

Break-out session: case studies

Case study from SEURAT-1

Perfluorinated alkyl acids: direct acting toxicant category supported by ToxCast evidence

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Application of the ECHA Read-Across Assessment Framework (RAAF) to the SEURAT-1 Read-Across Case Study on Perfluoroalkyl Acids

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In the series of read-across case studies carried out in the EU SEURAT-1 initiative, aiming at reducing uncertainty of read-across prediction by a strengthened weight-of-evidence provided by new alternative methods (NAM) data, the perfluorinated alkyl acids represents the scenario of a category of substances that are direct-acting toxicants (Schultz et al 2015). In this scenario it is the parent compounds, unaltered by metabolism, that interact with the same in vivo biological targets to elicit similar toxicity via a consistent mode of action.

The perfluoroalkyl acids (PFAA) category is comprised of a small congeneric series (C7-C10) of straight-chain perfluoroalkyl acids. Supporting data is also provided by analogues flanking the category, namely C6, C11, and C12 PFAA. The purpose of the read-across is to fill data gaps for 90-day oral repeated dose toxicity of category members. Based on quantitative variations in effects (potency) across category members and flanking analogues, the proposed read-across is based on a 'worst-case' category member approach. In order to establish the 'worst-case' category member, the central issues that must be addressed in this read-across justification are the differences in toxicokinetics and toxicodynamics between category member parent substances that lead to the differences in the observed strength of effects.

The ECHA Read-Across Assessment Framework (RAAF) with the scenario specific Assessment Elements (AEs) was applied to this case study in order to facilitate a systematic assessment of the scientific robustness of the read-across justification and to help identify any knowledge and/or evidence gaps that lead to uncertainties in the read-across prediction. The RAAF assessment was developed initially only considering traditional in vivo toxicity data and subsequently adding consideration of 'new approach methods' (NAM) data from US EPA ToxCast and EU SEURAT-1 project to highlight the impact of the NAM data on the weight of evidence supporting the read-across proposal.

The break-out session will analyze the PFAA case study read-across justification in the context of the RAAF. Special emphasis will be placed on discussion of the contribution of the NAM data to the weight of evidence and the resulting impact on the degree of uncertainty associated with the proposed read-across.