

## **Laboratory Visit Report (2014)**

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PhD Student

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### **Lab. Visited:**

-Department of Neurosurgery & Department of Pharmacology

University of Washington (UW), Seattle, WA, USA

-Center for Integrative Brain Research (CIBR), Seattle

Children's Hospital and Research Institute, Seattle, WA, USA

### **Program:**

UW Visiting International Student Internship & Training Program (VISIT)

### **Host:**

Professor Franck Kalume and Professor William Catterall

### **Funding:**

ISN CAEN category-1: Visit by the Applicant to Another Laboratory (2014)

### **Overview of Laboratory Visit**

I arrived at Sea-Tac international airport Seattle, Washington, USA on the 31st of January, 2014 and was warmly welcomed by Professor Franck Kalume. I completed my registration for the program on the 3rd of February, 2014 and the Internship/training began on the 4th of February, 2014 with an introduction to laboratory facilities and other research groups/interest in the laboratory by Professor Franck Kalume and then participated in the Collaborative Institutional Training Initiative (CITI) program courses relevant to my research engagements and was briefed on the mutant mouse lines used in the laboratory. Basically, the Internship/training was focused on the following in a chronological order:

-Preparation of electrophysiology solutions

-Extraction of mouse's brain and preparation of brain slices for field potential recordings

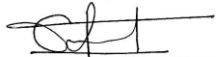
- Determination of the viability of brain slices using the NucBlue Live Cell Staining method
- Collection of tail samples for genotyping
- Genotyping for *SCN1A* gene, Channel rhodopsin and Cre
- Genotyping and creation of animal ID
- Optogenetics
- Implantation of electrodes in the brainstem
- Animal-care after surgery
- High-speed visual assessment of neurobehavioral changes during thermally-induced seizures in a mouse model of Dravet syndrome
- Scientific seminars
- Recording field potentials from hippocampal brain slices of a mouse model of Dravet syndrome and wild-type littermates
- Analysis of the data from field potential recordings. This showed that the Dravet syndrome mouse had hippocampal-network hyperexcitability.
- Determination of the effects of ketogenic diet metabolites on thermally-induced seizures and hippocampal-network hyperexcitability in a mouse model of Dravet syndrome and wild-type littermates. This showed that the ketogenic diet metabolites provide protection against thermally-induced seizures by suppression of hippocampal-network hyperexcitability in the mouse model of Dravet syndrome.
- Attending scientific conferences/symposiums
- Literature review and paper writing for publication
- Lab. Presentation of research data
- Presentation of research data during Seattle Children's end of year retreat meeting
- Training on Real-Time PCR
- Presentation of research data during the American Epilepsy Society's 5th Biennial North American regional Epilepsy Congress, December, 5-9 at Washington State Convention Center in which I duly acknowledged the "ISN CAEN category-1: Visit by the Applicant to Another Laboratory (2014) funding".
- Data analysis and writing of Ph.D. thesis.

## **Relevance to my Research**

The Visiting International Student Internship & Training Program (VISIT) under the supervision of Professor Franck Kalume and Professor William Catterall of the University of Washington, Seattle USA has significantly improved my knowledge and understanding of techniques in neurosciences, and will enable me not only to complete my PhD work, but will also be useful to me and my home institution in the forth-coming years as a researcher in neuroscience. I promise to acknowledge the ISN in my upcoming publication from this work; I thank you for the privilege granted me.

## **Acknowledgments**

I would like to thank CAEN and ISN for providing funding. I also want to appreciate Professor Franck Kalume and Professor William Catterall of the University of Washington, Seattle USA for their generosity as this Lab visit would not have been possible without their financial input. I promise to acknowledge the ISN in my upcoming publication from this work and I thank you for the privilege granted me.



***Yusuf Abdulkadir***