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Education

1974-1978	B.S., Department of Biology, Tunghai University, Taiwan
1981-1983	M.S., Institute of Microbiology and Immunology, National Yang Ming University, Taiwan
1984-1986	M.Ph., Department of Human Genetics, Yale University, U.S.A.
1984-1988	Ph.D., Department of Human Genetics, Yale University, U.S.A.

Research and Professional Positions Held in Chronological Sequence

1987-1988	Teaching Assistant, Department of Human Genetics, Yale University, U.S.A.
1988-1989	Postdoctoral Fellow, Department of Medicine, Yale University, U.S.A.
1989-1995	Associate Research Fellow, Institute of Biomedical Sciences, Academia Sinica, Taiwan
1995-2010	Full Research Fellow, Institute of Biomedical Sciences, Academia Sinica, Taiwan
2010-present	Distinguished Research Fellow, Institute of Biomedical Sciences Academia Sinica
1997-1999	Deputy Director, Institute of Biomedical Sciences, Academia Sinica
2004-2006	Deputy Executive Secretary, The Central Advisory Committee, Academia Sinica
2006-2007	Executive Secretary, The Central Advisory Committee, Academia Sinica
2008-2009	Director, Advisory Office, Ministry of Education, ROC
2022-2026/6	Vice President, Academia Sinica

Research Interests

1. Cell Biology; Neuroscience; Cancer Biology
2. Centrosome/Cilia Biology and Related Human Diseases

Cell division in higher animals requires coordinated DNA replication and centriole duplication. While DNA replication has been extensively characterized, the molecular mechanisms governing centriole biogenesis remain incompletely understood. Centrioles are essential for centrosome function, ciliogenesis, and mitotic spindle organization. Defects in centrosome-associated proteins are strongly linked to primary microcephaly (MCPH), a neurodevelopmental disorder characterized by reduced brain size and intellectual disability.

Dr. Tang's laboratory has made major contributions to elucidating the molecular mechanisms of centriole duplication and their roles in human disease. His group first identified the centrosomal proteins STIL (EMBO J, 2011), CEP135 (EMBO J, 2013), and RTTN (Nat Commun, 2017) as associated partners of CPAP, forming functional complexes that regulate distinct stages of centriole assembly and elongation. Importantly, mutations in CPAP, STIL, CEP135, and RTTN are associated with MCPH. Using mouse and brain organoid models, his lab found that defects in the CPAP gene lead to neuronal cell death, premature neuronal differentiation, and severe brain developmental defects, supporting the hypothesis that impaired centriole replication disrupts cortical neurogenesis and causes microcephaly (J Cell Sci 2020; Front Cell Dev Biol, 2022).

His laboratory further demonstrated that CPAP (Nat Cell Biol 2009) and CEP120 (J Cell Biol 2013) regulate centriole elongation, and reveal the mysterious role of ciliogenic role of CEP120 in Joubert Syndrome, a congenital cerebellar disorder (Genes & Dev 2022). In addition to this, his lab also found that myosin-Va-mediated transportation of preciliary vesicle to the mother centriole is the earliest event that defines the onset of ciliogenesis (Nat Cell Biol 2018). In cancer research, his lab found that STIL overexpression can induce centriole amplification, genomic instability, and FOXM1-mediated oncogenic signaling (J Biomed Sci 2022). Future studies will combine molecular, genetic, mouse, and human brain organoid approaches to investigate centrosome-related neurodevelopmental disorders and cancer.

Major Honors and Awards

1992, 1995, 1998	The Outstanding Research Award, NSTC
2010, 2015, 2020	Academia Sinica Investigator Award
2011	The Phi Tau Phi Scholastic Honor Society Member
2014	Wang, Ming-Lin Outstanding Research Award
2014	The Ministry of Education Academic Award
2022	Academician, Academia Sinica