

## **Nezha BOUHADDOU, *PhD in Neurosciences***

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## **Current position**

**Assistant Professor** – Faculty of Sciences, Mohammed V University, Rabat, Morocco

## **Diploma**

**2016:** PhD in Neurosciences from Mohammed V University, Rabat, Morocco (With honors)

**2012** Certificate of aptitude for teaching (CAPES), Casablanca, Morocco.

**2006:** Master's degree in Neurosciences at Mohammed V University, Rabat, Morocco

**2004:** Bachelor's degree of Sciences in Biology at Mohammed V University, Rabat, Morocco

**2000:** Baccalaureate in experimental sciences (with honors).

## **Publications**

- Boualam Khadija, Bouhaddou Nezha, Sobeh Mansour, Tabyaoui Mohamed, Taghzouti Khalid. *Mentha rotundifolia* (L.) Huds. aqueous extract attenuates H<sub>2</sub>O<sub>2</sub> induced oxidative stress and neurotoxicity. *Front. Neurosci.* 17:1121029 (2023).
- Achouch Samia, Bouhaddou Nezha, Bousseta Rihab, Nonnon Pierre, Taghzouti Khalid, Gharbi Mourad. Development of a “Small Contractions” Sensor for Practical Work in Biology Using 3D Printing Technology. *International Journal of Emerging Technologies in Learning (iJET)*, 17(13) (2022).
- Slimane Mehdad, Souad Benaich, Asmaa El Hamdouchi, Nezha Bouhaddou, Mehdi Azlaf, Imane El Menchawy, Hakim Belghiti, Hasnae Benkirane, Houria Lahmam, Amina Barkat, Khalid El Kari, Mohamed El Mzibri, Hassan Aguenau, Association between overweight and anemia in Moroccan adolescents: a cross-sectional study, *Pan African Medical Journal*, 41:156 (2022).
- Mehdad Slimane, Benaich Souad, Bouhaddou Nezha, Magnitude of Overweight, Obesity and Physical Inactivity as Risk Factors of Major Non-communicable Diseases in North African Countries. In: Boutayeb A. (eds) *Disease Prevention and Health Promotion in Developing Countries*. Springer, Cham. (2020).
- Mounir Ouzir, Nezha Bouhaddou, Hanane Khalki and Nouria Lakhdar-Ghazal, Physiological and pharmacological properties of 5-methoxytryptophol, *Expert Rev. Endocrinol. Metab.* 8(4), 355–364 (2013).
- Rachid El Moussaouiti, Nezha Bouhaddou, Mariam Sabbar, Howard M. Cooper, and Nouria Lakhdar-Ghazal, Phase, and period responses of the jerboa *jaculus orientalis* to short light pulses, *Chronobiology International*, 27(7): 1348–1364, (2010).

## **Poster and oral communications**

- S. Boumhaouad, J. Balla, I. Berkiks, O. Gobbo, K. Taghzouti, N. Bouhaddou. Role of the circadian/immune system interaction in cognitive impairment related to manganese exposure in a preclinical model of Parkinson disease. 15<sup>th</sup> SONA Conference, 27-30 October 2021, Accra, Ghana.
- Bouhaddou Nezha, Ibn Lahmar Andaloussi Zineb, Achouch Samia, El Ghaleb Houssine, Gharbi Mourad et Taghzouti Khalid. L'expérimentation assistée par ordinateur au service des travaux pratiques de physiologie animale de la Licence Sciences de la vie. 3<sup>ème</sup> Colloque

International sur la Formation et l'Enseignement des Mathématiques (CIFEM), October 2020, online event.

- Bouhaddou Nezha, El Moussaouiti Rachid, Cooper Howard, Dkhissi-Benyahya Ouria and Lakhdar-Ghazal Nouria. Seasonal control of reproductive function in rodents. International symposium of Junior Neuroscience Investigators (ISJNI). 2019, Marrakech – Morocco.
- Bouhaddou Nezha, El Moussaouiti Rachid, Cooper Howard, Dkhissi-Benyahya Ouria and Lakhdar-Ghazal Nouria. 5-Methoxytryptophol and Melatonin induce season dependent expression of clock proteins in the brain of the jerboa (*Jaculus orientalis*). Society of Neuroscientists of Africa (SONA) conference. 2019, Lagos – Nigeria.
- Boumhaouad S, Mamad O, Holmes S, Mawhinney L, Fayne D, Crémillieux Y, Bouhaddou N, Taghzouti K, Gobbo O. L. In vivo detection of metastatic lung tumour using Manganese-Enhanced MRI. All Ireland school of Pharmacy conference. 2019, Dublin – Ireland.
- Boumhaouad S, Mamad O, Holmes S, Mawhinney L, Fayne D, Crémillieux Y, Bouhaddou N, Taghzouti K, Gobbo O. L. In vivo detection of metastatic lung tumour using Manganese-Enhanced MRI. 5<sup>ème</sup> forum Africain de la Santé. 2019, Rabat – Morocco.
- Nezha Bouhaddou, Lakhdar-Ghazal Nouria, Effect of seasons on the action of 5-Methoxytryptophol (5ML) on certain thalamic and hypothalamic nuclei in the gerboas (*Jaculus orientalis*), 2nd IBRO School of Neuroscience, January 30th – February 5th, 2011, Al-Ain, UAE.
- M Sabbar, D Salhi, N Bouhaddou, H Cooper, A Benazzouz, N Lakhdar-Ghazal. Effects of heavy metal intoxication on circadian rhythms and basal ganglia. European Sleep Research Society Conference. Lisbon - Portugal, 2010.
- Bouhaddou N., Chakir J., Lakhdar-Ghazal N. Action du 5-Methoxytryptophol sur certains noyaux thalamiques et hypothalamiques de la gerboise (*Jaculus orientalis*) ; effet des saisons. 3<sup>ème</sup> école du GDRI-Neuro France-Maroc 6-10 juin 2010, Fès, Morocco.
- Bouhaddou N., Lakhdar-Ghazal N. 5-Methoxytryptophol induced C-Fos expression dependently on season in the SCN and thalamic structures of the jerboas (*Jaculus orientalis*). XI Congress of the European Biological Rhythms Society, August 22-28, 2009, Strasbourg, France.
- Bouhaddou N., Chakir J., Lakhdar-Ghazal N. Action du 5-Methoxytryptophol sur certains noyaux thalamiques et hypothalamiques de la gerboise (*Jaculus orientalis*) ; effet des saisons. 2<sup>ème</sup> réunion scientifique du GDRI-Neuro France-Maroc, 13-14 december 2008, Marrakech.
- Bouhaddou N., Chakir J., Lakhdar-Ghazal N. Action du 5-Methoxytryptophol sur certains noyaux thalamiques et hypothalamiques de la gerboise (*Jaculus orientalis*) ; effet des saisons. 1<sup>ère</sup> école du GDRI-Neuro France-Maroc Décembre 2008, Marrakech, Morocco.
- Nezha Bouhaddou, Lakhdar-Ghazal Nouria, The Action of 5-Methoxytryptophol (5ml) on certain Thalamic and Hypothalamic Nuclei in the Jerboas Depends on Seasons, Workshop on Chronobiology and Sleep, 20th – 27th October 2008, Ouarzazate – Zagora, Morocco.
- Nezha Bouhaddou, Lakhdar-Ghazal Nouria, Effect of seasons on the action of 5-Methoxytryptophol (5ML) on certain thalamic and hypothalamic nuclei in the jerboas (*Jaculus orientalis*), 16th IBRO-ISCN School of Neuroscience, 8th – 16th December 2007, Johannesburg, South Africa.
- Bouhaddou N., Chakir J., Lakhdar-Ghazal N. le 5-Methoxytryptophol induit l'expression du C-Fos dans le noyau suprachiasmatique et le noyau paraventriculaire thalamique chez la gerboise (*Jaculus orientalis*) : effet des saisons. 1<sup>ère</sup> réunion scientifique du GDRI-Neuro France-Maroc, 29-30 novembre 2007, Rabat, Morocco.
- Nezha Bouhaddou, Lakhdar-Ghazal Nouria. The Action of 5-Methoxytryptophol (5ml) on certain Thalamic and Hypothalamic Nuclei in the Jerboas Depends on Seasons, IAC-USNC / IBRO School of Neuroscience, 1<sup>st</sup> UAE- IBRO Neuroscience School, 24th - 31<sup>st</sup> January 2007, Al Ain, UAE.
- Bouhaddou N., Chakir J., El Moussaouiti R. and Lakhdar-Ghazal N. 5-Methoxytryptophol induces C-Fos expression in the diencephal of the jerboas (*Jaculus orientalis*); effect of the

seasons. The 2nd Mediterranean conference of neurosciences. December 13th – 15th 2006, Marrakech, Morocco.

- Nezha Bouhaddou, Lakhdar-Ghazal Nouria. The Action of 5-Methoxytryptophol (5ML) on certain Thalamic and Hypothalamic Nuclei in the Jerboas Depends on Seasons, IAC-USNC / IBRO School of Neuroscience, 1<sup>st</sup> - 9<sup>th</sup> JULY 2006, Cape Town, South Africa.

### **Fellowships and awards**

- Support from Egede Volubilis program covering trainings in INSERM, Lyon, France (2008 to 2012)
- Excellence Award from the CNRST (National Center for Scientific and Technical Research, Morocco), PhD research financial support, 3 years (2006 to 2009).
- Travel grant from the European Biological Rhythms Society to attend the IX society congress in Strasbourg, France (2009).
- Travel grant from International Brain Research Organization (IBRO) to attend IBRO/ARC schools and events (Cape Town 2006, Johannesburg 2007, Ouarzazate 2008, Al Ain 2009, Al Ain 2011, Teaching tools workshop 2018, writing paper workshop 2019, SONA conference 2019)

### **Memberships**

- ISN: International Society of Neurochemistry (Since 2018)
  - o Member of the Committee for Aid and Education in Neurochemistry (Since 2021)
- SONA: Society of Neuroscientists of Africa (Since 2016)

### **Peer Review Experience**

- Oxidative Medicine and Cellular Longevity (Electronic ISSN: 1942-0994), Ad Hoc Reviewer, 2023
- Molecular Neurobiology (Electronic ISSN 1559-1182), Ad Hoc Reviewer, 2023

### **Skills**

#### **➤ Neurosciences**

- Immunohistochemistry
- Circadian Rhythms Monitoring and analysis (Actimetry)
- Motor behavioral tests: Open field, Rotarod, etc.
- Non-motor behavioral tests: the elevated plus maze, radial maze, Light/dark box test, forced swimming test, Morris water maze, anhedonia test, etc.
- Animals (rodents) handling, surgery (pinealectomy & ganglionectomy) and stereotaxic manipulation.

#### **➤ Computer skills**

- Graphpad Prism: Data analysis and production of graphs
- Microsoft office specialist certificate

### **Organization of scientific Schools and events**

- Coordinator of the 10<sup>th</sup> IBRO-UM5 African Advanced School on “Basal ganglia and Movement disorders”, November 2022, Rabat – Morocco.
- Organizer of the third edition of the International Symposium of Young Neuroscience Investigators, 12-14 November 2021, Rabat – Morocco.
- Coordinator of the 9<sup>th</sup> IBRO-UM5 African Advanced School on “Basal ganglia and Movement disorders”, November 2021, Rabat – Morocco (hybride event).
- Organization committee member of the “6<sup>ème</sup> Ecole de l’ExAO, May 2021, Oujda – Morocco.

- Coordinator of the IBRO-Kemali Neuroscience School on “Neuroinflammation and Intercellular Communication”, November 2019, Rabat - Morocco.
- Coordinator of the 8<sup>th</sup> IBRO-UM5 African Advanced School on “Cognition and its Disorders”, September 2019, Rabat – Morocco.
- Coordinator of the 7<sup>th</sup> IBRO-UM5 African Advanced School on “Functional Neuroanatomy”, July 2019, Rabat – Morocco.
- Organization committee member of the International Symposium of Junior Neuroscience Investigators, April 2019, Marrakech – Morocco.
- Organization committee member of the “46<sup>ème</sup> congrès de la Société Francophone de Chronobiologie, Octobre 2018, Rabat - Morocco.
- Coordinator of the 6<sup>th</sup> IBRO-UM5 African Advanced School on “Neurophysiology of Biological Rhythms”, October 2018, Rabat – Morocco.
- Coordinator of the 5<sup>th</sup> IBRO-UM5 African Advanced School on “Basal Ganglia and movement disorders”, June 2018, Rabat – Morocco.
- Organization committee member of the “1<sup>er</sup> Symposium International des Jeunes Chercheurs en Neurosciences, April 2018, Béni Mellal – Morocco.
- Coordinator of the 4<sup>th</sup> IBRO-UM5 African Advanced School on “Basic, preclinical and clinical neurophysiology”, March 2018, Rabat – Morocco.
- Coordinator of the 3<sup>rd</sup> IBRO-UM5 African Advanced School on “Neuroimmunology and Brain infections”, November – December 2017, Rabat - Morocco.
- Coordinator of the IBRO-Kemali/MNS School in Neurosciences on “Brain connections and connectomics”, September 2017, Rabat - Morocco.

## **Students’ supervision and postgraduate examination experience**

### **➤ PhD and master’s degree supervision**

- Co-supervisor of a PhD project on “the interaction of the circadian and immune systems on a rat neurotoxic model of Parkinson’s disease” (Miss Siham Boumhaouad, fourth year, Thesis defense expected on 2024)
- Co-supervisor of a PhD project on “The neuroprotective role of melatonin rhythm against seizures in a PTZ model of epilepsy” (Mr. Zakaria Bernoussi, fourth year, Thesis defense expected on 2024)
- Supervisor of a master’s degree project on “The prophylactic effects of Melatonin against Manganese induced neurotoxicity in male and female swiss mice” (Defence expected on September 2023)
- Supervisor of a master’s degree project on “The prophylactic effects of Melatonin against lead induced neurotoxicity in female Wistar rats” (Miss Soukaina Bentaybi, Defended in July 2022)
- Supervisor of a master’s degree project on “The neuroprotective effects of plant extracts against epileptic seizure in the PTZ rat model of epilepsy” (Miss Lisette Zoungan, Defended in July 2022)
- Supervisor of a master’s degree project on “The prophylactic effects of ascorbic acid against lead induced neurotoxicity in male wistar rats” (Miss Fatima Zahra El Sadiq, Defended in April 2022)
- Supervisor of a master’s degree project on “The neuroprotective effects of Melatonin against the outcomes of Manganese induced neurotoxicity” (Miss Jihane Balla, thesis defended on December 2021 at Caddi Ayad University, Marrakech - Morocco)
- Supervisor of a master’s degree project on “The prophylactic effects of Melatonin against lead induced neurotoxicity in male wistar rats” (Mr. Rachid El Attary, thesis defended on July 2021 at Caddi Ayad University, Marrakech - Morocco)
- Supervisor of a master’s degree project on “In vivo detection of metastatic lung tumor using manganese enhanced MRI” (Miss Siham Boumhaouad, Thesis defended on July 2019)

➤ **PhD and master's projects examination**

- Examiner of a master's degree project on "Retrospective study of drugs intoxications in Morocco during the period between 2018 and 2020" (Miss Sara Moustarih, Thesis supervised by Prof. Zinedine Abdellah and defended on October 2021)
- Examiner of a master's degree project on "Retrospective study of the therapeutic and side effects of medicinal plants used in the context of COVID-19 pandemic" (Miss Fatima Oulhaj, Thesis supervised by Prof. Zinedine Abdellah and defended on October 2021)
- Examiner of a veterinary doctor thesis project on "histo-morphometric study of sprachiasmatic nucleus of black moroccan goat (*Capra hircus*)" (Mr. Abdelwahed Allouch, Thesis supervised by Prof. Khalid El Allali and defended on October 2021)
- Examiner of a master's degree project on "Evaluation and comparaisn of neurocognitive and reading performances in arabophone and amazighophones moroccan students" (Miss Fatima Foughali, Thesis supervised by Prof. Fatima Ezzahra Azzaoui and defended on December 2018)
- Examiner of a master's degree project on "inadapted early schemes and personality traits influences on burnout in call-centers workers in Rabat region" (Mr. Eliesse Drissi, Thesis supervised by Prof. Fatima Ezzahra Azzaoui and defended on December 2018)

***Updated on May 2023***

Signature

