

SC 13: Adverse Outcome Pathway development: theory and practice

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Abstract

An adverse outcome pathway (AOP) is a conceptual framework that organizes existing knowledge concerning biologically plausible, empirically-supported links between molecular-level perturbation of a biological system and an adverse outcome at a level of biological organization of regulatory relevance. Systematic organization of information into AOP frameworks has the potential to support application of mechanistic data in regulatory decision-making. However, for the scientific community to collectively develop a useful AOP knowledgebase that encompasses toxicological contexts of concern to human health and ecological risk assessment, it is critical that AOPs be developed in accordance with a consistent set of core principles. AOP development is currently being formalized around a set of internationally harmonized principles. Several papers have recently been published describing best practices in AOP development, and the OECD issued a guideline and handbook on developing AOPs. The goal of this short course is to provide the necessary background on the AOP concept and to outline the information that is required for formal AOP description. We will further focus on the AOP Wiki as a knowledge sharing tool for online collaborative AOP development that is intended to facilitate reuse of previously described AOP elements and to grow into a publically accessible AOP knowledgebase.

Course objectives

- To provide the necessary background on the AOP concept to start developing AOPs
- To share recently published best practices and real-life examples of AOP development
- To introduce the AOP Wiki as a knowledge sharing tool for online collaborative AOP development
- To discuss the OECD guideline and handbook for AOP development
- To explain the procedure and criteria for submitting an AOP to the OECD

Course level

Introductory