

FINAL RESUME ON THE RESEARCH UNIT:

Montpellier Cell Biology Research Center
(CRBM)

UNDER THE SUPERVISION OF THE FOLLOWING INSTITUTIONS AND RESEARCH BODIES:

Université de Montpellier

Centre national de la recherche scientifique -
CNRS

EVALUATION CAMPAIGN 2019-2020
GROUP A



In the name of Hcéres¹:

Nelly Dupin, Acting
President

In the name of the experts committee²:

Giuseppe Baldacci, 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 the unit.

UNIT PRESENTATION

Unit name: Montpellier Cell Biology Research Center

Unit acronym: CRBM

Current label and N°: UMR 5237

ID RNSR: 200711904N

Application type: Identical renewal

**Head of the unit
(2019-2020):** Ms Anne Debant

**Project leader
(2021-2025):** Mr Claude Prigent

**Number of teams
and/or themes:** 15 teams

EXPERTS COMMITTEE MEMBERS

Chair: Mr Giuseppe Baldacci, Institut Jacques Monod, Paris

Experts: Mr Yohanns Bellaïche, CNRS, Paris

Ms Vania Braga, Imperial College, United Kingdom

Ms Valerie Doye, CNRS, Paris

Ms Michèle Lieb, CNRS, Strasbourg (supporting personnel)

Mr Nicolas Minc, CNRS, Paris (representative of CNRS)

Ms Anne Straube, University of Warwick, United Kingdom

Mr Adrian Streit, Max Planck Institute for Developmental Biology, Germany

Ms Izabela Sumara, IGBMC, Strasbourg

Ms Sophie Tartare-Deckert, Inserm, Nice

Ms Marie-Hélène Verlhac, CNRS, Paris

Mr Jean-Marie Wurtz, Université de Strasbourg, Strasbourg

Mr Gabor Papai, IGBMC, Strasbourg

HCÉRES REPRESENTATIVE

Mr Hinrich Gronemeyer

REPRESENTATIVES OF SUPERVISING BODIES

Mr Jocelyn MERE, CNRS

Mr Hervé MOREAU, CNRS

Mr François PIERROT, Université de Montpellier

INTRODUCTION

HISTORY AND GEOGRAPHICAL LOCATION OF THE UNIT

The Centre de Recherches de Biochimie Macromoléculaire (CRBM: Centre for Biochemical and Macromolecular Research) was created as a CNRS intramural unit (laboratoire propre: LP) in 1966.

The first director was Emile Zuckerkandl, considered one of the founders of the field of molecular evolution. At the beginning, CRBM research was focused on comparing the sequences of proteins and their evolution. The following directors were Nguyen Van Thoai, Louise-Anne Pradel and Jacques Demaille. Biochemical studies were CRBM strong points; however, research started to become more oriented towards unravelling the function of proteins, by tackling the composition of multi-protein complexes and cell organelles as well as by studying the roles of kinases. The arrival of Marcel Dorée in 1982 strengthened this new research field by focusing on the control of meiotic maturation and the cell cycle in starfish and in *Xenopus laevis*. The characterization of MPF (maturation promoting factor) in 1989 by Marcel Dorée's group initiated a crucial decade for current understanding of the cell cycle.

Marcel Dorée became CRBM director from 1997 to 2003. He promoted the analysis of the cell cycle, associated with the study of protein degradation. Cell signalling research was developed with the arrival of different groups working on the control of cell proliferation, cell adhesion and cell transformation. During this period, a huge effort was put in developing cell imaging, leading to the creation of the « MRI » (Montpellier Rio Imaging) facility in February 2003. From 2003 to 2010, Paul Mangeat, specialist of cytoskeleton-cell membrane interactions, ensured the CRBM direction. CRBM became a joint research unit (UMR 5237), affiliated both to CNRS and the University Montpellier 2. During this period, CRBM strengthened its expertise in structural biochemistry by developing biophysical and bioinformatics approaches. Many scientific breakthroughs are the results of work carried out by CRBM research groups, particularly the discovery of the Greatwall kinase role in mitotic control. The investment policy in cell imaging was continued, allowing the MRI facility to offer its services to the entire scientific community of Montpellier thanks to the creation of new technology platforms. Under Paul Mangeat's direction, was performed the construction of a novel CRBM building to replace the old premises. The construction of the new CRBM was associated with that of a symmetrical building dedicated to the Centre d'études d'agents Pathogènes et Biotechnologies pour la Santé (CPBS), of an animal house and a « mouse transgenesis » technology facility for several Montpellier Institutes. The CRBM building was delivered at the end of 2010.

Since 2011, Anne Debant has ensured the CRBM direction. After the move into the new building six new research groups, selected after an international call, joined the institute. In 2012, CRBM created a Scientific Advisory Board. The acronym CRBM is maintained and now means Centre de Recherche en Biologie cellulaire de Montpellier (Montpellier Cell Biology Research Center).

The CRBM is located in one of the 2 CNRS campuses of Montpellier, which gathers 450 scientists and students working in the field of Biology and Health.

A major asset for the CRBM is its integration in the scientific and technological landscape of biological research in the Montpellier area. In particular, the CRBM contributes to, and profits from, the activity of different common technical facilities of critical importance for modern bio-medical researches. It is very well connected with two other neighbouring research units, the Institute of Molecular Genetics of Montpellier (IGMM), and the Institute for research in Infectiology of Montpellier (IRIM). During the next contract, the technical core facilities present in these three institutes will be federated and put under a unique direction.

In addition, the CRBM aims to strengthen its collaborations with the "Pôle Chimie Balard", with the Ecology-Environment institute of the CNRS, will continue to participate in the department of "health biology" of Montpellier University, in the cancer research initiative SIRIC of Montpellier, in the Labex "Epigenemed" and in the i-Site MUSE.

Management team

Anne Debant has directed the CRBM since 2011, with Serge Roche as deputy director.

The project for the next term is presented by the future director, Claude Prigent.

HCÉRES NOMENCLATURE

SVE 2 : Biologie cellulaire, biologie moléculaire, biochimie, génomique, biologique systémique, développement, biologie structurale

THEMATICS

CRBM research topics concern the mechanisms controlling cell division, adhesion and morphology. A major axis aims at understanding how protein function can be finely tuned through post-translational modifications and how this impacts on cell processes. A second aspect concerns the dynamics and the quantification of these molecular processes within a cell or an organism. Many groups have collectively focused on deciphering: i) the dynamics of signaling pathways, thanks to live imaging approaches; ii) the quantitative aspects of signaling pathways, through quantitative proteomic approaches. Some groups have developed bioinformatic tools to annotate and analyze large-scale data.

UNIT WORKFORCE

Montpellier Cell Biology Research Center		
Active staff	Number 06/30/2019	Number 01/01/2021
Full professors and similar positions	1	1
Assistant professors and similar positions	6	4
Full time research directors (Directeurs de recherche) and similar positions	17	18
Full time research associates (Chargés de recherche) and similar positions	21	18
Other scientists ("Conservateurs, cadres scientifiques des EPIC, fondations, industries, etc.")	0	
High school teachers	0	
Supporting personnel (ITAs, BIATSSs and others, notably of EPICs)	30	31
Permanent staff	75	72
Non-permanent professors and associate professors, including emeritus		NA
Non-permanent full time scientists, including emeritus, post-docs (except PhD students)	14	NA
PhD Students	14	NA
Non-permanent supporting personnel	37	NA
Non-permanent staff	65	NA
Total	140	72

GLOBAL ASSESSMENT OF THE UNIT

The CRBM has a very good international reputation in the field of molecular mechanisms implicated in controlling the cell cycle. Presently, CRBM research topics concern the mechanisms controlling cell division, adhesion, morphology and motility, in normal and pathological conditions. Another axis aims at understanding how protein function can be tuned through post-translational modifications and how such changes affect cellular processes. Several groups are analyzing the dynamics of signaling pathways, thanks to live imaging approaches, and studying the quantitative aspects of these pathways, through quantitative proteomic approaches. Finally, some groups have developed bioinformatics tools to annotate and analyze large-scale data. The teams are completely autonomous in their scientific choices. The scientific production is excellent, both in quantity and in quality, as it is shown by articles published in renowned international journals, and by the large number of researchers invited to international meetings. The CRBM is very well integrated in the scientific landscape of biological research in the Montpellier area. In particular, it contributes to, and profits from, the activity of several common high-quality technical facilities of critical importance for modern bio-medical researches. The groups are able to obtain grants from national funding agencies and from charities. Many researchers have academic or administrative functions and some of them are active in committees involved in evaluating and funding research projects. The future projects are in the continuity of present high-quality research in cell biology, with the possible recruitment of two new groups.

Globally, the committee considers that the documents supplied by the CRBM and the discussion at the videoconference, indicate that the CRBM shows excellent scientific outputs and activities, academic collaborations, reputation and appeal. The Unit also has very good interactions with the non-academic world, producing interesting results in translational research, and is committed to teaching at the University of Montpellier with a very good to excellent training of students through research. The project of the CRBM for the next mandate is very good to excellent.

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