

令和8年度第1回神経研究所所内セミナー

First In-House Seminar of the Institute of Neuroscience, FY2026



Department of
MOLECULAR THERAPY
National Institute of Neuroscience
NCNP



Adverse Outcome Pathway (AOP) development and harmonization in OECD Guest Seminar

Dr Shihori Tanabe

Division of Risk Assessment,
Center for Biological Safety and
Research, National Institute of
Health Sciences (NIHS)

Time/日時: July 29th, 2026
2026年 7月 29日 (水)
15-16

Venue: Seminar Room, Research
Building 3

場所: 研究所3号館 セミナールーム



Abstract

The development of Adverse Outcome Pathways (AOPs) for evaluating the health effects of toxic substances is progressively advancing within the Organisation for Economic Co-operation and Development (OECD). As diverse experts worldwide contribute to this framework, data harmonization within the AOP-Wiki (<https://aopwiki.org>) repository has become increasingly critical. Harmonizing and reusing modular elements (Key Events; KEs) is essential for the efficient generation of AOP networks. To this end, this study focuses on the international harmonization of reactive oxygen species (ROS)-related events. Between May 2021 and May 2026, a total of seven international Mystery of ROS (MoR) conferences were held online, resulting in the successful development of harmonized KE1940 and KE1869. Notably, during the 6th MoR conference in May 2025, the harmonization of KE1940 with KE1115 was significantly advanced. Furthermore, to facilitate the structured development of AOPs, the OECD introduced a coaching program in 2019, which has driven recent revisions of the AOP Developers' Handbook and the AOP Coach Guide. This program has successfully fostered international collaborations, streamlining the harmonization of ROS-related KEs. With the escalating demand for ontology-based KE harmonization, utilizing these harmonized KEs within the AOP-Wiki is vital. Future efforts should target the creation of network-hub KEs and encourage their adoption across broader scientific communities. By balancing academic research with regulatory application, these collaborative initiatives continue to promote robust AOP development, coaching, and peer-review processes. Eliminating redundancies to ensure high-quality KE utilization in the AOP-Wiki remains indispensable. Through platforms like the MoR conferences, the scientific and regulatory understanding of ROS-related toxicological outcomes is steadily expanding, paving the way for advanced predictive safety assessments.

担当・連絡先： 遺伝子疾患治療研究部（青木 内線5221）