

QSAR APPLICATION TOOLBOX BASIC TRAINING WORKSHOP

BARCELONA, SPAIN

1-2, June 2015

AGENDA

Monday, 1 June 2015 (09:00 – 17:30)

- 09:00 -09:30 Registration and Toolbox loading onto computers. Welcome and Introductions/Announcements.
- 09:30-10:00 QSAR Principles. Toolbox description. Demonstration.
- 10:00-11:00 Introducing basic functionalities (parallel running CAS 66-25-1 for IGC50)
- Input – single chemical or list of chemicals. QA of chemical ID
 - Profiling – explanation of identified categories
 - Extracting data – data source, quality of data, building data matrix
 - Forming categories – use of empirical and mechanistic categorizations
 - Data gap filling
 - Reporting
- 11:00-11:30 Coffee Break
- 11:30-13:00 Parallel running. Enhanced functionalities and analysis.
- Skin sensitization and Mutagenicity (-/+ S9); CAS # 13197-76-7 (lauryl hydroxysultaine)
 - Predicting CAS # 120-82-1 (1,2,4-trichlorobenzene);
 - ✓ Bioconcentration; Cyprinus carpio, 56 days;
 - ✓ Biodegradation
 - ✓ Acute aquatic toxicity (Pimephales promelas, LC50, 96 h)
 - ✓ Saving QSAR as a regression model.
- 13:00-14:15 Lunch

14:15-15:30 Parallel running. Enhanced functionalities and analysis – Part I.

- Dynamic conversion of parameter units
- “Sufficiency” of the QSAR accuracy and variation of experimental error
- Saving models and model applicability domain – building (QMRF)
- Reporting prediction results. Standard reports
 - ✓ Toolbox Prediction Reporting Format (TPRF)
 - ✓ Chemical Model Reporting Format (QMRF)
 - ✓ Chemical Category Reporting Format (CCRF)
- Using derived models for predictions within the model applicability domain
- Screening external inventory (DSL) with obtained model

15:30-16:00 Coffee Break

16:00-17:30 Enhanced functionalities and analysis.

- Skin allergy of 4-nitrobenzoyl chloride (CAS 122-04-3)
 - ✓ Scale conversion – application for combined use of data obtained by different assays (EC3 scale; Positive/Negative scale)
 - ✓ Model domain derived by Toolbox
 - ✓ Saving SAR as a categorical model

17:30 Adjourn

Tuesday, 2 June 2015 (09:00 – 17:00)

09:00-11:00 Enhanced functionalities and analysis – Part II.

- Predicting Carcinogenicity of CAS 60784-46-5. Collecting weight of evidences (WoE).
 - ✓ AMES (-S9;+S9) – OFG
 - ✓ Chrom. Aberration
 - ✓ Carcinogenicity
 - ✓ Demonstrating the Model domain
 - ✓ Saving SAR a categorical models
 - ✓ Apply SAR on inventory
- Predicting Skin sensitization of Lauryl hydroxysultaine CAS 13197-76-7

- ✓ Demonstrating the Model domain
- ✓ Saving SAR as a categorical models
- Predicting acute toxicity (fish) of 3,4-Xylidene - CAS 95-64-7 (using of custom profiler Crowded anilines)
 - ✓ Filtering by QA and test conditions.
 - ✓ Demonstrating the Model domain
 - ✓ Saving QSAR (regression) models.
- Reporting prediction results.
- Profiling and metabolism (CAS 13013-17-7) – using MetaPath platform
- Predictions of CAS 13013-17-7:
 - ✓ Acute toxicity
 - ✓ AMES (-S9, +S9)

11:00-11:30 Coffee Break

11:30-13:00 Enhanced functionalities and analysis – Part II (contd.)

13:00-14:15 Lunch

14:15-15:30 Parallel running of Toolbox on selected examples

- Fate, Ecotoxicity and Toxicity effects of furfural (CAS 98-01-1)
 - ✓ Biodeg – with biodegradation fragments (not strict) + similarity
 - ✓ Acute toxicity fish
 - Using a new category
 - The complementarily of OECD and OASIS protein binding profiles
 - Filter by test conditions (holds for data point – not for chemicals) – select a single fish (*Poecilia reticulata*)
 - ✓ Acute toxicity Daphnia - reproduction
 - ✓ Acute toxicity Algae
 - ✓ Ames (-S9, +S9). Alert reliability.
 - Positive alerts are just categorization tools
 - Positive alerts do not necessarily mean positive effects
 - ✓ Skin sensitization - LLNA
 - The role of metabolism – Autoxidation; using different SS scales in data gap filling
 - Support from TIMES model – docked to Toolbox

15:30-16:00 Coffee Break

16:00-17:00 Enhanced functionalities and analysis – Part III

- Fate, Ecotoxicity and Toxicity effects of Dodecyloxyethanol (CAS 9002920)
 - ✓ Biodegradation
 - ✓ Acute fish - with organic functional groups – nested
 - ✓ Genotoxicity – AMES (using Filter by strain in DGF and remove (97A; according to OECD Guideline 471 four strains are necessary; section 4.2 in the report)
 - ✓ Skin sensitization
- The capabilities of protein binding potency – predicting Ecotoxicity (IGC50) of CAS 557-48-2
- Predicting genotoxicity and carcinogenicity of 2-Propenoic acid, 2-methyl-, methyl ester, CAS 80-62-6 (validating experimental data for carcinogenicity)
 - ✓ AMES mutagenicity – +S9 and -S9 – use ECOSAR as a primary classification
 - ✓ Chromosomal aberration (CA) – indication for positive effect
 - ✓ Carcinogenicity

17:00 Presentation of Certificates and Adjourn