Abstract Title:

Overview of an internationally-harmonized program for adverse outcome pathway development

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Abstract:

Adverse outcome pathways (AOPs) are critical frameworks for organizing knowledge concerning the scientifically-credible predictive linkages between toxicological observations made at molecular and cellular levels (e.g., via molecular screening assays, biomarker responses, or chemical-biological interactions predicted from quantitative structure activity relationships [QSARs]) and adverse outcomes that occur at levels of organization relevant to risk assessment (e.g., impacts on survival, growth, reproduction in the case of ecotoxicology). The Organization for Economic Cooperation and Development (OECD) is fostering the development of AOPs to (1) inform test guideline development, particularly relative to more mechanistically-oriented and/or efficient alternatives to traditional whole animal tests with apical endpoints; (2) support application of Integrated Approaches to Testing and Assessment; and (3) complement the use of the OECD QSAR toolbox for grouping chemicals. To aid the development of high quality AOPs suitable for regulatory application, the OECD published a guidance document and template for developing and assessing AOPs and is implementing a knowledge-base for storing, organizing, and disseminating AOP knowledge. The guidance and template were designed to aid experts in assembling and presenting the weight of evidence supporting predictive relationships represented in the AOP. In an effort to help coordinate and harmonize international AOP development efforts, individual experts and organizations are invited to submit AOP project proposals to OECD's Extended Advisory Group on Molecular Screening and Toxicogenomics (EAG MST). This presentation will

describe the purpose and process for submitting AOP project proposals, developing AOPs in a format compatible with the AOP knowledge-base and suitable for scientific review and obtaining endorsement of the AOP by OECD's expert groups and regulatory authorities. The goal of this presentation is to foster participation from both the ecotoxicology and human health research communities in developing AOP knowledge that will provide a foundation for new approaches to risk assessment and regulatory decision-making. *The contents of this abstract neither constitute nor necessarily reflect US EPA Policy nor the views of OECD member countries.*