

### **Mentor-Postdoc Spotlight Series 2018**



#### **Prof. Kian Koh**

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With over 20 years of research experience, Dr. Koh's scientific career in research started with a PhD training from 1999-2004 at Yale University in 2004 under the mentorship of Prof. Jordan Pober. His thesis topic, entitled "*T cell-mediated vascular dysfunction in human allograft arteries*," involved using a human-mouse chimeric transplant model to investigate the mechanisms of endothelial dysfunction in human transplant arteriosclerosis.

After obtaining a PhD in Pharmacology from Yale, Dr. Koh soon left academia for an industry position in a pharmaceutical company, S\*Bio Pte Ltd, in his home country of Singapore. There, he gained experience with epigenetics-based drug discovery, which excited him so much that he would return to academic post-doctoral research, with a dream to discover chromatin regulators as potential new drug targets to improve human health. That opportunity came in 2007 when Dr. Koh joined Harvard Medical School as postdoctoral fellow under the mentorship of Prof. Anjana Rao. They discovered the Tet- Eleven-Translocation (TET) family of DNA dioxygenases, which quickly gained attention as the "*DNA demethylases*" long-sought after in early mammalian development. To investigate the biological functions of the TET gene family, Dr. Koh started learning how to work with mouse embryonic stem cells under the mentorship of Prof. George Daley. In 2011, Dr. Koh moved to the Stem Cell Institute Leuven in Belgium to set up his own group.

With several publications in high-impact journals, Dr. Koh's independent research program focuses on Stem Cell and Developmental Epigenetics. In particular, his major goal has been to understand the role of TET1 in embryonic development and reprogramming, using transgenic mouse models and next-generation sequencing technologies.

The most important publication from the Koh lab is Khoueiry, R., Sohni, A., Thienpont, B., Luo, X.L., Vande Velde, J., Bartocchetti, M., Boeck, B., Zwijsen, A., Rao, A., Lambrechts, D, Koh, K. (2017). Lineage-specific functions of TET1 in the post-implantation mouse embryo. *Nature Genetics*, 49 (7):1061-1072.

Dr. Koh's advice to current and future postdocs: *"Do your best to find the correct answers. I would rather publish the correct story but be second, then to be first but publish the wrong conclusion."*

*What I appreciate most from my post-docs and students, are their humility and integrity. As a junior PI, I was not in a position to attract postdocs with stellar CVs, but I find it most gratifying to discover their talent and bring out their best. I appreciate my trainees whose primary motivation is to work hard, even if it meant taking the difficult path, to get to the right answers. It takes patience and perseverance to resolve experimental caveats and the nuances of biological phenotypes, which may not always provide the quick answers the field anticipates for top-tier publications, but ultimately (I hope) will advance science.*

*Be generous. It takes a team effort to publish in high-impact journals. Give proper acknowledgement to your second- and/or third co-authors who helped you. At the same time, be willing to help others in their papers.*

*Stay focused, but do not be afraid to take new directions in research in order to answer your questions.*

*I started my laboratory with barely 3 years of experience in stem cell biology and with zero track-record in developmental biology, but there are no barriers from learning a new field and gaining a thorough understanding of new methods from the right experts."*

### **Featured Postdoc**



Dr. Rita Khoueiry obtained her PhD from the Stem Cell and Brain Research Institute at Claude Bernard University Lyon 1, France, under the mentorship of Dr. Annick Lefèvre. Her PhD thesis was titled *"Evaluating the effect of assisted reproductive technologies on the reprogramming and maintenance of imprinted genes in human oocytes and non-developing human embryos"*. After her PhD, Dr. Khoueiry joined the lab of Dr. Simonetta Piatti at the Montpellier Cell Biology Research institute for her first post-doctoral experience. Later, she joined Dr. Koh's group in July 2012 as a postdoc and has more than 10 publications.

Please read ["The Role of TET Proteins During Development"](#) by Khoueiry and Koh published in the May 2018 issue of [Postdoc Journal](#).



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