



Research evaluation

FINAL RESUME ON THE RESEARCH UNIT
CRCTB - Bordeaux Cardio-Thoracic Research Center

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

Report published on April, 30 2021

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:

CRCTB - Bordeaux Cardio-Thoracic Research Center

Unit acronym:

CRCTB

Current label and N°:

U1045

ID RNSR:

201119422T

titre2_Application type:

Renewal

Head of the unit (2020-2021):

Mr Roger Marthan

Project leader (2021-2025):

Mr Patrick Berger

Number of teams and/or themes:

3

EXPERTS COMMITTEE MEMBERS

Chair:

Mr Jean-Louis Pepin, CHU de Grenoble (representative of CNU)

Experts:

Mr Serge Adnot, Université Paris-Est Créteil Val de Marne

Ms Carole Planes, Assistance publique - Hôpitaux de Paris (representative of CSS INSERM)

Ms Virginie Vasseur, INSERM, Tours (supporting personnel)

Mr Thierry Verbeet (retired), CHU Brugmann, Bruxelles, Belgique

HCÉRES REPRESENTATIVE

Mr Jorge Boczkowski

REPRESENTATIVES OF SUPERVISING INSTITUTIONS AND BODIES

Mr Raymond Bazin, ITMO PMN

Mr Christian Boitard, ITMO PMN

Ms Karine Gionnet, INSERM

Mr Gilles Guichard, Université de Bordeaux

Mr Eric Papon, Université de Bordeaux

INTRODUCTION

HISTORY AND GEOGRAPHICAL LOCATION OF THE UNIT

The Cardio-Thoracic Research Center of Bordeaux INSERM U1045 (CRCTB) was created in 2011 to develop translational research in cardio-thoracic medicine (i.e., pulmonary hypertension, asthma, chronic obstructive pulmonary disease (COPD) and cardiac arrhythmias) and was initially organized in three teams for achieving these goals: Team 1: Pathophysiology of the pulmonary circulation; Team 2: Bronchial remodeling; Team 3: Cardiac electrophysiology. The labelling of Liryc in 2011 ("L'Institut de Rythmologie et modélisation Cardiaque") as one of the six IHUs in FRANCE ["Institut Hospitalo Universitaire"]) was a major event accelerating the development of the research center. The funding of the LabEx "Translational Research and Advanced Imaging Laboratory" (TRAIL) in 2016 has also facilitated the development of imaging techniques, *in vivo* operating rooms and access to heavy equipment. The combination of these two successes has allowed the evolution towards a single, consolidated research center location. During the last contract, the team 'Endothelial Biology' from the IECB ("Institut Européen de Chimie et Biologie") joined the laboratory to focus on systemic vascular remodeling (i.e., Team 4) and was merged at the end of the contract with Team 1 to constitute a new Team 1: Pathophysiology of pulmonary and systemic circulation (new Team leader: Ms Christelle Guibert, CR INSERM). For the next contract, the CRCTB will include this new Team 1, plus Team 2: Bronchial remodeling (Team leader: Mr Patrick Berger) and Team 3: Cardiac electrophysiology (new Team leader: Mr Olivier Bernus). Mr Patrick Berger will succeed Mr Roger Marthan as the new director of the unit.

RESEARCH ECOSYSTEM

The Bordeaux Cardio-Thoracic Research Center is strengthened and reinforced by an exemplary insertion in a research ecosystem that supports research and innovation activities at several levels:

- (i) University of Bordeaux and University hospital:

The Cardio-Thoracic Pole (headed by Mr R. Marthan), the largest pole, of the University Hospital of Bordeaux (i.e., "Centre Hospitalier Universitaire" [CHU]) gathers all medicine and surgery units devoted to the treatment of cardiac and respiratory diseases (400 in-patient beds, a medical staff of 75 senior physicians). The Unit is strongly attached to the Clinical Investigation Center of Bordeaux (CIC 1401) for implementation of clinical trials. CRCTB is part of Health Sciences and Technologies research department (i.e., "Département Sciences et technologies pour la santé" [STS]) and University Hospital federation (FHU) ACRONIM (Mr P. Berger is one of the four coordinators).

- (ii) PIA programs:

The IHU Liryc, the LabEx TRAIL (Teams 2 and 3) and the EquipEx Music (Team 3) represent highly visible structures at national and international level. Importantly, midterm sustainability has been anticipated. The IHU program has been prolonged for five years. The IdEx of the University of Bordeaux has launched the 2021 selection of research main programs ("Grands programmes de recherche" GPR) aimed at succeeding to the national LabEx program. The CRCTB is a major contributor in two selected intention letters: bioimaging i.e., IMaging for Precision medicine within a collaborative translational program (IMPACT), and bioengineering i.e., Frontier of life (FOL).

- (iii) National and international leadership or collaborations in early-stage academic studies and in multicenter, international, randomized controlled trials are impressive with two exemplary illustrations:

The proposed director of the unit is the medical coordinator of the national "COhort of BRonchial obstruction and Asthma" (COBRA sponsored by INSERM and involving 20 French clinical and research centers). The IHU oversees the national collection of human heart tissues (CADENCE project).

HCÉRES NOMENCLATURE AND THEMATICS OF THE UNIT

SVE Sciences du vivant et environnement

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

MANAGEMENT TEAM

Mr P. Berger will succeed Mr R. Marthan as the new director of the unit.

UNIT WORKFORCE

Name of the unit: CRCTB - Bordeaux Cardio-Thoracic Research Center

Active staff	Number 06/01/2020	Number 01/01/2022
Full professors and similar positions	26	25
Assistant professors and similar positions	9	11
Full time research directors (Directeurs de recherche) and similar positions	2	0
Full time research associates (Chargés de recherche) and similar positions	6	5
Other scientists ("Conservateurs, cadres scientifiques des EPIC, fondations, industries, etc.")	15	16
High school teachers	0	0
Supporting personnel (ITAs, BIATSSs and others, notably of EPICs)	21	20
Permanent staff	79	77
Non-permanent professors and associate professors, including emeritus	1	
Non-permanent full time scientists, including emeritus, post-docs (except PhD students)	20	
PhD Students	24	
Non-permanent supporting personnel	16	
Non-permanent staff	61	
Total	140	77

GLOBAL ASSESSMENT OF THE UNIT

The overarching research goal of the three teams involved in the Cardio-Thoracic Research Center of Bordeaux is to develop translational research projects in major aspects of cardio-thoracic medicine, namely pulmonary hypertension, asthma, Chronic Obstructive Pulmonary Disease (COPD) and cardiac arrhythmias. The recommendations of the previous HCERES report have been fully addressed by grouping the three team's location in a single site and leveraging scientific interactions between teams. The scientific outputs and interactions and valorization projects with the non-academic world are outstanding: 903 scientific articles published during the last contract (392 as first/last authors, more than 150 senior-authored original articles have been published in top10% journals), 23 M € funds raised, one ERC starting grant, ERC Proof of Concept, direction of the IHU Lyric, 20 patents, four start-ups. The high value expertise in the unit, the impressive scientific outputs and the lively and supportive atmosphere makes the unit extremely attractive for young talents, established scientists, and students. The project and the research perspectives for this new contract are consistent with the achievements and the results obtained by the unit. The project appears ambitious, raises new relevant questions and is likely to advance pathophysiological knowledge in the various fields of expertise. The unit's balance between accomplishments during the previous contract and project are exceptional. In a team-by-team based analysis, Team 1 is an excellent team in cardio-respiratory pathophysiology with a great potential for a disruptive research on right ventricular dysfunction. Team 2 is an outstanding team in respiratory medicine, being one of the main French contributors at international level in this field. Team 3 is an outstanding team in the field of cardiology research and innovation, with a long-standing and worldwide-renown expertise in cardiac arrhythmias. Very few laboratories in the world have demonstrated such capabilities for integrated approaches to address and solve unmet needs from the molecule to the whole organ with transfer to patient care and technological innovation.

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