14:10 Welcome (**Rolf-Alexander Düring**, Justus Liebig University, Giessen)
- 14:10–14:30 Introduction to the COST Action (**Anabela Cordeiro da Silva**, University of Porto, vice-chair of the OneHealthdrugs COST ACTION)
- 14:30–15:00 Key lecture: Fish embryos as tools for the assessment of biological effects of water and sediment contamination (**Thomas Braunbeck**, Heidelberg University)
- 15:15 Departure by bus for visiting tour of an ecotoxicological research facility
- 16:15 Arrival in Homberg (Ohm), refreshment snack, on-the-fly
- 16:30–17:45 Institute tour: Centre for environmental research (**Peter Ebke**, FNU, Homberg (Ohm))
- 18:45 Arrival in Giessen
- 19:30 Dinner, at *La Scala* restaurant (Westanlage 30, 35390 Giessen)

### September 21<sup>st</sup>

- 09:00–09:30 Key lecture: "The adverse outcome pathway linking molecular interactions and higher-level outcomes in ecotoxicology" (**Ksenia Groh**, EAWAG)
- 09:30–10:00 Key lecture: "Omics-based responses to sexual endocrine active substances in zebrafish embryos" (**Steve U. Ayobahan**, FhG)
- 10:00–10:20 Coffee break
- 10:20–12:30 Scientific meeting: selected short communications including young scientists
1. **Mert Pekcan** (Nanotechnology may eliminate vector-borne parasitic infections)
  2. **Hafidh Akkari** (Effectiveness of *Syzygium aromaticum* L. extracts against *Hyalomma scupense*, the most common vector tick species infesting cattle in Tunisia)
  3. **Kornelia Hardes** (Screening of bio resources to identify new antiviral compounds against influenza virus infections)
  4. **Kayhan Ilbeigi** (Discovery of a novel therapeutic candidate against animal trypanosomiasis)
  5. **Erinda Lika** - online - (Analysis and detection of antibiotic resistance genes in waste waters in Albania, in the "One Health" approach)
  6. **Aleksander Peqini** (Pharmaceuticals in Albanian freshwater)
  7. **Andre Heinrich** (Eprinomectin: fate and effects in a mesocosm system)
  8. **Johannes Junck** (Do microplastics influence the partitioning of ivermectin in soil?)
  9. **Katharina Brotzmann** (Zebrafish embryo vs mouse – An alternative method in assessing neurotoxic potencies of pharmaceuticals?)
  10. **Eli Thoré** - online - (Unveiling challenges of ecotoxicological testing in One Health drug discovery and development: Insights from fluoxetine and turquoise killifish)
  11. **Narimantas Čėnas** (Single- and two-electron reduction of nitroaromatic compounds by flavoenzymes: mechanisms and implications for cytotoxicity)
  12. **Alisa Ronzheimer** (Revealing potentially harmful effects of sunscreen)

12:30–13:15 Refreshment

13:15–14:00 Reports from WG1-4, Discussion, farewell

WG1: **Ulrike Wittig**

WG2: **Theodora Calogeropoulou**

WG3: **Kayhan Ilbeigi**

WG4: **Rolf-Alexander Düring**

14:15–15:15 Institute tour: Fraunhofer Institute for Molecular Biology and Applied Ecology IME; Bioresources, Giessen (walking distance)