



From the clinic to the lab and back: an interview with Professor Eric Wai-choi Tse

Prof Tse (left) briefed the President and Vice-President of HKU during a visit to the HKUMed Laboratory of Cellular Therapeutics

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<https://doi.org/10.12809/hkmj-hc202502>

Professor Eric Wai-choi Tse is a distinguished physician-scientist specialising in clinical haematology and experimental oncology at The University of Hong Kong (HKU). Renowned for his exemplary and unwavering dedication both to community service and scientific research, Prof Tse has built a remarkable career marked by both excellence and compassion.

Prof Tse discovered his interests in haematology and oncology early on during medical school. He took a year out of the then 5-year medical curriculum at HKU to pursue an intercalated bachelor's degree in biomedical sciences in the Department of Pathology. Under the mentorship of the late Prof LC Chan, he studied the clonality of haematological malignancies using molecular biology techniques. This year was pivotal in solidifying his passion for research and inspired him to pursue a career in academia. Fuelled by an insatiable quest for knowledge and guided by the late Sir David Todd, he embarked on his doctoral studies under Prof Terry Rabbitts at the prestigious MRC Laboratory of Molecular Biology at the University of Cambridge following the completion of his medical degree at HKU. During this time, he honed and expanded his repertoire of molecular biology techniques, laying a robust foundation that would later prove invaluable in his career. He then returned to Hong Kong to complete his postgraduate medical training and rejoined HKU as an assistant professor. Prof Tse remains deeply grateful to his mentors, including Sir David Todd and Professors LC Chan, Terry Rabbitts, TK Chan, Raymond Liang,

and YL Kwong for their unwavering support and guidance.

When discussing his current research interests, Prof Tse radiates an infectious enthusiasm for his work. He has a particular interest in PIN1 (peptidylprolyl cis/trans isomerase), an intracellular enzyme, and its role in the pathogenesis of hepatocellular carcinoma. Throughout the interview, he maintains the importance of being open-minded and being receptive to new ideas. He believes one can uncover fresh perspectives and applications from exploring beyond one's own area of expertise. For instance, he co-authored an original research article exploring the connections between PIN1 and neurodegeneration alongside other PIN1 researchers whom he met at a neuroscience conference—an exciting and rewarding experience that would have been impossible had he confined himself to his own areas of expertise. Prof Tse is also investigating the use of arsenic trioxide in treating acute promyelocytic leukaemia, a highly treatable form of blood cancer. His work is shedding light on the different mechanisms through which arsenic trioxide potentially combats other cancers and its synergistic effects when combined with all-trans retinoic acid, another drug often used for treating promyelocytic leukaemia.

Prof Tse's approach to patient care is rooted in honesty, empathy, and clear communication. He emphasises the importance of being frank with patients about their conditions, explaining the nature of the disease and its treatment in simple, relatable

terms, often using analogies to aid understanding. Prof Tse believes in empowering patients to make decisions about their own treatment, tailoring his communication to their concerns and level of understanding. He recognises his role as a team player and the importance of collaboration in achieving better outcomes for his patients. Despite being a leading physician in his field, Prof Tse deeply values the insights and experiences he gains from working with his junior colleagues and views learning as a two-way process. Many of his juniors share novel approaches to patient care acquired from their training at other institutions, thereby fostering a collaborative environment where everyone works together towards a common goal of improving patient care. His humility and openness to new ideas serve as testaments to his open-mindedness and commitment to continuous growth.

Being a physician-scientist, Prof Tse occupies a unique place in the healthcare system. He believes that his roles as both a doctor and a researcher complement each other in many ways. His training in basic science has provided him with the skills needed to approach problems methodically and 'get to the bottom of the question'. On the other hand, his work in clinical trials has offered him firsthand experience with using new drugs, thereby equipping him with the expertise to use them effectively in his own practice. However, the combination of clinical demand and maintaining research output requires endless time, effort, and dedication. When asked how he manages such a hectic schedule, Prof Tse talks about the heartfelt experiences he has had in clinical practice and the appreciation expressed by both patients and their family members, some of

whom still send him Christmas cards many years later. Prof Tse is also passionate about his research and views it more as a hobby, in the same way that some people might play tennis or golf. As a hobby, his research is both something that he actively enjoys and also an indulgence, which means that the long hours spent both as a clinician and a scientist do not feel tiresome.

As a highly successful researcher, Prof Tse also shared some of the challenges he faced to get where he is today. Reflecting on his career, he believes that budding researchers must have the mental preparation and fortitude to deal with frustration at times. He believes that when one is faced with negative feedback, this should be viewed as constructive criticism and used as an opportunity to improve one's work.

Looking ahead, Prof Tse has a positive outlook on the advancements of haemato-oncological research. He is a firm believer that ongoing research in the field will continue to greatly benefit blood cancer patients, citing the adoption of oral drugs such as tyrosine kinase inhibitors over the use of haematopoietic stem cell transplantation in the treatment of chronic myeloid leukaemia to show the translational impacts of haematological research. He also mentions how modern laboratory techniques, coupled with the advent of gene and cell therapy, will remove previous barriers to research in the field and revolutionise blood cancer treatments. Prof Tse also predicts that in the coming decade haemato-oncological research will lead to safer drugs that avoid the 'toxic' chemotherapy approach, allowing patients to recover from malignancies without the massive toll on their own health.