



# **MP3CV - Mécanismes physiopathologiques et conséquences des calcifications cardiovasculaires : rôle des remodelage cardiovasculaire et osseux - UMR-S 1087**

Rapport Hcéres

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# HCERES

High Council for the Evaluation of Research  
and Higher Education

Department of Research Evaluation

report on research unit:

Pathophysiological Mechanisms and Consequences of  
Cardiovascular Calcification

MP3CV

under the supervision of  
the following institutions  
and research bodies:

Université de Picardie Jules Verne

Institut National de la Santé et de la Recherche  
Médicale - INSERM

Evaluation Campaign 2016-2017 (Group C)

# HCERES

High Council for the Evaluation of Research  
and Higher Education

Department of Research Evaluation

*In the name of HCERES,<sup>1</sup>*

Michel Cosnard, president

*In the name of the experts committee,<sup>2</sup>*

Pascal Houillier, chairman of the committee

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Under the decree N°2014-1365 dated 14 november 2014,

<sup>1</sup> The president of HCERES "countersigns the evaluation reports set up by the experts committees and signed by their chairman." (Article 8, paragraph 5)

<sup>2</sup> The evaluation reports "are signed by the chairman of the expert committee". (Article 11, paragraph 2)

## Evaluation report

This report is the sole result of evaluation by the expert committee, the composition of which is specified below.

The assessments contained herein are the expression of an independent and collegial reviewing by the committee.

Unit name:	Pathophysiological Mechanisms and Consequences of Cardiovascular Calcification
Unit acronym:	MP3CV
Label requested:	UMR
Current number:	1088
Name of Director (2016-2017):	Mr Saïd KAMEL
Name of Project Leader (2018-2022):	Mr Saïd KAMEL

## Expert committee members

Chair:	Mr Pascal HOUILLIER, Université Paris 6
Experts:	<p>Ms Céline COLNOT, Fondation Imagine, Université Paris 5</p> <p>Mr Stéphane GERMAIN, Collège de France (representative of CSS INSERM)</p> <p>Ms Anne-Laure GUILBAUT-GUILHOT, Université d'Angers (representative of supporting personnel)</p> <p>Ms Valérie NIVET-ANTOINE, Université Paris 5 (representative of the CNU)</p>
Scientific delegate representing the HCERES:	Ms Sophie EZINE
Representatives of supervising institutions and bodies:	<p>Mr Mohammed BENLAHSEN, Université de Picardie</p> <p>Ms Marie-Josèphe LEROY-ZAMIA, INSERM</p> <p>Mr Samir OULD ALI, INSERM</p>
Head of Doctoral School:	Mr Christian MASQUELIER, Doctoral school n° 585, "Sciences, Technologie, Santé"

## 1 • Introduction

### History and geographical location of the unit

The research unit was founded in 2006 at the University of Amiens with the fusion of 2 research teams: one specialized on bone diseases and the other on cardiovascular diseases. The unit focused on cardiovascular calcification processes and was labelled “Équipe Region-INSERM” with a financial support from both the Picardie region and INSERM.

In 2012, with the INSERM label the unit became U1088. It is the largest unit in the University of Picardie Jules Verne with 45 teacher-researchers, researchers and technicians in 2016.

Since September 2014, the unit is located in a new building dedicated to the research (co-financed by the Picardie region and the state. The University Research Center in Health (CURS) is located in the south hospital of Amiens.

The previous director who created the unit in 2006, moved to the University of Versailles Saint-Quentin in September 2013. He was maintained for 15 months as a co-director together with the current director who took the full direction on January 1<sup>st</sup> 2015.

### Management team

The INSERM 1088 unit is a single-team research unit. The current director, also candidate director of the unit for the next contract is Mr Saïd KAMEL. To facilitate the decision process, the director is assisted by a directory board composed of 4 members who help with the scientific orientations of the laboratory, the human and financial resources and the management of the laboratory.

### HCERES nomenclature

SVE1\_LS4

### Scientific domains

The U1088 unit has developed in the last 10 years an expertise on vascular disturbances and valvular calcification, particularly those occurring as a consequence of Chronic Kidney Disease (CKD).

## Unit workforce

Unit workforce	Number on 30/06/2016	Number on 01/01/2018
N1: Permanent professors and similar positions	36	30
N2: Permanent researchers from Institutions and similar positions	1	
N3: Other permanent staff (technicians and administrative personnel)	8	8
N4: Other researchers (Postdoctoral students, visitors, etc.)	4	
N5: Emeritus		
N6: Other contractual staff (technicians and administrative personnel)		
N7: PhD students	13	
TOTAL N1 to N7	62	
Qualified research supervisors (HDR) or similar positions	25	

Unit record	From 01/01/2011 to 30/06/2016
PhD theses defended	23
Postdoctoral scientists having spent at least 12 months in the unit	14
Number of Research Supervisor Qualifications (HDR) obtained during the period	6

## 2 • Assessment of the unit

## Global assessment of the unit

The research unit has been working for many years on vascular disturbances and vascular calcification, particularly those occurring as a consequence of chronic kidney disease. The main objectives along the past 5 years were to provide answers: 1) to the mechanisms involved in the calcification process; 2) to the hemodynamic and structural consequences of vascular calcification in animal models and in humans; 3) to the factors/biomarkers associated with cardiovascular calcifications; 4) to the new therapeutic strategies to prevent and treat cardiovascular calcifications.

The last assessment in 2011 (by AERES) recognized the potential of the research unit to significantly contribute to these focused and clinically relevant domains of research.

### Strengths

- the general research domain of the unit (vascular calcification) is relevant regarding the burden of cardiovascular morbidity-mortality, especially in CKD patients, and is not widely developed in France (or even in Europe);
- the interactions between the hospital and the research unit are actually strong and bi-directional: not only physicians actively participate to, or sometimes, lead the projects conducted in the research unit, but also non physician scientists are invited to bring their basic knowledge to physicians and participate to common meeting on a regular basis;
- the environment (research building, animal facility) is new and functional;
- several facilities (cell imaging ...) are in open access to the members of the unit;
- the research unit is strongly supported by the university, the school of medicine (recruitment of 2 associate professors in the recent years) and the school of pharmacy (recruitment of 2 associate professors in the recent years); in addition, the doyen of the medical school has an open position for a professor with full time research;
- some technical know-how (surgery for the generation of the mouse model of CKD, with high reproducibility) are quite unique and should be preserved;
- several research unit members are actively participating, as a WP leaders, in inter-regional consortia “Fédération Hospitalo-Universitaire” (FHU) and “Recherche Hospitalo-Universitaire” (RHU).

### Weaknesses

- an effort to identify/select a limited (number of research projects with increased complementary technics (molecular biology, cellular, histology, in vivo models, etc....) and conceptual approaches must be made; it will allow each program to be actually translational from basic, molecular pathophysiological studies to clinical research, and to hold potential for therapeutic and diagnostic innovation;
- each project must be organized into well-articulated work-packages with a leader. According to this expert panel, this is one condition that must be fulfilled to increase the level of the research conducted in this unit, the impact of the findings and publications, the reputation of the unit and its attractiveness;
- the current lack of appeal is manifested by the failure to attract at least one full time researcher within the last 5 years;
- interactions with industrial partners have not been developed, despite the main theme of the research unit being of high medical relevance;
- a significant increase in funding from national sources (ANR, FRM and other national foundations) is expected;
- the involvement of unit members in the local doctoral school is lower than expected.

### General assessment

The research unit has several strengths that will be helpful in order to achieve high level research performances in the future: it has a focused, medically relevant domain of interest; the scientific environment and local support are excellent; it is tightly connected to the hospital. Members of the unit must develop highly integrated research programs on a limited number of projects to increase the scientific and medical impact of the studies.