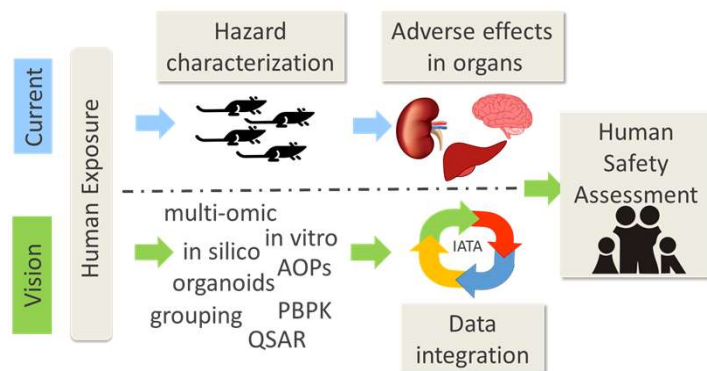


The Read-Across Case Study Concept – Gain Confidence in the Application of New Approach Methods

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Current situation

- Human risk assessment (RA) of chemicals derives thresholds below which compounds are considered to be safe
- RA is based on toxicological effects observed in animal studies
- How to replace, refine or reduce animals testing by new approach methodologies (NAMs)?



IATA - integrated approach to testing and assessment; AOP - adverse outcome pathways; QSAR - quantitative structure activity relationship; PBPK - physiology-based pharmacokinetics

Gain confidence into NAMs



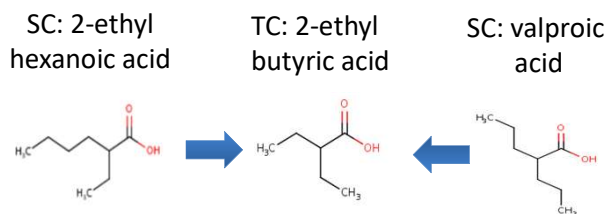
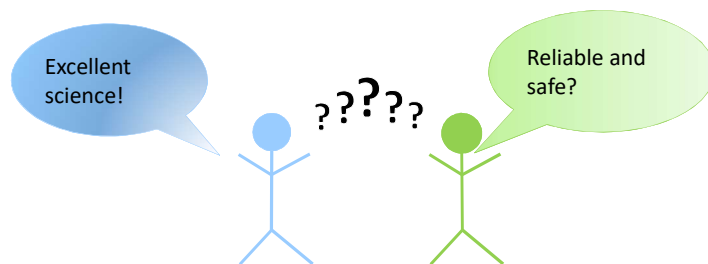
- Multidisciplinary teams needed
- Joint efforts in case studies to solve a regulatory problem

Why read-across case studies?

- Read-across is an approach in which the toxicological properties of a target compound (TC) are predicted using appropriate toxicological data from similar source compounds (SCs)
- NAMs are used to prove a shared mode of action and bioavailability of SCs and TCs
- Animal data can directly be compared to NAM data, this allows uncertainty assessment for SCs
- Case studies provide practical learnings and facilitate acceptance by stakeholders

Opportunities and Challenges

- Testing batteries will replace animal studies
- Human models – high relevance, no interspecies differences
- How can we integrate different types of data into RA?
- Which assays are necessary for hazard characterisation?
- Can we use computational modelling to extrapolate the in vitro effect concentration to a human threshold?



Read-across is possible in case of similar toxicodynamic and toxicokinetic properties

