

The Drug Metabolism and Pharmacokinetics (DMPK) Interest Group (IG) Workshop at 73rd ASMS Annual Conference on June 1 - June 5, 2025 in Baltimore, MD

The Drug Metabolism and Pharmacokinetics (DMPK) Interest Group (IG) Workshop was held on Tuesday, June 3rd from 5:45 to 7:00 pm. The coordinator, HsinPin Ho (BMS), and the co-coordinator, Yongle Pang (GSK), led the workshop. The DMPK workshop attracted approximately 90 scientists' attendance, reflecting ongoing enthusiasm and engagement in the field. HsinPin introduced the DMPK IG goals and welcomed attendees. Both HsinPin and Yongle moderated the session featuring a series of invited speakers, each sharing perspectives on the theme: "Unlocking the Full Potential of Discovery and Early Development DMPK Support: Revolutionizing Efficiency, Innovation, and Integration with Mass Spectrometry." The session concluded with an interactive panel discussion and Q&A.

1. Review of the DMPK IG Goals

The DMPK Interest Group's goals remain focused on providing a discussion forum to mass spectrometry practitioners in drug metabolism, pharmacokinetics, qualitative and quantitative, non-regulated bioanalysis. The group aims to:

- Recent advances in techniques and methodologies for metabolite identification and pharmacokinetic bioanalysis
- Interpretation of and application of related guidance documents (i.e., MIST, ICH M3, DDI, human ADME mass balance)
- Sharing of best practices across industry and academia
- Provide inputs on ASMS conference program of interest to DMPK scientists
- Reach out and coordinate with related groups to complement scope and broaden outreach to scientific community

2. 2025 and future DMPK IG Coordinators

2025: HsinPin Ho (Coordinator): hsinpin.ho@bms.com

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Zhihui Zhang (Co-coordinator) zhihui.zhang@bms.com

3. DMPK IG workshop agenda for 2025

Four speakers shared their experiences and recommendations on the theme “Unlocking the Full Potential of Discovery and Early Development DMPK Support: Revolutionizing Efficiency, Innovation, and Integration with Mass Spectrometry”:

- Advancing throughput in preclinical PK/PD using acoustic droplet ejection mass spectrometry by Dr. Michelle Robinson (Merck)
- Coupling Proteomics and Targeted Protein Bioanalysis to Enhance Efficiency and Impact in Tissue Biomarker Analysis by Dr. Eugene Ciccimaro (BMS)
- Novel Bioanalytical Tools in Support of DMPK and Clinical Studies by Dr. Kasie Fang (GSK)
- Advancing Fit-for-Purpose Bioanalysis and Integrated DMPK Support in Drug Discovery and Early Development by Dr. Qin Ji (AbbVie)

The panel discussion addressed key questions for maximizing the impact of mass spectrometry in DMPK, including:

- Efficiency gains in DMPK support through MS integration.
- Innovative MS technologies and their application in DMPK studies.
- Main challenges and solutions in implementing MS for DMPK.
- Case studies and success stories where MS played a pivotal role.
- Future trends in MS application for DMPK support.
- Strategies for cross-functional collaboration and integration to enhance DMPK workflows.

4. Update on the DMPK Interest Group’s Impact on the 2025 ASMS Program

We thank ASMS for being receptive to our request and proposals for DMPK oriented oral sessions for the 2025 meeting. This responsiveness was reflected in several DMPK related oral sessions and the positive feedback from the Interest Group attendees.

5. Potential topics for ASMS 2026 Oral Session Topics from DMPK-IG Attendees

- Protein biomarker quantification using mass spectrometry in DMPK
- Metabolism of new modalities
- Precision medicine and LC/MS
- Gene therapy
- Proteomic analysis of covalent drugs
- Unusual reactions in mass spec for bioanalysis (cyanide release, oxidation)

Current Officers for the ASMS DMPK Interest Group:

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- Yongle Pang (Coordinator for 2026)
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