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LBAI - Lymphocyte B et autoimmunité

Rapport Hcéres

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HCERES

High Council for the Evaluation of Research
and Higher Education

Research units

HCERES report on research unit:

Laboratory of B lymphocytes and autoimmunity

LBAI

Under the supervision of the following
institutions and research bodies:

Université de Bretagne Occidentale - UBO

Institut National de la Santé et de la Recherche

Médicale - INSERM

HCERES

High Council for the Evaluation of Research
and Higher Education

Research units

In the name of HCERES,¹

Michel Cosnard, president

In the name of the experts committee,²

Claudine Schiff, chair of the committee

Under the decree N^o.2014-1365 dated 14 november 2014,

¹ The president of HCERES "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 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: Lymphocyte B et Autoimmunité

Unit acronym: LBAI

Label requested: UMR Inserm

Current number: EA2216, Inserm ERI29

Name of Director (2015-2016): Mr Jacques-Olivier PERS

Name of Project Leader (2017-2021): Mr Jacques-Olivier PERS

Expert committee members

Chair: Ms Claudine SCHIFF, Centre d'Immunologie de Marseille-Luminy, Marseille

Experts: Ms Ariane BERDAL, Centre de recherche des Cordeliers, Paris (representative of the CNU)

Ms Yolande RICHARD, Institut Cochin, Paris (representative of Inserm)

Scientific delegate representing the HCERES:

Ms Sophie EZINE

Representatives of supervising institutions and bodies:

Mr Rémi BRAJEUL, CHU de Brest

Mr Pascal GENTE, Université de Bretagne Occidentale

Mr Pascal OLIVARD, Université de Bretagne Occidentale

Ms Stéphanie POMMIER, Inserm

Heads of Doctoral Schools:

Mr Georges BARBIER, Doctoral School n° 373 “Santé, Information - Communications, Mathématiques, Matière - SICMA”

Mr Christian BROSSEAU, Doctoral School n° 373 “Santé, Information - Communications, Mathématiques, Matière - SICMA”

1 • Introduction

History and geographical location of the unit

Mr Pierre YOUINOU created the group “Immunology and Pathology” in 1983 and this research unit was promoted and reconducted as Équipe d’Accueil (EA 2216) from 1992 to 2016. Since, the retirement of Mr Pierre YOUINOU in 2011, the team has been led by Mr Jacques-Olivier PERS. It has received the recognition of the INSERM and of the Brittany Region for the 2014-2016 period with the name “Laboratory of Immunotherapies and Pathologies of B lymphocyte” (LIPaB, ERI29). The unit, dedicated to the studies of normal and pathological B cells, is located at the Brest University Hospital. This location allowed strong interactions with several clinical departments (Rheumatology, Immunology, Hematology, Nephrology-Transplant and Periodontology) providing human models of autoimmunity, lymphoid disease, renal allografts and periodontal disease.

Management team

Mr Jacques-Olivier PERS has been the director of the unit for the current contract (2012-2016) and will head the unit for the next (2017-2022) period.

HCERES nomenclature

SVE1_LS6, SVE1_LS7, SVE1_LS2

Scientific domains

Normal and pathological B-lymphocytes, diagnosis and treatment of B-cell diseases.

Unit workforce

| Unit workforce | Number on 30/06/2015 | Number on 01/01/2017 |
|---|----------------------|----------------------|
| N1: Permanent professors and similar positions | 11 | 11 |
| N2: Permanent researchers from Institutions and similar positions | | 1 |
| N3: Other permanent staff (technicians and administrative personnel) | 2 (1.5) | 3 (2.5) |
| N4: Other professors (Emeritus Professor, on-contract Professor, etc.) | 1 | |
| N5: Other researchers from Institutions (Emeritus Research Director, Postdoctoral students, visitors, etc.) | 3 | |
| N6: Other contractual staff (technicians and administrative personnel) | 4 (3.5) | |
| N7: PhD students | 9 | |
| TOTAL N1 to N7 | 30 (29) | |
| Qualified research supervisors (HDR) or similar positions | 9 | |

| Unit record | From 01/01/2010 to 30/06/2015 |
|---|-------------------------------|
| PhD theses defended | 14 |
| Postdoctoral scientists having spent at least 12 months in the unit | 2 |
| Number of Research Supervisor Qualifications (HDR) obtained during the period | 1 |

2 • Overall assessment of the unit

Introduction

During the 2012-2016 contract the unit has organized the B-cell research in 3 interdependent themes:

- B lymphocyte physiology: characterization of human regulatory B cells, identification of different forms of the B cell survival factor BAFF, analysis of calcium signalling in B cells and epigenetic regulation of B cells;
- B lymphocyte pathology: analysis of the role of B cells in autoimmunity, chronic lymphocytic leukemia, kidney graft rejection and periodontal diseases;

- B lymphocyte immunotherapies: elaboration of protocols and diagnostic tools, role of intravenous immunoglobulins (Igs) on B cells and new approaches in immunotherapy.

The research developed upon Mr Jacques-Olivier PERS's taking the direction remained focused on the role of B cells in autoimmunity, but is more balanced between basic and clinical approaches, in comparison with the scientific direction of the previous management. Moreover, due to collaborations with Brest hospital departments, a new research axis have been opened (B-cell on periodontal diseases) in addition to the former autoimmune models (Sjögren's syndrome, Systemic Lupus Erythematosus and Rheumatoid Arthritis). Finally, the structuration of specific technical platforms (Flow cytometry, Calcium influx-screening and epigenomics analysis) was undertaken.

Global assessment of the unit

During the 2012-2016 contract, the unit has successfully developed the previously recognized expertise of the former unit head in autoimmunity and B-cell hemopathies (CLL), specifically working on the role of B lymphocytes in such diseases. Moreover, the unit has promoted the analysis of B cells in physiology, with a specific focus on regulatory B cell subsets, which play a central role in regulating the immune response.

The unit benefited of the support and of staff positions from the Brest University and the Brest Hospital. It also obtained substantial financial support from the "Investissements d'Avenir" program (Labex for Immunotherapy Graft Oncology) as well as European support for its participation to the European project on "Innovative Medicines Initiative, IMI". During this contract, four patents have also been filed; two are licensed and started preclinical development.

PhD students from different nationalities constitute a substantial fraction of the unit workforce. Staff members have developed effective national and international collaborations and they actively participate in training and in dissemination of scientific culture.

The quality of science is good to very good and the level of publications was substantially increased during the 2012-2016 contract. An impressive number of in house and collaborative papers have been obtained over the period, with one quarter of them in very good journals.

Strengths and opportunities in the context

The head of the team has developed a national and international visibility and has become a scientific leader in the field of basic and clinical research.

The unit participates to national and international networks and received substantial financial support allowing also personnel recruitment.

Four patents have been filed, two were licensed and two have obtained maturing funds. The unit has developed a new software for reading biopsy slides.

The unit is well-structured (Science and Technology Steering Committee, research seminars, immunopathology meetings, meeting with students...).

Unit members contribute actively to training actions and the unit hosted foreign students.

The team will benefit from the arrival of an associate professor (Chaire d'excellence INSERM/Université de Bretagne Occidentale, UBO) and of a pathologist, expert in Sjögren's syndrome. Thanks to UBO and to the Brest University hospital, a University Lecturer and Hospital Practitioner will be discharged of teaching duties and fully committed to research activities for the five coming years. A bioinformatician position is currently open and will be funded for 4 years by the IMI project.

Follow-up studies by a clinical network have been set up by the team concerning specific autoimmune disease cohorts, and associated with recent and innovative technical platforms (cytometry, calcium, epigenetics,...) giving access to big data production and analysis at an international scale.

Weaknesses and threats in the context

No integrated view (in the report) on the role of immune cells, among which the B lymphocytes, in the context of the autoimmune pathologies studied in the unit.

Too many projects for the number of full-time scientists.

Many projects are still at the level of descriptive stage and are not put into a general biological perspective.

A high percentage of in house published papers with impact factor < 3.

Recommendations

As already mentioned in the previous AERES report, the lack of full-time scientists and the variety of projects and models lead to some dispersal.

The committee recommends further prioritizing the projects in order to bring all the unit expertise on the most internationally competitive themes.

This refocusing and the recruitment of full-time researchers are absolutely required to increase the frequency of high-level publications and to optimize the visibility of the team's work.

A clear policy for the identification and recruitment in the future of young researchers is needed.