Ming Hsien Kung, Ph.D., DABT

PRESIDENT

CONTACT INFORMATION

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PROFESSIONAL PROFILE

Dr. Ming Kung is a board-certified toxicologist and President of ToxStrategies. He has over 20 years' experience in the petrochemical and biotechnology industry managing diverse technical and regulatory programs to enable safe use and regulatory compliance of products and effluents from research and development (R&D) to commercialization.

Dr. Kung's experience includes planning and executing hazard and safety assessments, preparing and evaluating REACH registrations, developing and reviewing occupational exposure limits (OELs), and developing innovative informatics approaches to facilitate rapid and comprehensive chemical regulatory surveillance. A strategic leader with deep expertise in health, environmental, and regulatory hazard and safety assessment, Dr. Kung applies structured approaches to develop clear and actionable technical and business strategies. He uses sound regulatory scientific strategies to capitalize on opportunities or to understand and address potential threats throughout the product and process life cycle. These include developing and executing a digital strategy for health and environmental hazard and safety assessment, as well as establishing a technical strategy for quantitative read-across and hazard assessment for substances of unknown or variable composition, complex reaction products, or biological materials (UVCBs), including both *in vitro* and *in silico* approaches.

Dr. Kung received his Ph.D. and M.S. in toxicology from the University of Rochester School of Medicine and Dentistry, and a B.S. in chemistry from the State University of New York College of Environmental Science and Forestry. Dr. Kung became a Diplomate of the American Board of Toxicology (DABT) in 2016.

EDUCATION AND DEGREES EARNED

2011	Ph.D., Toxicology, University of Rochester, School of Medicine and Dentistry, Rochester, NY
2002	B.S., Chemistry, State University of New York (SUNY), College of Environmental Science and Forestry, Syracuse, NY

CERTIFICATIONS

2016—present	Diplomate, American Board of Toxicology (DABT)

PROFESSIONAL ASSOCIATIONS

2008—present	Member, Society of Toxicology (SOT)
2009—present	Member, SOT American Association of Chinese in Toxicology Special Interest Group
2013—present	Member, SOT *In Vitro* and Alternative Methods (IVAM) Specialty Section
2013—present	Member, SOT Risk Assessment Specialty Section
2020—present	Member, SOT Sustainable Chemicals Through Contemporary Toxicology Specialty Section

PROFESSIONAL LEADERSHIP AND SERVICE

2013—2014	Chair, Technical Committee, Fatty Esters Umbrella Consortium
2023—2024	Chair, Association of Southeast Asian Nations (ASEAN) Regulatory Cooperation Platform Chemical Risk Assessment Working Group

SELECTED PROFESSIONAL EXPERIENCE

Safety Assessment Digital Strategy Development and Execution

- Led establishment of an organization-wide digital strategy at ExxonMobil to standardize and streamline data and knowledge management and analysis, accelerating health and environmental assessment workflows and enabling AI to leverage curated hazard and safety assessment content.
- Established and executed a systems roadmap to maximally leverage existing regulatory compliance data platforms to drive efficiencies in other safety assessment workflows.
- Integrated organizational digital initiatives with corporate technology stack to ensure long-term sustainability.

Chemical Substances of Unknown or Variable Composition, Complex Reaction Products or Biological Materials (UVCBs)

- Developed quantitative approaches hazard assessment and read-across for hydrocarbon substances at ExxonMobil, enabling objective and transparent judgment of 'sufficient similarity' of such substances.
- Established *in vitro* testing capabilities for UVCBs and technical strategy to enable safety assessments from *in vitro* data.

Vulnerable Chemistry Screening

- Developed organizational approach and processes to enable vulnerability assessment across health, environmental, and regulatory domains. Enabled application programming interface (API) integration into formulator tools to improve decision-making during early-stage R&D processes.

PUBLICATIONS AND TECHNICAL REPORTS

Redman AD, Key T, Koster van Groos P, Smith A, Sutherland C, Reddington T, **Kung M**, Davis C, et al. 2025. Integrated assessment of whole effluent toxicity tests and chemical characterization of treated Permian basin produced water. ACS ES&T Water 5(9):5275-5286; doi: 10.1021/acsestwater.5c00389.

Lampi MA, Therkorn JH, **Kung MH**, Isola AL, Barter RA. 2024. Current frameworks for environmental and health assessment of hydrocarbon streams and products are flexible and ready for alternative non crude oil-based feeds. Toxicol Res 13(4):tfae114; doi: 10.1093/toxres/tfae114. PMID: 39086642.

Bragin GE, Davis CW, **Kung MH**, Kelley BA, Sutherland MA, Lampi MA. 2020. Biodegradation and ecotoxicity of branched alcohol ethoxylates: Application of the target lipid model and implications for environmental classification. J Surg Deterg 23(2):383-403; doi: 10.1002/jsde.12359.

Gao R, Guan N, Huang M, Foreman J, **Kung M**, Rong Z, Su Y, Sweet L, et al. 2020. Read-across: Principle, case study and its potential regulatory application in China. Regul Toxicol Pharmacol 116(Oct):104728; doi: 10.1016/j.yrtph.2020.104728. PMID: 32649957.

Maurer LM, **Kung MH**. 2020. Mammalian toxicity testing of semilinear and branched alcohol ethoxylates. J Surf Deterg 23(5):921;935; doi: 10.1002/jsde.12408.

Goyak KO, **Kung MH**, Chen M, Aldous KK, Freeman JJ. 2016. Development of a screening tool to prioritize testing for the carcinogenic hazard of residual aromatic extracts and related petroleum streams. Toxicol Lett 264(Dec 15):99-105; doi: 10.1016/j.toxlet.2016.10.001. PMID: 27713023.

Kung MH. 2016. Critical Review of the Relationship Between IP346 and Dermal Carcinogenic Activity. CONCAWE Report No. 6/16. Brussels: CONCAWE. March. Available from: https://www.concawe.eu/wp-content/uploads/report-6-16-final-version-3.pdf.

Inzana JA*, **Kung MH***, Shu L, Hamada D, Xing LP, Zuscik MJ, Awad HA, Mooney RA. 2013. Immature mice are more susceptible to the detrimental effects of high fat diet on cancellous bone in the distal femur. Bone 57(1):174-83; doi: 10.1016/j.bone.2013.08.003. PMID: 23954757. *(*co-first authors*)

Kung MH, Yukata K, O'Keefe RJ, Zuscik MJ. 2012. Aryl hydrocarbon receptor-mediated impairment of chondrogenesis and fracture healing by cigarette smoke and benzo(a)pyrene. J Cell Physiol 227(3):1062-70; doi: 10.1002/jcp.22819. PMID: 21567390.