



Research evaluation

FINAL RESUME ON THE RESEARCH UNIT
Biology of Cardiovascular Diseases

UNDER THE SUPERVISION OF THE
FOLLOWING INSTITUTIONS AND RESEARCH
BODIES:

Université de Bordeaux
Institut national de la santé et de la recherche
médicale - INSERM

EVALUATION CAMPAIGN 2020-2021
GROUP B

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High Council for evaluation of research and higher education



In the name of Hcéres¹:

Mr Thierry Coulhon, President

In the name of the experts committee²:

Mr Jean-Sébastien Silvestre, 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 certified data submitted by the supervising body on behalf of the unit.

UNIT PRESENTATION

Unit name:

Biology of Cardiovascular Diseases

Unit acronym:

BMC

Current label and N°:

UMR 1034

ID RNSR:

200716483R

Application type:

Renewal

Head of the unit (2020-2021):

Mr Thierry Couffinhal

Project leader (2021-2025):

Mr Thierry Couffinhal

Number of teams and/or themes:

Single team

EXPERTS COMMITTEE MEMBERS

Chair:

Mr Jean-Sébastien Silvestre, INSERM, Paris

Experts:

Mr Luc Bertrand, Université catholique de Louvain, Bruxelles, Belgique

Ms Isabelle Brunet, Collège de France/INSERM, Paris

Ms Pascale Cohen, Université de Lyon (representative of CNU)

Ms Cécile Denis, INSERM, Paris

Mr Hervé Durand, INSERM, Paris

Ms Nathalie Kubis-Catala, Assistance publique - Hôpitaux de Paris/INSERM, Paris

Mr Pierre-Louis Tharaux, INSERM, Paris (representative of CSS INSERM)

HCÉRES REPRESENTATIVE

Mr Claude Delcayre

REPRESENTATIVES OF SUPERVISING INSTITUTIONS AND BODIES

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Mr Christian Boitard, ITMO Physiologie, Métabolisme, Nutrition

Mr Philippe Moretto, Université de Bordeaux

Mr Richard Salive, INSERM

Mr Martin Teichman, École doctorale Science de la Vie et de la Santé

INTRODUCTION

HISTORY AND GEOGRAPHICAL LOCATION OF THE UNIT

Localized on the campus of Haut-Lévêque University Hospital, the UMR 1034 INSERM/Bordeaux University has been present in the scientific landscape of the city for more than 40 years. After an initial period where research was focused on atherosclerosis (INSERM U8, 1976-1996; INSERM U441, 1996-2006) the unit, under the incentive of its director, Mr T. Couffinhal, has gradually reoriented its scientific trajectory towards the molecular and cellular mechanisms underlying the response of the vascular compartment, in particular in the context of tissue ischemia (INSERM U828, then UMR1034, 2006-2016). The current project (2016-2021), still under the direction of Mr T. Couffinhal, is in strategic continuity and will focus on the analysis of microvascular dysfunction in cardio-neuro-vascular diseases.

RESEARCH ECOSYSTEM

The UMR 1034 is part of the "Department of Biological and Medical Sciences" of the Bordeaux University. The department is composed of eleven research units aiming to understand fundamental cellular, physiological and pathophysiological mechanisms, and working to develop innovative approaches in predictive medicine. The unit has participated in structuring actions of the University of Bordeaux such as the cross-cutting thematic action "VIVA, for Vascular Aging". The unit has a translational activity and strong interaction with hospital services. This is due to, on the one hand its location and proximity to the INSERM - Bordeaux University hospital clinical investigation center, and on the other hand the fact that some members of the unit are heads of clinical departments (haemato-biology; vascular surgery; cardiac surgery; anesthesiology; cardiology) or responsible for the cardiovascular part of the Biological Resource Center. This involvement translates into the setting up of hospital-university research projects such as the FHU-SMART project that aims to implement a multidisciplinary continuum of care, research and teaching in the field of small vessel disease and the RHU-SHIVA project designed to curb cognitive decline and dementia by fighting cerebral small vessel diseases.

HCÉRES NOMENCLATURE AND THEMATICS OF THE UNIT

SVE5 « Physiologie, Physiopathologie, Cardiologie, Pharmacologie, Endocrinologie, Cancer, Technologies Médicales » & SVE2 « Biologie Cellulaire, Imagerie, Biologie Moléculaire, Biochimie, Génomique, Biologie Systémique, Développement, Biologie Structurale ».

From 2016 to 2021, the unit was organized as a single team with a reach to decipher the mechanisms of vascular formation and adaptation to ischemic conditions (UMR 1034, "Cardiovascular adaptation to ischemia"). For the current contract, a similar structure and organization are maintained. However, the scientific project evolving toward understanding microvascular dysfunction, the unit will be renamed "Biology of Cardiovascular Diseases".

MANAGEMENT TEAM

The unit is and will be led by Mr T. Couffinhal.

UNIT WORKFORCE

Active staff	Number 06/01/2020	Number 01/01/2022
Full professors and similar positions	20	18
Assistant professors and similar positions	0	0
Full time research directors (Directeurs de recherche) and similar positions	2	2
Full time research associates (Chargés de recherche) and similar positions	3	3
Other scientists ("Conservateurs, cadres scientifiques des EPIC, fondations, industries, etc.")	5	6
High school teachers	0	0
Supporting personnel (ITAs, BIATSSs and others, notably of EPICs)	8	8

Permanent staff	38	37
Non-permanent professors and associate professors, including emeritus	1	
Non-permanent full time scientists, including emeritus, post-docs (except PhD students)		
PhD Students	8	
Non-permanent supporting personnel	6	
Non-permanent staff	15	
Total	53	37

GLOBAL ASSESSMENT OF THE UNIT

This one-team unit has worked for more than 40 years in the molecular mechanisms involved in cardiovascular pathologies, with emphasis on the vascular compartment (macro- and microcirculation). For the last five years, the members of the unit studied original signaling pathways controlling microcirculation in ischemic situations. The unit has made an outstanding effort to take into account the recommendations of the previous HCERES evaluation and has modified both its strategy and its scientific policy. As a telling example, the unit has secured an impressive amount of research funding during the last years, including both national and international grants. Although the whole unit has an excellent academic reputation, its international visibility is modest as revealed by the low involvement of unit members in article/grant/institutional activities at high level of expertise, the weak number of international collaborations and participation to prominent international conferences as well as the low percentage of publications in high-ranking journals. Therefore, the unit is strongly encouraged to develop its international recognition in the coming years. The scientific production of the unit is very good to excellent. Of note, the unit is undoubtedly on a clear upward trajectory with regard to the quality of its publications. Due to the composition of the unit and the nature of some of their works, the unit presents fundamental and clinical research activities giving the unit's research policy a singular translational dimension. The whole unit has an excellent capacity of interactions with the non-academic world, notably the valorization activity of the unit is clearly outstanding with an impressive number of filled patents. The unit has also an excellent organization. The policy of pooling financial resources is a remarkable anachronism, which indisputably reveals the collective approach to the life of the research unit. The unit has demonstrated an excellent involvement in training of Master students and an excellent capacity to bring their PhD students to the successful defense of their theses in adequate conditions. For the next five-year contract, the unit will focus its research efforts on the analysis of the molecular and cellular mechanisms at work in the development of microcirculation alterations in the etiology of cardio-neuro-vascular pathologies. The study of certain innovative and common signaling pathways in these pathological contexts gives a particular and relevant interest to the unit's global research strategy. The importance taken by the unit research on the neurovascular compartment is fundamentally interesting but remains a real challenge. The unit is advised not to multiply more than necessary the different research axes and sub-axes but to explore in more details using state of the art approaches the themes that have been previously identified as strategic.

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