



Research evaluation

FINAL RESUME ON THE RESEARCH UNIT
EnVI - Endothelium, Valvulopathy, Heart Failure

UNDER THE SUPERVISION OF THE
FOLLOWING INSTITUTIONS AND RESEARCH
BODIES:

Université de Rouen
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-Louis Pépin, 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:

Endothelium, Valvulopathy, Heart Failure

Unit acronym:

EnVI

Current label and N°:

UMR INSERM U1096

ID RNSR:

201220175G

Application type:

Renewal

Head of the unit (2020-2021):

Mr Vincent Richard

Project leader (2021-2025):

Mr Jeremy Bellien

Number of teams and/or themes:

1

EXPERTS COMMITTEE MEMBERS

Chair:

Mr Jean-Louis Pepin, Communauté Université Grenoble Alpes, Grenoble, INSERM

Experts:

Ms Ana-Maria Gomez Garcia, INSERM, Châtenay-Malabry (representative of CSS INSERM)
Mr Daniele Catalucci, National Research Council, Milano, Italy
Ms Sophie Duchez, CNRS, Paris (supporting personnel)
Ms Muriel Laffargue, INSERM, Toulouse
Ms Samia Mourah, University Paris-Diderot, Paris (representative of CNU)

HCÉRES REPRESENTATIVE

Mr Claude Delcayre

REPRESENTATIVES OF SUPERVISING INSTITUTIONS AND BODIES

Mr Joël Alexandre, Université de Rouen
Mr Raymond Bazin, ITMO Physiologie, Métabolisme, Nutrition
Mr Christian Boitard, ITMO Physiologie, Métabolisme, Nutrition
Mr David Mallet, CHU de Rouen
Mr Samir Ould-Ali, INSERM
Mr Philippe Pareige, Université de Rouen

INTRODUCTION

HISTORY AND GEOGRAPHICAL LOCATION OF THE UNIT

ENVI is a cardiovascular research group created as INSERM unit from 2004 to 2011 under the direction of Mr Christian Thuillez and created again as INSERM U1096 in 2011 until now under the direction of Mr Vincent Richard. The current application is a renewal as a single team unit with a new director, Mr Jeremy Bellien, since Mr Vincent Richard became Vice-President for Research at University of Rouen Normandie. The Medical Campus Research building hosts all the pre-clinical research activities, while clinical research is performed at the clinical departments of the Rouen University Hospital (CHU) mostly located at 'Hôpital Charles Nicolle' immediately adjacent (5 min walk), or for one department in a nearby (6 km) University Hospital (Hôpital de Bois Guillaume).

RESEARCH ECOSYSTEM

The research federation "Institute for research and Innovation in Biomedicine" (IRIB, directed by Mr Vincent Richard) regroups all biomedical laboratories and participates in the Biomedical research network of Caen Normandie University (co-directed by Mr Vincent Richard) regrouping laboratories from Rouen and Caen. ENVI has several experimental rooms dedicated for surgery and cardiac functional evaluations in the medical campus animal facility. ENVI collaborates with the IBISA-labelled Cell Imaging (PRIMACEN) and animal behavior (SCAC) platforms and takes advantage of the flow cytometry-cell sorting facility integrated in INSERM U1234 PANTHER laboratory. ENVI is proposing to site research units, a small MRI facility (PICTUR) and an oxidative stress (BOSS, electron paramagnetic resonance) platform. The new UMS HERACLES will coordinate high-tech research infrastructures for life sciences. The unit will coordinate the "FHU" (Fédération Hospitalo-Universitaire) CARNAVAL, CARDiac Research Network on Aortic VALve and heart failUre. The solid translational/clinical aspect research is made possible due to a mixing university staff with clinicians issued from eleven different clinical departments of the CHU. Unit members are strongly involved and lead clinical research activities in the CHU: medical director of the Delegation for Clinical Research and Innovation (DRCI), vice-president of the regional committee of biomedical and public health research (CRBSP) and co-coordinator of the Clinical Investigation Center (CIC). Cardiovascular research has been identified as one of the three major clinical research axes of the Rouen University Hospital, and evaluation of ENVI and of the clinical cardiovascular research in the hospital will be complementary and timely synchronized.

HCÉRES NOMENCLATURE AND THEMATICS OF THE UNIT

SVE Sciences du vivant et Environnement

SVE5 Physiologie, physiopathologie, cardiologie, pharmacologie, endocrinologie, cancer, technologie médicale.

ENVI integrates clinical and experimental cardiovascular research aimed at identification of novel vascular, valvular and cardiac therapeutic targets.

MANAGEMENT TEAM

Mr Jeremy Bellien will succeed Mr Vincent Richard as the new director of the research unit.

UNIT WORKFORCE

Name of the unit: EnVI

Active staff	Number 06/01/2020	Number 01/01/2022
Full professors and similar positions	16	16
Assistant professors and similar positions	5	5
Full time research directors (Directeurs de recherche) and similar positions	1	1
Full time research associates (Chargés de recherche) and similar positions	0	0
Other scientists ("Conservateurs, cadres scientifiques des EPIC, fondations, industries, etc.")	7	0

High school teachers	0	0
Supporting personnel (ITAs, BIATSSs and others, notably of EPICs)	0	8
Permanent staff	29	30
Non-permanent professors and associate professors, including emeritus		
Non-permanent full time scientists, including emeritus, post-docs (except PhD students)		
PhD Students	15	
Non-permanent supporting personnel	6	
Non-permanent staff	21	
Total	50	30

GLOBAL ASSESSMENT OF THE UNIT

EnVI is a research unit which scientific scope is to provide pharmacological and/or biotherapeutic innovations aiming at reducing cardiovascular diseases. Its research is organized in three axes: 1/ Axis 1: Novel pharmacological approaches for endothelial protection, 2/ Axis 2: Innovations in aortic stenosis (AS)/ Transcatheter Aortic Valve Implantation (TAVI), and 3/ Axis 3: New strategies for the treatment of heart failure. The overarching goal of the three research axes is to develop translational research projects in major aspects of novel pharmacological approaches for endothelial protection, innovations in aortic stenosis/aortic valve implantation and new strategies for the treatment of heart failure. EnVI is on a positive trajectory, having improved international visibility and European networking, developed cohorts and biobanks for sustaining collaborations and increased basic science translational activities in the aortic stenosis axis during this mandate.

The scientific outputs are excellent with Axis 1 demonstrating a long-standing renown expertise in endothelial protection, Axis 2 visibility on aortic stenosis was quickly progressing at the international level with the prominent role of RHU 'STOP-AS' program and a high impact on clinical management pathways in the field. The cardiac lymphatic theme in Axis 3 has coordinated the ERA-CVD 2017-2021 LYMIT-DIS collaborative project. As a result, EnVI clearly has international recognition in the field and is even considered to have world-leading expertise in AS/TAVI. Scientific production is abundant and of excellent quality with 362 scientific articles (134 as first/last authors). More than 70 senior-authored original articles have been published in top 10 % specialized journals in cardiology, pharmacology, and physiology fields such as *Circulation*, *Journal of the American College of Cardiology*, *Hypertension*, *American Journal of Physiology*, *Blood*. However, publications as leaders in high-profile journals could be improved. This scientific production is accompanied by fruitful national and international academic collaborations and strong interactions and valorization projects with the non-academic world. The unit was successful in obtaining national and European academic grants and leading national and international networks (ERA-CVD LYMIT-DIS, 5 ANRs-PHRC programs and FHU CARNAVAL as coordinators). The high value expertise in the unit, the impressive scientific outputs and the lively and supportive atmosphere makes the unit attractive for clinicians and students. The involvement in training through research is excellent with a high number of trainees producing high quality research.

The project and the research perspectives for this new contract are consistent with the achievements and the results obtained by the unit. The project raises new relevant questions and is likely to advance pathophysiological knowledge in the various fields of expertise. The project is ambitious and requires to be sustained by recruitment of young talents.

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