QSAR APPLICATION TOOLBOX

ADVANCED VIRTUAL TRAINING WORKSHOP - PART II

AGENDA

Day 1

I. **Metabolism use –** Learn about the available metabolism simulators and observed metabolism databases within QSAR Toolbox what type of information they provide. Discover the different scenarios in which this information can be applied to identify suitable analogues for read-across purposes, such as searching for analogues sharing the same metabolic pattern or the same active metabolite, refining a chemical category by excluding chemicals with different metabolic activation, predicting substances using data for their active metabolite, and more. Each scenario is illustrated with practical case studies, helping you understand how to use metabolism data effectively in real-world assessments.

II. **Observed metabolism data –** Explore databases with observed metabolism data in QSAR Toolbox and gain detailed insights into documented metabolic maps and reported quantities of metabolites. Learn how to apply specific filters to focus on metabolites of interest (e.g. rat metabolites, found in urine), enabling more targeted analysis.

III. **Alert performance and its application – Part II –** You already know what alert performance is, but in this second part you will take it further. Learn how to check the predictability of the alerts identified as a result of metabolic activation and find out how to select the most appropriate alert for searching analogues when multiple mechanisms after metabolism.

Day 2

I.   **Category consistency** – Discover how the consistency of your chemical category can vary depending on the target endpoint. Evaluate your category by analyzing key aspects of similarity—physicochemical, structural, mechanistic, and ADME properties. Build stronger weight of evidence and develop clear, well-supported justifications to enhance your reporting and support regulatory submissions.

II.   **Toolbox reports: justification documents** – Refresh your knowledge of Read-across assessment framework (RAAF) scenarios and the associated assessment elements through hands-on training focused on category approaches for read-across. Compare requirements for ecotoxicological vs. human health endpoints and learn through selected practical case studies.

III.   **Predicting higher tier endpoints (HTEs)** – Take on the most challenging cases in chemical assessment and learn how to approach complex endpoints for prediction. Discover the data and knowledge sources available in Toolbox for higher-tier endpoints, including repeated dose toxicity, developmental and reproductive toxicity, and carcinogenicity. Learn how to analyse the observed data for the analogues. Understand the key modelling concepts, and explore strategies for different cases including cases where analogues are limited or unavailable. Analyse questions like:

- What is the quantity of the parent chemical after metabolism and is it enough to cause effect?
- Are the (a)biotic transformations of the parent chemical fast?
- Which of the transformation products need to be considered in the analysis and what are their quantities?
- In case of toxic metabolite(s), how to estimate the dose of the parent chemical which will not lead to generation of these metabolites in an amount to cause harmful effects?
- Is it possible to streamline the entire workflow for predicting HTEs?

Find out also how to define other relevant endpoints to support the hypothesis for the main target endpoint and how to collect enough weight of evidences for more reliable predictions.