

**14th Conference of the Society of Neuroscientists of Africa (14th SONA Conference),
Lagos, Nigeria, March 24-28, 2019**

ISN Symposium: Circadian rhythms in healthy brain and disease

Organizer: Professor Nouria Lakhdar-Ghazal, Director of African Center for Advanced Training in Neuroscience, Faculty of Sciences, Mohammed V University, Rabat, Morocco

Abstract: Circadian rhythms are generated by the expression of molecular clocks, the main one of which is located in the suprachiasmatic nucleus of the hypothalamus (SCN). This clock controls the circadian and seasonal expression of physiological and behavioural functions. The most studied circadian rhythm in behaviour is sleep / wake cycle in humans and non-human primates, and locomotor activity rhythm in rodents. Recording of these rhythms under normal conditions showed that they are under the control of environmental factors, particularly light/Dark cycle. In normal condition, light is integrated by neurons located in the ventral part of the SCN. These neurons throughout the release of neuropeptides in the dorsal part of SCN synchronize the oscillatory activity and the output from the SCN to other brain structures. K. El Allali will explain how the SCN of the *Dromedarius* is organized and how it controls circadian rhythms in this specie. Then Howard Cooper will focus his talk on the omics of the circadian system in non human primates; Disturbances of these rhythms and their synchronization by light – dark cycle are associated with physiological disorders, particularly those involving neurodegenerative processes. In brain diseases, circadian rhythm disorders can be indicators of early symptoms of neurological diseases, i.e. Parkinson's, Parkinsonism (N Lakhdar-Ghazal) and brain aging diseases, i.e. Alzheimer disease (M Bentivoglio). Disorders in circadian rhythmicity are observed in epileptic patients, particularly the circadian rhythm of sleep wake cycle (E Gueumekane Bila Lamu).

This symposium is supported by The International Society for Neurochemistry (ISN).

Speakers

- 1- Cytoarchitecture and Neurochemical Anatomy of the Suprachiasmatic Nucleus of a Desert Mammal, the Dromedary Camel (*Camelus dromedarius*)

Khalid El Allali, Comparative Anatomy Unit, Hassan II Agronomy and Veterinary Institute
Rabat, Morocco.

- 2- From circadian transcriptome regulation in primate to chronomedicine

Howard COOPER, INSERM 846 – Stem Cell and Brain Research Institute, Head - Department of Chronobiology, 18 Avenue du Doyen Lépine, 69500 Bron, FRANCE

- 3- Circadian rhythm in the rat model of neurotoxicity-induced Parkinsonism

Nouria Lakhdar-Ghazal, IBRO Africa Centre for Advanced Training in Neuroscience,
Mohammed V University, Ibn Battouta Avenue, 12000 Rabat, Morocco

4- "Chronoconnectivity" of orexin neurons in aging and in murine Alzheimer's disease

Marina Bentivoglio, Dept. of Neuroscience, Biomedicine and Movement Sciences, University
of Verona School of Medicine, Strada Le Grazie 8, 37134 Verona, Italy

5- Circadian rhythm of sleep in Epileptic African Patients

Eric Gueumekane Bila Lamou, Cheikh Anta Diop University of Dakar, Dakar, Senegal