



Research evaluation

FINAL RESUME ON THE RESEARCH UNIT  
IBGC - Institut de Biochimie et Génétique Cellulaires

UNDER THE SUPERVISION OF THE  
FOLLOWING INSTITUTIONS AND RESEARCH  
BODIES:

Université de Bordeaux

Centre national de la recherche scientifique - CNRS

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**EVALUATION CAMPAIGN 2020-2021**  
GROUP B

Report published on December, 13 2021

High Council for evaluation of research and higher education



In the name of Hcéres<sup>1</sup>:

Mr Thiery Coulhon, President

In the name of the experts committee<sup>2</sup>:

Mr Martin Van Der Laan, Chairman of the committee

Under the decree No.2014-1365 dated 14 November 2014,

<sup>1</sup> The president of Hcéres "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 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:**

Institut de Biochimie et Génétique Cellulaires

**Unit acronym:**

IBGC

**Current label and N°:**

UMR5095

**ID RNSR:**

199911781P

**Application type:**

Renewal

**Head of the unit (2016-2021):**

Mr Bertrand Daignan-Fornier

**Project leader (2022-2026):**

Ms Isabelle Sagot

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

12

## EXPERTS COMMITTEE MEMBERS

**Chair:**

Mr Martin Van Der Laan, Saarland University, Germany

**Experts:**

Ms Solange Desagher, IGMM, Montpellier

Mr Arnold J.M. Driessen, Groningen Biomolecular Sciences and Biotechnology Institute, The Netherlands

Ms Cathie Erb, IGBMC, Strasbourg-Illkirch

Mr Cayetano Gonzalez, IRB Barcelona & ICREA, Espagne

Ms Beata Grallert, Oslo University Hospital, Norvège

Mr Jean-Claude Martinou, Université de Genève Suisse

Mr Marco A. Mendoza-Parra, Genoscope, Evry

Ms Snezhana Oliferenko, King's College London and the Francis Crick Institute, UK

Ms Manuela Pereira, University of Lisbon, Portugal

Ms Zuzana Storchova, TU Kaiserslautern, Germany

## HCÉRES REPRESENTATIVE

Mr Hinrich Gronemeyer

## REPRESENTATIVES OF SUPERVISING INSTITUTIONS AND BODIES

Ms Karine Argento, CNRS

Mr Patrick Blader, CNRS

Ms Katja Boniface, University of Bordeaux

Ms Dephine Delacour, CNRS

Mr Alain Pierre Gadeau, University of Bordeaux

Mr Philippe Moretto, University of Bordeaux

## INTRODUCTION

### HISTORY AND GEOGRAPHICAL LOCATION OF THE UNIT

The Institute of Cellular Biochemistry and Genetics (IBCG) is located in Bordeaux and is affiliated to two supporting institutions, the CNRS and the University of Bordeaux, forming the mixed research unit UMR 5095. The IBCG was directed by Mr Bertrand Daignan-Fornier during the period 2015-2020. It will be directed by Ms Isabelle Sagot from January 1, 2022. Two main themes are addressed in the unit: Cell cycle, differentiation and cell death; mitochondria and bioenergetics. These two axes are studied with different biological models, from yeast to man, including fungi, *Drosophila*, *C. elegans* and mouse. Although only a few of the teams present at the time of the creation of the unit remain, the division into two distinct, even antagonistic poles persists. For the moment, ten of the thirteen teams are located in the main building on the Carreire campus, two teams are located at the IECB on the Pessac campus and one team is located close to the main building. Works and a restructuring of the main building, still in progress, will allow to gather all teams on the same site and should improve the cohesion of the unit.

### RESEARCH ECOSYSTEM

From 2011 to 2019, the unit was affiliated to the "Fédération de Recherche" TransBioMed, which was directed by Mr B. Daignan-Fornier for four years (2016-19). Since 2019, the unit is affiliated to the newly created Biological and Medical Sciences Department (directed by Mr A-P. Gadeau). The department regroups eleven research units, mostly oriented towards research on cancer, immunology, microbiology and rare diseases, belonging to the CNRS or INSERM. This multi-disciplinary department hosts a diversity of conceptual and methodological approaches, offering researchers multiple opportunities for interactions, technological and scientific innovations, and technology transfer to the clinic. Scientific activities in the department are supported by a joint service (TBM core) that hosts ten high-quality technological facilities, including the metabolomic analysis service located in the unit.

Since 2017, all Bordeaux units interested in cancer research are working on an interdisciplinary project ('Oncosphere'). The contribution of IBCG to this project likely impacts the scientific strategy of the Institute for the future. In addition, a regional network was created by the Region Nouvelle Aquitaine (Réseau Régional de Recherche) in which IBCG is represented.

Several teams are in close contact with units located in the Talence campus such as the "Institut de Chimie et de Biologie des Membranes et des Nano-objets (CBMN)", and several teams of the "Institut Européen de Chimie – Biologie" (IECB). A couple of IBCG teams have collaborations with teams of the "Laboratoire de Biogenèse membranaire" (CNRS UMR 5200) of the Green Campus located in Villenave d'Ornon. Other teams have collaborations with teams of the IINS unit (CNRS UMR5097) of the Neurocampus. Therefore, the IBCG has a broad network of collaborations with the local scientific community.

The Bordeaux University is one of the four confirmed IdEx (Initiative d'Excellence) Universities in France. Although many scientific programs were initiated within the 2011-2019 period, in the last years, the IBCG did not participate. More recently, with the IdEx renewal, the university launched a call for "grand programme d'excellence". Several teams of the unit are involved in these "Grand programme" initiatives.

### HCÉRES NOMENCLATURE AND THEMATICS OF THE UNIT

SVE Sciences du vivant et environnement

### MANAGEMENT TEAM

The present (Mr Bertrand Daignan-Fornier) and future (Ms Isabelle Sagot) directors are supported by five administrative personnel. These comprise two persons in charge of the financial service, of whom one is also in charge of Human Resources, a person in charge of the building maintenance and development as well as Health & Safety, a receptionist and a computer engineer.

## UNIT WORKFORCE

### IBGC - Institut de Biochimie et de Génétique cellulaires

Active staff	Number 06/01/2020	Number 01/01/2022
Full professors and similar positions	2	2
Assistant professors and similar positions	5	4
Full time research directors (Directeurs de recherche) and similar positions	14	13
Full time research associates (Chargés de recherche) and similar positions	11	10
Other scientists ("Conservateurs, cadres scientifiques des EPIC, fondations, industries, etc.")	0	0
High school teachers	0	0
Supporting personnel (ITAs, BIATSSs and others, notably of EPICs)	23	23
<b>Permanent staff</b>	<b>55</b>	<b>52</b>
Non-permanent professors and associate professors, including emeritus	3	
Non-permanent full time scientists, including emeritus, post-docs (except PhD students)	4	
PhD Students	10	
Non-permanent supporting personnel	14	
<b>Non-permanent staff</b>	<b>31</b>	
<b>Total</b>	<b>86</b>	<b>52</b>

## GLOBAL ASSESSMENT OF THE UNIT

The IBGC is a fundamental research institute dedicated to the study of cellular functions. The two major research themes are cell cycle/fate/death on the one hand and mitochondria/bioenergetics on the other hand. Many models are used (yeast, fungi, *Drosophila*, nematode, mouse and mammalian cells) as well as various approaches and technologies in biochemistry, cell/molecular biology, imaging and bioinformatics. The unit comprises a little less than a hundred people including 55 permanent staff dispatched in twelve teams for the next contract.

The IBGC has a respectable scientific output. From 2015 to 2019, IBGC has published 237 papers, 90 of which have IBGC researchers as lead authors. This includes papers in prestigious journals such as *Cell Metabolism*, *Nature Communications*, *Nature Microbiology*, *eLife*, *PLOS Biology*, *EMBO Journal*, *Journal of Cell Biology*, and *PNAS*.

The financial resources of the IBGC have been adequate for the size of the unit, however funding is on a downward slope during the current five-year period ranging from 1.182 M€ in 2015 to 526 k€ in 2019 for contractual resources, in particular due to the end of an ERC and notably from ANR. Only fifteen postdoctoral fellows were trained, which may indicate a lack of attractiveness but can also be a consequence of the drop in funding. A strategy of support and mentoring whenever necessary has to be put in place to ensure continued funding for the teams by applying to external and international funding options (ERC, ITN, HSFP, etc.). International collaborations should be considered in this sense.

Several teams (e.g., 3 (Cell Energy Metabolism), 6 (Computational Biology & Bioinformatics), 10 (Non-Self Recognition in Fungi), 11 (Structure, function and biogenesis of the ATP synthase) and others have international collaborations and significant international recognition. This could be significantly improved at the level of the unit by i/ organizing international conferences on some aspects explored in the unit, ii/ applying to international competitive grants on scientific aspects federating several teams of the unit, iii/ encouraging the scientists of the unit to participate more often to key-international conferences.

Most of the teams have minor engagements in interactions with the non-academic world and no impact on economy, society, culture or health can be projected at this point. This is essentially due to their basic research portfolios. The exceptions are teams 1 and 11 whose activities are exceptional.

During the last term, 105 Master (Master 1 and Master 2) and 26 PhD students have been trained and fifteen theses have been defended. The duration of these varied between 35 and 52 months. With one exception, each PhD student had one first author publication. There is room to improve training through research in a number of teams, given that 25 researchers have an HDR and that the number of PhD students per team varies between zero and eight. Participating to ITNs could improve this aspect.

Except for the recently recruited teams, the five-year project is a continuation of the themes addressed by the individual teams. Clearly, a *bona fide* scientific vision on the direction for the next five years is lacking. Rather, the 'scientific vision' corresponds to a structuration of the unit into two poles, which reiterates the previous organization: a pole for cell cycle and cell fate, a pole for mitochondria and cellular energetics and a new pole, at the interface between the two. This separation into two poles is rather artificial and unbalanced. This is especially true for the teams at the interface, whose themes seem to be more in line with the mitochondria/bioenergetics theme. IBGC belongs to a consortium aiming to connect all researchers and clinicians working on cancer in Bordeaux. The network currently brings together more than 1,000 people. The IBGC leads the fundamental axis of this project. This should improve the visibility and attractiveness of the IBGC, as well as encourage the establishment of collaborations and joint funding applications with other research units. However, to ensure its participation in Oncosphere, the IBGC needs to significantly increase its funding or to redefine its internal strategy.

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