

ISN CAEN REPORT – CATEGORY 1A

Name – **Ayodele Jacob Akinyemi**

Host Supervisor – Prof. Michael Aschner

Address – Molecular Pharmacology Department, Albert Einstein College of Medicine, New York, 10461, United States.

First, I will like to express my sincere appreciation to the ISN-CAEN committee for the financial support granted me to visit the laboratory of Prof. Michael Aschner (host scientist) to carry out innovative research in the area of molecular neuroscience. This visit coincides with my one-year post-doctoral training supported by ISN-IBRO 2016 research fellowship, thus, the reason for a delay in submitting my report in due time. I was awarded the sum of \$ 4000 USD to cover the cost of my flight ticket and accommodation for three months.

I arrived Albert Einstein College of Medicine (AECOM), New York, USA on August 5, 2017 and I started worked immediately by first getting to know my fellow colleagues and the use of the laboratory as well as safety/health clearance test.

During the period of my stay, my research work focuses on the molecular mechanisms of lead (Pb) induced neurotoxicity in *Caenorhabditis elegans* model. The wild-type (N2) and some strains expressing green fluorescent protein (GFP) for both dopaminergic/cholinergic neurons respectively in *C. elegans* were obtained from the *Caenorhabditis* Genetics Center (CGC – University of Minnesota, Twin Cities, MN, USA) and used for the study of assessing some possible molecular mechanisms of lead (Pb) induced neurotoxicity.

At the end of my research work, the summary of the results revealed that acute exposure to Pb induces both dopaminergic and cholinergic degeneration in *C. elegans* respectively via alterations of mRNA expression level of some genes associated with dopaminergic/cholinergic systems as well as antioxidant defense mechanisms.

This research visit has offered me the opportunity to be exposed to the state-of-the-art facilities and hands-on molecular biology and biochemistry techniques such as isolation and purification of DNA/RNA, quantification of DNA/RNA using Nano-drop Spectrophotometer, synthesis of cDNA using convention PCR, quantification of mRNA expression level using real-time-PCR analysis, quantification of protein of interest using ELISA and western blotting techniques.

In addition, the research visit has enable me to meet other PhD students and Faculty members, both within and outside my host laboratory for the purpose of future collaboration and this will be of great significance in advancing my research career in the area of neuroscience.

Once again, I am extremely grateful to ISN-CAEN for this grant and also, I will like to appreciate Prof. Michael Aschner (my host supervisor) and the entire research group members for their support, encouragement and guidance throughout my stay. It was such a wonderful and resourceful opportunity to work in Prof. Michael Aschner laboratory.

Finally, I pledge to always acknowledge ISN in all publications that may emanate from this visit in the nearest future.

Thank you



Akinyemi A.J. (Ph.D)

Please find attached some pictures of me working in the laboratory.



