

Kay-Hooi Khoo, Distinguished Research Fellow (from 2012)

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I. Education

- 1989, B.Sc. in Biochemistry, Imperial College, University of London
- 1993, Ph.D. in Biochemistry, Imperial College, University of London

II. Professional Experience

- 1992 Postdoctoral Fellow, Imperial College, University of London, UK
 - 1994 Postdoctoral Fellow, Colorado State University, USA
 - 1996 Associate Research Fellow, Institute of Biological Chemistry, Academia Sinica
 - 2008 Research Fellow, Institute of Biological Chemistry, Academia Sinica
 - From 2010 - Professor, Institute of Biochemical Sciences, National Taiwan University
 - From 2012 - Distinguished Research Fellow, Institute of Biological Chemistry, Academia Sinica
 - 2012-2017 Deputy Director, Institute of Biological Chemistry, Academia Sinica
 - 2017-2019 Acting Director, Institute of Biological Chemistry, Academia Sinica
 - From 2019 - Executive Secretary, Academia Sinica Central Academic Advisory Committee
 - From 2001- Editorial Board Member, Glycobiology
 - From 2012- Editorial Board Member, Molecular and Cellular Proteomics
 - From 2018- Editorial Board Member, Glycoconjugate Journal
 - 2003-2018 Council Member, Taiwan Society of Mass Spectrometry
 - 2008-2017 Chair, Academia Sinica Mass Spectrometry Committee
 - 2009-2017 Steering Committee member, Asian Community of Glycoscience and Glycotechnology
 - From 2008- Council Member, Taiwan Proteomics Society
 - From 2018- Coordinator, Taiwan GlycoForum and GlycoNet@Academia Sinica
 - From 2023- President-Elect, Taiwan Glycoscience Alliance
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III. Descriptive Biography

Dr. Khoo received his Ph.D. in Biochemistry (1992) from Imperial College, London, UK. He then stayed at Imperial College as a Wellcome Trust Prize Postdoctoral Fellow for another year before moving to Colorado State University as a Heiser Fellow for Research in Leprosy and Tuberculosis and worked there for another 2 years. He started his independent research career at the Institute of Biological Chemistry, Academia Sinica, Taiwan in 1996, became a Distinguished Research Fellow in 2012, served as Deputy Director for 5 years and Acting Director for 2 years. He is now the Executive Secretary of the Central Academic Advisory Committee of Academia Sinica since 2019, which oversees the academic development of Academia Sinica.

Dr. Khoo's research interests are focused on the development and applications of concerted mass spectrometry (MS)-based analytical techniques for high sensitivity mapping and sequencing of complex glycans in the context of targeted and global glycomics. In recent years, he has devoted much effort in pioneering MS-based sulfoglycomics, and established a versatile high throughput nanoLC-MS2/MS3-based high precision glycotope-centric glycomics platform facilitated by in house development of data mining computational tools. Current efforts are directed at identifying the myriad sulfoglycotopes mediating immune and glial cells interactions. In parallel, he is developing methods enabling direct glycopeptide sequencing, focusing on delineating site-specific glycosylation pattern of multi N- and O-glycosylated membrane glycoprotein receptors in conjunction with structural and functional studies. Dr. Khoo received the 2018 ASBMB/MCP Lectureship award for contribution to the emerging fields of glycomics and glycoproteomics.

IV. Awards

- 2014 Taiwan Society for Mass Spectrometry Investigator Award
 - 2018 American Society for Biochemistry & Molecular Biology Molecular and Cellular Proteomics (ASBMB MCP) Lectureship Award
 - 2024 NSTC Academic Research Award
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V. Research Expertise & Current Research Focus

- Mass Spectrometry, Protein Modification Analysis, Glycomics, Glycoproteomics, Glycobiology
 - Developing a glycotope-centric nanoLC-MS₂/MS₃-based (sulfo)-glycomics platform for applications to a wide range of human and murine cells and tissues, particularly those of immune and nervous systems;
 - Glycoproteomics towards identifying site-specific protein carriers of target glycotopes and physiologically relevant ligands of Siglecs
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VI. Publication Record

- Total 236 publications in peer-reviewed SCI journals to date (2024 Sept)
 - H-index: 59 (Web of Science); 71 (Google Scholars)
 - Full publication list, see: WOS Researcher ID: [E-1989-2019](#); or ORCID: [0000-0003-2906-406X](#)
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