Research evaluation

FINAL SUMMARY OF THE EVALUATION ON THE RESEARCH UNIT: Mécanismes Moléculaires dans les Maladies Neurodégénératives (MMDN)

Under the supervision of the following institutions and research bodies:

Université de Montpellier

École pratique des hautes études – EPHE

Institut national de la santé et de la recherche médicale – INSERM

EVALUATION CAMPAIGN 2019-2020
GROUP A

Rapport publié le 12/05/2020

In the name of Hcéres[1]:	In the name of the experts committee[2]:
Nelly Dupin, acting President	Hugh Perry, Chairman of the committee

Under the decree No.2014-1365 dated 14 November 2014,

[1] The president of Hcéres "countersigns the evaluation reports set up by the experts committees and signed by their chairman." (Article 8, paragraph 5);

[2] The evaluation reports "are signed by the chairman of the experts committee". (Article 11, paragraph 2).

Tables in this document were filled with data submitted by the supervising body on behalf of the unit.

UNIT PRESENTATION

Unit name:	Molecular Mechanisms in Neurodegenerative Diseases
Unit acronym:	MMDN
Current label and N°:	UMR 1198
ID RNSR:	200716389N
Application type:	Renewal
Head of the unit (2019-2020):	Mr Tangui MAURICE
Project leader (2021-2025):	Mr Tangui MAURICE
Number of teams and/or themes:	3

EXPERTS COMMITEE MEMBERS

Chair:	Mr Hugh Perry, University of Southampton, United Kingdom
Experts:	Mr Philippe Hantraye, CNRS, Fontenay-aux-roses (Co-president) Mr Peter Heutink, DZNE, Tübingen, Germany Ms Helene Plun-Favreau, Queen Square Institute of Neurology, University College London, London, United Kingdom Ms Florence Pasquier, Université de Lille, Lille (representative of CSS Inserm) Ms Rachel Sherrard, Sorbonne Université, Paris (representative of CNU) Mr Francis Eustache, École Pratique des Hautes Études, Caen (representative of École Pratique des Hautes Études) Mr Xavier Baudin, CNRS, Paris (representative of PAR)

HCÉRES REPRESENTATIVE

Ms Nadia Soussi-Yanicostas

REPRESENTATIVES OF SUPERVISING BODIES

Mr Etienne Hirsch, Inserm
Mr Jacques Mercier, University Montpellier
Mr Jean-Michel Verdier, EPHE
Mr Jacques Cavaille, Inserm
Ms Bonnet-Kerrache Armelle, Inserm

INTRODUCTION

HISTORY AND GEOGRAPHICAL LOCATION OF THE UNIT

The Molecular Mechanisms in Neurodegenerative Disease (MMDN) Unit was established in 2005 under the leadership of Jean-Michel Verdier, an expert in the study of the ageing brain and neurodegenerative diseases. The unit was housed in the University of Montpellier and affiliated with Institut national de la santé et de la recherche médicale (Inserm) and École Pratique des Hautes Études (EPHE). The location within the main University campus and the Biology and Health Department brings the unit close to a number of excellent departments and technical platforms. The focus on neurodegenerative diseases in the unit led to the recruitment of further key individuals in 2005, Tangui Maurice an expert in therapeutic approaches to Alzheimer's disease, and Jean-Marie Robine, an expert in public health and ageing. More recently, in 2016, the unit was joined by Florence Perrin who brings expertise in the biology of acute injury to the spinal cord and studies of glia and neuroregeneration to complement the ongoing work in chronic neurodegeneration mechanisms. In 2018 Jean-Michel Verdier was elected EPHE president, and Tangui Maurice was thus elected by the Unit members to be the head of the Unit.
In the last 15 years this small but focused Unit has grown its reputation in the study of mechanisms of neurodegeneration and has benefited from the growth in the local environment of multiple other units and facilities. Developments in neuroscience have been and remain crucially dependent on infrastructure and sophisticated technology platforms: the MMDN Unit has been well placed to take advantage of these developments.

Management team

Over the review period the management team has consisted of Tangui Maurice as a director.
For the next contract MMDN will be directed by Tanguy Maurice, with Nadine Mestre-Francés acting as deputy director.

HCÉRES NOMENCLATURE

SVE4

THEMATICS

The Unit is organised into three research teams, which take a multi-disciplinary approach to the study of the molecular mechanisms that underpin neurodegenerative disease and neuroregeneration. The first team "Risk Factors and Neuroprotective Strategies in Neurodegenerative Diseases", studies metabolic and environmental risk factors that impact on neurodegenerative disease, with a focus on Alzheimer's disease and the tauopathies. These investigations will involve cellular *in vitro* studies, *in vivo* models and studies in humans. The second team "Cellular Determinants of Neuroprotection in Neurodegenerative Diseases", studies the cellular and molecular mechanisms that determine the protection and survival of neurons in degenerative diseases and will focus on mitochondria and endoplasmic reticulum-mitochondrial contacts at the membrane (MAMs). They will use diverse *in vivo* models and links with the clinical scientists to study several proteinopathies and inherited diseases. The third team "Integrative Biology of Neuroregeneration" studies the cellular and molecular mechanisms that underpin the lack of or limited neuroregeneration that is seen in the spinal cord after injury. The focus will be to develop new strategies to promote functional regeneration.

UNIT WORKFORCE

Molecular Mechanisms in Neurodegenerative Dementia		
Active staff	**Number 06/30/2019**	**Number 01/01/2021**
Full professors and similar positions	3	3
Assistant professors and similar positions	9	8
Full time research directors (Directeurs de recherche) and similar positions	2	2
Full time research associates (Chargés de recherche) and similar positions	5	4
Other scientists ("Conservateurs, cadres scientifiques des EPIC, fondations, industries, etc.")	3	3
High school teachers	0	0
Supporting personnel (ITAs, BIATSSs and others, notably of EPICs)	7	6
Permanent staff	**29**	**26**
Non-permanent professors and associate professors, including emeritus		
Non-permanent full time scientists, including emeritus, post-docs (except PhD students)		
PhD Students		
Non-permanent supporting personnel	5	
Non-permanent staff	**0**	
Total	**29**	**26**

GLOBAL ASSESSMENT OF THE UNIT

The Unit has published a good number of papers over the last funding period. The quality of publications is uneven across the unit and many of the papers are not in high quality or general journals dealing with molecular and cellular neuroscience (*e.g., Neuron, Nat Neuro, Brain,* etc.). The papers are not well cited and thus the work does not have the reach and recognition nationally and internationally that it might do. There are, however, exceptions with work on the sigma-1-receptor, nutrition in psychiatric disease well recognized outputs. A particular strength and focus of the unit's work is on animal models of disease and phenotyping of the models including work on a non-human primate, the mouse lemur; although validation of these models alongside other more widely used models and assays would be of value and enhance the visibility. The uneven performance across the unit is also reflected in the acquisition of external funding, with some individuals doing well, others with limited external funding or funding from local resources rather than national and international agencies. The unit appears to have integrated the staff by having regular meetings of either teams within the unit or the unit as a whole, which is commendable and encourages cross-team collaborations. The training of the early career researchers is a significant part of the unit's activity but again there is uneven performance in the number of students supervised by individual qualified staff. The training pathways and mentoring of early research career scientists, the post-docs and postgraduate students are not well described and thus difficult to assess.

The unit is undergoing a reorganization for the next funding period with three teams rather than 6. The new team 1 is excellent and has a very strong track record, new team 2 has considerable potential to be excellent also andnew team 3 has some very good science but new team 1 does not have a fully coherent research strategy that will enable the team to take full advantage of the opportunities for the best scientists in this large team with a considerable breadth of expertise.

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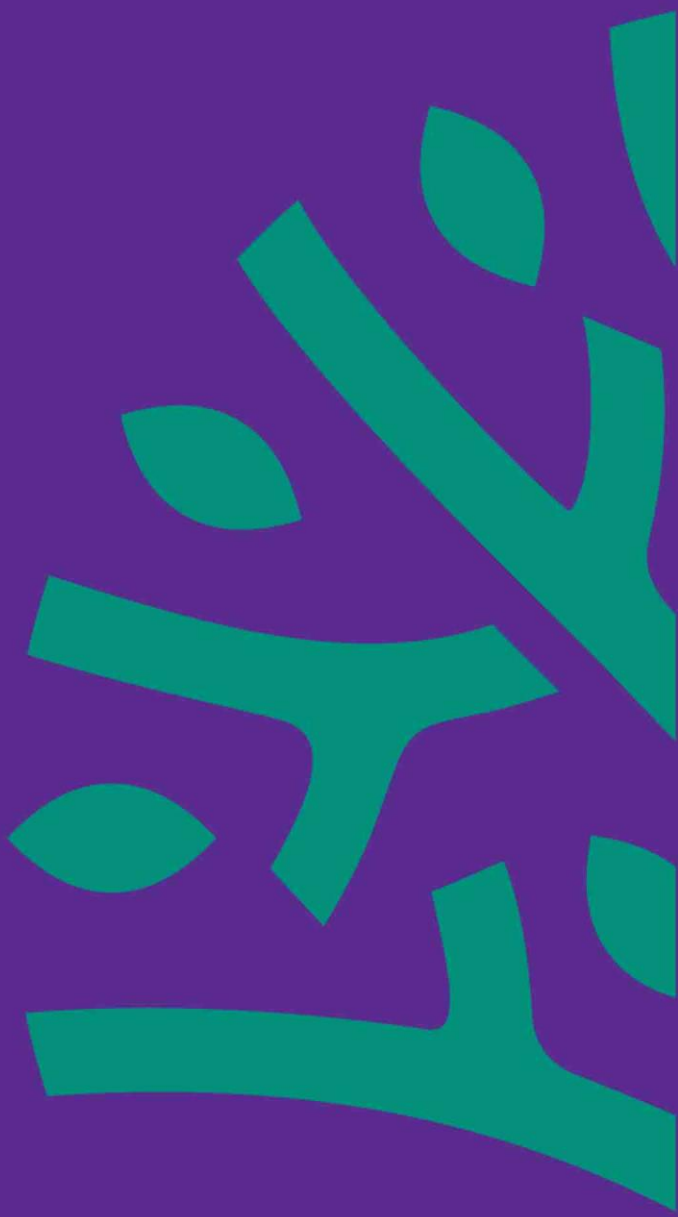
Evaluation of clusters of higher education and research institutions
Evaluation of higher education and research institutions
Evaluation of research
Evaluation of doctoral schools
Evaluation of programmes
International evaluation and accreditation



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