ICS/Pfizer Fellowship Report
Nipaporn Konthapakdee

Background & current work:

My PhD project is to investigate the peripheral role of 5-hydroxytryptamine (5-HT) on bladder sensory (afferent) signalling. Using extracellular nerve recordings on the mouse urinary bladder, I found that 5-HT has a direct modulatory role on bladder afferent signalling and its action is mainly mediated through 5-HT3 receptors.

Location and site:

I decided to complete my fellowship at the visceral pain group, Centre for Nutrition and Gastrointestinal Diseases at the South Australian Health and Medical Research Institute (SAHMRI), Adelaide, Australia. SAHMRI is one of the key research institute in medical sciences in Australia which has a lot of research facilities. The visceral pain group recently described that bladder afferents are hypersensitive in their animal model of irritable bowel syndrome. The bladder and bowel cross-talk is known to occur in humans and 5-HT might constitute a key player. Therefore, the question whether 5-HT signalling in the bladder was altered in hypersensitive mice was also of interest to the group leader Dr Stuart Brierley. He was very supportive and helpful throughout my fellowship.

Expectations and Learning Objectives:

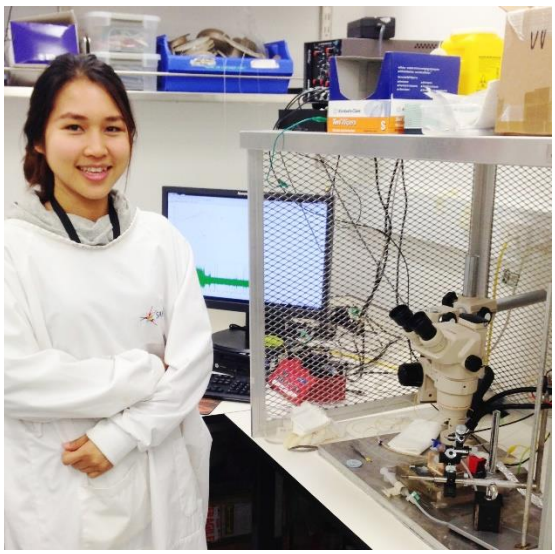
The objective of the research funded with this fellowship was to compare 5-HT signalling of bladder afferent firing in healthy and hypersensitive mice. I conducted nerve recording experiments and learned new experimental techniques which could help me to address the mechanisms involved. More importantly, this fellowship gave me the opportunity to develop my research network. This will be most important when I finish my PhD and return to Thailand. It will strengthen and facilitate collaborations and knowledge exchange between Thailand and Australia, especially in the field of basic science research in urology.

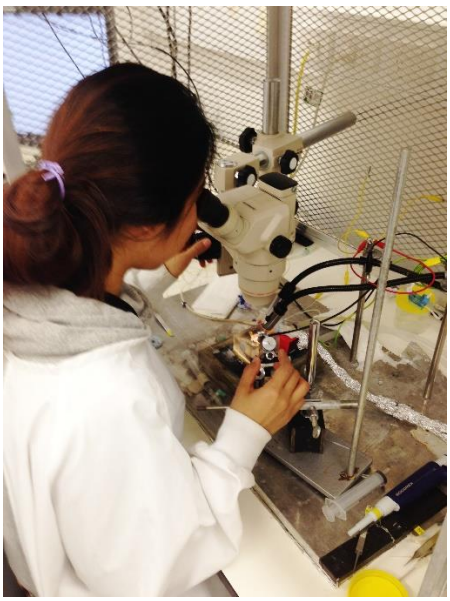
Specific details of learning and activities whilst on placement:

As planned, I performed afferent nerve recordings to investigate the effects of 5-HT and 5-HT3 antagonist in chronic and acute TNBS-treated mice which is an animal model for bowel and bladder crosstalk. I also investigated whether changes of receptor expression might play a role using qPCR. Moreover, I was able to learn how the animal model is generated and observed retrograde labeling. This technique enables to identify specific subpopulations of neurons that innervate the bowel and/or urinary bladder, respectively and conduct single cell PCR. To strengthen social connections, I also attended group meetings and participated at social activities i.e., lab dinner and other social events at SAHMRI.

Conclusion:

This fellowship provided the means for an extra-ordinary experience. Not only was I able to extend my PhD research and learn new experimental techniques, but I also met other people interested in the field of urology. This interaction and also the positive feedback are very important for early career researchers like me. I would like to thank the ICS and Pfizer for giving me and the others this worthwhile experience.






SAHMRI
South Australian Health &
Medical Research Institute
Founding Members
THE UNIVERSITY OF ADELAIDE
University of South Australia
Flinders UNIVERSITY
Government of South Australia
Research Partners
CSIRO
EMBL