IBRO-APRC School on Translational Neuroscience

October 9-19, 2011, Beijing, China

The IBRO-APRC school on Translational Neuroscience was organized by International Brain Research Organization in collaboration with Capital Medical University, Beijing, China from Oct 9-19, 2011. It was organized by Prof Xio-Min Wang and Zhi-qing David Xu of Capital Medical University, Beijing. The participants of the school were senior PhD and junior postdoctoral students from Asia-Pacific region. Selected students of India, China, Pakistan and Thailand actively participated in the school.

The lectures covered basic concepts in translational neurosciences and projects focused on five technique-oriented areas in neurosciences. Participants of the school acquired knowledge in both theoretical and technological advances in the key areas of neuroscience research. Prof James Brock, University of Melbourne, Prof Yasunori Hayashi, RIKEN Brain Research Center, Japan, Prof Sang Jeong Kim, Seoul National University College of Medicine, Seoul, Korea, Prof Peter Wallen, Karolinska Institute, Sweden were the resource faculty. Prof Zhi-Qing David Xu, Prof Andre Chen, Prof Biao Chen and Prof Jian-Ping Jia, from Capital Medical University, Beijing were the resource persons faculty from China. As a guest faculty, Prof Peng elaborated the roles of various candidate genes in Parkinson's disease and their manipulation for therapeutics.

Prof Beart discussed about apoptosis and neuronal death in neurodegenerative diseases. He emphasized on necrosis, autophagy and programmed necrosis, and

their uses in translational neuroscience. Further, astrocyte bioengineering was discussed for treatment of neurodegenerative diseases. Prof James emphasized the uses of electrophysiology in translational neurosciences and their uses for the treatment of neurodegenerative diseases. Prof Kim discussed patch clamp, *in vivo* calcium imaging, mathematical modeling and their uses to translate basic information into translational value. Prof Wallen explained how lamprey can be used as a model for translational neuroscience using mathematical modeling in the context of spinal cord injury. Prof Hayashi discussed about FRET-FRAM, protein-protein interaction, determination of secondary structure, conformation of proteins and their uses in therapeutics. Prof David elaborated about the emotional symptoms, emphasizing multidisciplinary and interdisciplinary approaches for translational neuroscience. He showed interesting relation between depression and expression of galanin receptor using mouse model. Prof Chen discussed about higher brain functions, human bioengineering and showed interesting finding of vowel pronunciation versus activity of brain using in Chinese population using fMRI. Prof Biao Chen highlighted the role of basic research in alleviating the onset of Parkinson's diseases (PD). Prof Jia discussed about various factors like cigarette smoking in Chinese population and onset of PD using community medicine research.

The hands on experiments were divided into five themes (i) Experimental

models of brain disorders and behavioral analysis (ii) Morphological analysis of neurons and glia in mammalian brain tissues (iii) Live cell imaging and fluorescent techniques (iv) Electrophysiological analysis and (v) Molecular biological approaches. I selected theme (i) and learnt establishment of 6-OHDA rat model, Spinal cord injury model, Li-pilocarpine epilepsy model, Depression model, Middle cerebral artery occlusion and Pain model.

The school of translational neuroscience provided me with an opportunity to learn and discuss my research with neuroscientists as well as students from Asia-Pacific region. I believe the school was useful for junior scientists like me. I have completed my doctoral research on the topic "Interaction of estrogen receptor beta with nuclear and mitochondrial proteins of aging mouse brain". The school will be helpful to start my research career in translational neurosciences using animal models, and relate those finding with human cases. On the other hand, interaction among students and prominent neuroscientists from different countries and field has provided a platform for future collaborations.

doi : 10.5214/ans.0972.7531.12190211

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