

FAOBMB Exchange Fellowship report

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It is an honour to receive the prestigious FAOBMB Exchange Fellowship! I'm a PhD candidate from Universiti Tunku Abdul Rahman (Malaysia). With the Fellowship, I spent three months (1 June till 31 August 2019) in Prof Jin Dong Yan's lab at Li Ka Shing Faculty of Medicine, The University of Hong Kong (Hong Kong).

Throughout the lab attachment period, I learned the genome editing technique CRISPR/Cas9 system from A to Z. Mutations in leucine rich repeat kinase 2 (LRRK2) gene are the most common genetic cause of both familial and sporadic Parkinson's disease. CRISPR/Cas9 system was used to generate LRRK2 knockout and knock-in (G2385R variant) cell models. The project started with the design of guide RNAs (gRNAs) and donor template, followed by cloning of the gRNAs into CRISPR/Cas9 vector. Subsequently, gRNAs screening was performed to identify and validate whether gRNAs were working well. After the validation, cells were transfected with selected gRNAs and donor template. Single cell sorting was carried out to obtain edited clones.

At the end of the lab attachment, I managed to generate some LRRK2 knockout and knock-in clones using CRISPR/Cas9 system. Prof Jin and postdoctoral fellow (Dr Sam Yuen Kit San) are good mentors. It was indeed an awesome and fruitful experience working with them!

The technique acquired from Prof Jin's lab will be used to create Parkinson's disease cell models in my home institution, UTAR. The establishment of this cell model is part of my PhD thesis work. The cell model created will be the first of its kind in my home country (Malaysia).



Photos with Prof Jin Dong Yan (left) and postdoctoral fellow Dr Sam Yuen Kit San (right).