

AOAC Europe Section initiative on:

“Best Practices for Bioassay Testing of  
Food and other Complex Mixtures”

**Maricel Marin-Kuan, Ph D**  
**AOAC International Member**

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# BRIEF OVERVIEW OF THE TOPIC



Grow attention to the use of *in vitro* methods to identify potential hazards of concern and understand mechanism of toxic effects with relevance in the human context



Alignment needed for the transition of animal-free regulatory system for the safety assessment of chemicals and **mixtures** (food, packaging, environmental)



Need of a framework/guidelines towards the validation & **harmonization of bioassays methods** to build robust ground for reliable data analyses and therefore biological interpretation.

# IMPORTANCE & IMPACT

## What is the rationale & the importance of this topic?

- Suitability of *in vitro* methods typically validated for use with pure chemicals complex mixtures like food
- Underlying issues in the *in vitro* field for applications in food and other mixtures which need further attention for best practices (e.g; *mixtures preparation, accuracy, reliability, reproducibility, extrapolation*)

## Who is impacted by this topic?

- Experts and stakeholders from packaging, environmental (water, soil, agro), food & beverages, regulators & government, academia, contract research laboratories, raw material suppliers and technology providers

## How urgent is the need to address the topic?

- Transition towards harmonization and acceptance of *in vitro* practices by regulatory authorities – 3Rs (non-animal testing) alignment
- Critical limiting factors for a reliable approach to characterize complex mixtures



# CHALLENGES & GAPS POSED



- Challenges posed by the topic:
  - Building a robust ground considering drivers and limitations when defining the requirements for qualification (reliable data analyses) & validation of bioassays testing on food and other complex mixtures towards the **harmonization and the acceptance** of *in vitro* practices by regulatory authorities



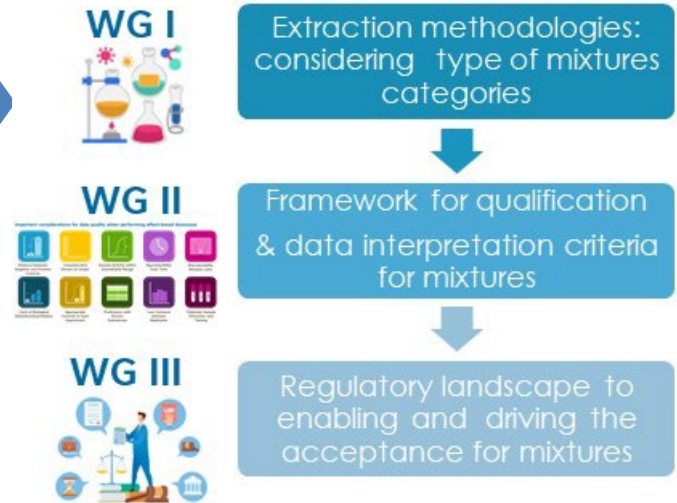
- Identified gaps in the topic:
  - Integration of fundamental upstream boundaries including end-to-end process for sample preparation, lack of best laboratory practices & data interpretation and extrapolation guidelines.

# STATUS ACTIVITY

- Various organizations joined a AOAC Europe initiative a workshop held in 2023 in Amsterdam (ISEAC conference).
- Based on workshop discussion, working groups (WGs) on key identified topics on food and other mixtures were formed.
- A state-of-the-art review publication on “Best practices for mixtures including group opinion to be published (2024-2025)
- The WGs will identify drivers in the area for future validations (e.g; mixtures categories extraction, *in vitro* qualification parameters to consider when testing mixtures, harmonization data interpretation)



## AOAC WGs TOPICS



## Coming project meetings and follow-up discussions:



Symposium on Recent A11<sup>th</sup> International advances in Food Analysis

November 5-8, 2024; Prague, Czech Republic

For further information please contact AOAC President:  
Dr. Thomas Gude at [tgu@thomasgude-gmbh.ch](mailto:tgu@thomasgude-gmbh.ch)