



Nature Science Cafe Asia

— Biotech Science & Investment Forum —

Nature Speakers

Targeting Synaptic Dysfunctions in Brain Disorders: Therapeutic Opportunities with EphA4 Inhibitors

Nancy Y. Ip, PhD, MD, JP



Dean of Science; The Morningside Professor of Life Science; Director of the State Key Laboratory of Molecular Neuroscience, The Hong Kong University of Science and Technology

Nancy Ip is currently the Dean of Science, The Morningside Professor of Life Science, and Director of the State Key Laboratory of Molecular Neuroscience at The Hong Kong University of Science and Technology (HKUST). She received her PhD degree in Pharmacology

from Harvard Medical School, after which she held the position of Senior Staff Scientist at Regeneron Pharmaceuticals Inc. in New York. Since joining HKUST, she has served as Associate Dean of Science, Director of the Biotechnology Research Institute, and Head of the Department of Biochemistry.

Nancy Ip's major research interests are in neural development and function as well as drug discovery for neurodegenerative diseases such as Alzheimer's and Parkinson's diseases. She is well-known for her seminal discoveries in the biology of neurotrophic factors, which are proteins that promote the survival, development, and maintenance of neurons in the nervous system. She has also made important contributions towards understanding the molecular mechanisms underlying brain development and synaptic plasticity, and their dysregulation in neurological disorders. Using this knowledge, her research team aims to elucidate the pathophysiological mechanisms underlying neurodevelopmental disorders and neurodegenerative diseases, and identify drug leads for these brain disorders from Chinese medicine. Furthermore, she plays a significant role in the development of biotechnology in Hong Kong, and has launched prominent collaborations with major biopharmaceutical companies, thus placing HKUST on the map for cutting-edge R&D in molecular neuroscience.

As a highly accomplished researcher, Nancy Ip has published over 240 scientific papers with more than 16,400 SCI citations, and holds 23 patents. She is an Academician of the Chinese Academy of Sciences, a Fellow of the Academy of Sciences for the Developing World, and has received numerous awards and honors including the National Natural Science Awards (China's highest honor in the natural sciences), the L'OREAL-UNESCO for Women in Science Award (making her the first honoree in the life sciences from China), and the "Chevalier de l'Ordre National du Mérite" (National Order of Merit) by the French Government. She is also the senior editor of the Journal of Neuroscience, and an elected Councilor for two leading global organizations in the fields of neuroscience and pharmacology: the Society for Neuroscience and the CINP (Collegium Internationale Neuro-Psychopharmacologicum). Furthermore, she is a member of the Global Agenda Council on Brain Research of the World Economic Forum.

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Wnt Addiction of Genetically Defined Cancers Reversed by PORCN Inhibition

David M. Virshup MD



Director, Program in Cancer and Stem Cell Biology; Professor, Duke-NUS Graduate Medical School Singapore

David Virshup, MD, is the inaugural Director of the Program in Cancer and Stem Cell Biology at the Duke-NUS Graduate Medical School in Singapore, and is a tenured Professor of Pediatrics at Duke University in North Carolina, USA. Prior to moving to Singapore in 2007, he spent 17 years at the University of Utah, where

he held an endowed chair at the Huntsman Cancer Institute. While spending the majority of his time on laboratory-based research, until arriving in Singapore he was also a practicing pediatric hematologist/oncologist. His laboratory studies cellular signaling, with a focus on the Wnt signaling pathway. Virshup received his medical degree from Johns Hopkins University School of Medicine. He completed his clinical training in Pediatrics and Pediatric Hematology/Oncology at Johns Hopkins, while his research training was in the departments of Cell Biology and Anatomy, and Molecular Biology and Genetics at Johns Hopkins. He is a member of the American Society of Clinical Investigation, the Association of American Physicians, a Fellow of the American Association for the Advancement of Science and the Asia Editor for the Journal of Clinical Investigation.

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Is Necroptosis, an Inflammatory Programmed Cell Death, a Valid Therapeutic Target?

A/Prof John Silke LLB, PhD



Joint Division Head, Cell Signalling and Cell Death Division, Walter + Eliza Hall Institute for Medical Research

John completed a law degree in King's College, London, before seeing the error of his ways and completing a second degree in Biochemistry at Churchill College, Cambridge (1992). He completed a PhD in Zürich, Switzerland under Prof. Walter Schaffner, looking at the role of DNA methylation in the regulation of

transcription (1997). A Swiss fellowship allowed John to do a post-doc with Prof. David Vaux in the WEHI, Australia (1997-2005), where he focused on cell death mechanisms and in particular the role of Inhibitor of Apoptosis proteins (IAPs) in regulating cell death. After a five year stint running a lab in La Trobe University, Australia, he returned to the WEHI (2011) where his lab focuses on the programmed cell death pathways; apoptosis and necroptosis, and their intersection with cancer and inflammation.

He has a strong interest in translational research and is a member of the Scientific Advisory Board of TetraLogic Pharmaceuticals Corporation. In this capacity he has contributed to our understanding of how IAP antagonist drugs, now called Smac-mimetics, kill cancer cells (Vince, 2007) and the development of a well tolerated Smac-mimetic, called birinapant, that is performing well in clinical trials (Condon, 2014). At the WEHI he collaborates closely with the Chemical Biology division to generate new small molecule drug like compounds to investigate the biology of and treat disease (Hildebrand, 2014; Nachbur, 2015).

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Novel Cancer Therapeutics Derived from Aminoacyl-tRNA Synthetases

Sunghoon Kim, Ph.D. Professor and Director



Medicinal Bioconvergence Research Center (BIOCON), Dept. Molecular Medicine & Biopharmaceutical Sciences, College of Pharmacy, Graduate School of Convergence Science and Technology, Seoul National University, Korea

Sunghoon Kim is a professor at Seoul National University College of Pharmacy and Graduate School of Convergence Science and Technology, and also a director of "Medicinal

Bioconvergence Research Center (Biocon, <http://biocon.re.kr>)" that is the biggest national project in Korea for novel target and lead discovery. In this project, he is building up the pipeline of druggable "target and lead" packages for industrial development.

In academic community, he is globally recognized as a pioneer in the new biology and translational research of human aminoacyl-tRNA synthetases and their signaling network. He published more than 150 research articles in top-notched journals and filed more than 70 patents. He was nominated as a distinguished university professor and received several prestigious awards in Korea such as the best scientist award (2012), the scientist of the year (2006) and Korea science award (2003).

For educational and professional background, he received bachelor's degree at Seoul National University College of Pharmacy, master's degree at Korea Advanced Institute of Science and Technology Department of Biological Sciences, Korea and PhD degree at Division of Biology and Medicine, Brown University, USA. He worked as post-doctoral fellow at MIT and also as a senior research scientist of Cubist Pharmaceuticals, USA. He also worked as visiting professor at Scripps Institute, and as a founding scientist of ATYR Pharma, USA. He is currently a visiting scientist of Institute of Cell and Material Sciences, Kyoto University, and an advisor of National Center for Drug Screening, China.

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Needs Driven Innovation in Molecular Imaging

Professor Lawrence Ho Khek Yu



Vice Dean, Research, School of Medicine, National University of Singapore;

Senior Consultant, Division of Gastroenterology & Hepatology, National University Hospital

Professor Ho is an accomplished clinician and endoscopist, who has been invited to perform live case demonstrations in numerous international endoscopy workshops. He is also an established endoscopy trainer, who chairs the Asian Endoscopic Ultrasound Group to

promote regional endoscopic ultrasound training. Within a year, the group has successfully organized >10 workshops, and trained more than 300 trainees in the Asian region.

Perhaps, what defines him is his ardent pursuit of innovation in medicine. As an innovator, he is best known as the co-inventor for the ground-breaking technology of the Master and Slave Transluminal Endoscopic Robot (MASTER), which was used to successfully perform the world's first robotic endoscopic submucosal dissection in human patients. Both the inventors co-founded a start-up company, Endomaster, and received the

Singapore President's Technology Award in 2012. He recently co-founded a second company, Endofotonics, to develop Raman spectroscopic technique for realtime diagnosis of gastrointestinal tract diseases. He has published >170 peer-reviewed papers, >10 book chapters, co-edited 3 books, and held 12 biotech and medtech products.

Drug Discovery in Guangzhou: Intra-Articular Delivery of siRNA-Conjugates as First in Class DMOADs

Dr Micky Tortorella



Chief Technology Officer and Vice President, Drug Discovery Research and Technology Transfer, Guangzhou Institutes of Biomedicine and Health, Chinese Academy of Sciences, Guangzhou, China

Micky Tortorella is a former Senior Principal Investigator at Pfizer (2001-2009) with over 15 years of experience in the pharmaceutical industry. Prior to working at Pfizer he had a successful tenure as a Research Scientist at DuPont Pharmaceuticals (1993-1999). His previous work has focused on understanding the biochemical mechanisms involved in the turnover and degradation of the articular cartilage matrix, which led to the discovery of ADAMTS-4 and -5, enzymes responsible for matrix catabolism in arthritic diseases and cancer. Micky has led and provided direction to multiple discovery teams applying basic biology to the drug discovery process, including identification of novel targets, innovation in assay development and the advancement of small molecule inhibitors into clinical trials. He is regarded as a key opinion leader in the United States as well as internationally in osteoarthritis, metalloproteinase biology and drug discovery and has over 50 publications in top tier journals and 16 US and international patents.

Dr. Tortorella joined the Guangzhou Institutes of Biomedicine and Health (GIBH) in May 2009 where he is responsible for creating and leading an integrated drug discovery center focused on developing disease modifying pharmaceutical drugs in the areas of oncology, CNS, infectious diseases and arthritis. Since its inception his team has achieved six important milestones, including: (1) Centralization of key technology groups to support drug development; (2) Integration of project teams to enable effective advancement of drugs; (3) Development of a sustainable pipeline of projects with novel intellectual property (IP); (4) Establishment of key international partnership for the co-development of drugs; (5) Provision of key technical services to Southern China and (6) Creation of new companies in Guangzhou using IP matured in the Pipeline. A 7th milestone, which includes advancing new drug candidates into clinical trials in China, is expected to be achieved in 2015/16.

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