

## **Applying Bioaccumulation Data to Better Inform Human and Ecological Risk Assessment of Chemicals**

Jung-Hwan Kwon, Mark Bonnell, Beate Escher

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Chemical regulations worldwide evaluate the bioaccumulation potential of chemical substances to protect human and ecosystem health. The assessments rely on partitioning properties such as octanol/water partition coefficients ( $K_{ow}$ s) and experimental bioconcentration factors (BCFs) using aquatic organisms and other bioaccumulation metrics such as the bioaccumulation factor (BAF). Bioaccumulation is a result of complex absorption, distribution, metabolism, and excretion (ADME) processes and bioaccumulation potential of chemical substances depends not only chemical properties but also physiology of organisms and their ecological positions. Standardized laboratory tests for BCFs mostly using aquatic organisms provide limited information about bioaccumulation potential of chemicals, at substantial financial and animal expense. One role of SETAC is to discuss scientific advances to inform the scientific and regulatory communities. This session will help to foster communication between the regulatory and research communities on the role of bioaccumulation in human and ecological risk assessment of chemicals, including the "domain of applicability" for bioaccumulation information. This includes application of bioaccumulation criteria as well as the role of bioaccumulation in a risk assessment context (e.g., the role of bioaccumulation in human and ecological exposure assessment). Specific topics in this session include but are not limited to: the recent advances in the understanding of bioaccumulation processes, field monitoring and modelling studies, trophic transfer both in aquatic and terrestrial ecosystems, human exposure to bioaccumulative substances, integrated testing strategies, proposals to refine current regulatory bioaccumulation assessment, and case studies of how bioaccumulation data can be used beyond bioaccumulation assessment.