

FINAL RESUME ON THE RESEARCH UNIT
Cellular and Molecular Immuno-Endocrinology

UNDER THE SUPERVISION OF THE
FOLLOWING INSTITUTIONS AND RESEARCH
BODIES:

ONIRIS - École nationale vétérinaire, agroalimentaire et
de l'alimentation, Nantes Atlantique

Institut national de recherche pour l'agriculture,
l'alimentation et l'environnement - INRAE

EVALUATION CAMPAIGN 2020-2021
GROUP B



In the name of Hcéres¹:

Mr Thierry Coulhon, President

In the name of the experts committee²:

Mr Christoph Rummel, 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:

Cellular and Molecular Immuno-Endocrinology

Unit acronym:

IECM

Current label and N°:

USC1383

ID RNSR:

201220092S

Application type:

Renewal

Head of the unit (2020-2021):

Mr. Jean-Marie Bach

Project leader (2021-2025):

Ms. Julie Hervé

Number of teams and/or themes:

1

EXPERTS COMMITTEE MEMBERS

Chair:

Mr Christoph Rummel, Justus Liebig University Giessen, Germany

Experts:

Ms Isabelle Oswald, INRAE, Toulouse (representative of CSS INRAE)

Ms Fanny Pilot-Storck, ENV Maisons-Alfort (representative of CNECA)

Mr Benoit Salomon, INSERM, Paris

Ms Emilie Doz-Deblauwe Emilie, INRAE Tours (supporting personnel)

HCÉRES REPRESENTATIVE

Mr Jean-Francois Hocquette

REPRESENTATIVES OF SUPERVISING INSTITUTIONS AND BODIES

Ms Laurence Deflesselle, Oniris

Mr Fabrice Laurent, INRAE

INTRODUCTION

HISTORY AND GEOGRAPHICAL LOCATION OF THE UNIT

The Cellular and Molecular Immuno-Endocrinology unit (IECM) is under the supervision of two managing bodies Oniris (Nantes Atlantic College of Veterinary Medicine, Food Sciences and Engineering) and INRAE (Animal Health Division). This unit was created in 1979 by Mr. P. Saï and Mr. B. Charbonnel.

It is a small research unit with a single team. It is located on the Chantrerie campus of Oniris in Nantes, where most of the professors/assistant professors teach.

RESEARCH ECOSYSTEM

The unit has very strong links with Oniris and INRAE. At the national level, collaborations have been established with units of INRAE, INSERM and CNRS as well as with a university team. International collaborations have been established with Sydney, Miami, Ohio and Padova Universities.

ICEM is involved in important local PIA projects: CESTI IHU (European center for transplantation and immunotherapy sciences), NExT I-Site.

HCÉRES NOMENCLATURE AND THEMATICS OF THE UNIT

SVE Sciences du vivant et environnement
SVE5.

While it was initially dedicated entirely to research on type 1 diabetes research, the unit is now expanding its research activities to immunology and metabolism in order to improve human and animal health.

MANAGEMENT TEAM

Currently the head of the unit is Mr. J.M. Bach and the deputy head Ms. B. Lieubeau. For the next contract, the head will be Ms. J. Hervé and the deputy head Ms. B. Lieubeau.

UNIT WORKFORCE

Name of the unit: IECM

Active staff	Number 06/01/2020	Number 01/01/2022
Full professors and similar positions	1	1
Assistant professors and similar positions	3	3
Full time research directors (Directeurs de recherche) and similar positions	0	0
Full time research associates (Chargés de recherche) and similar positions	1	1
Other scientists ("Conservateurs, cadres scientifiques des EPIC, fondations, industries, etc.")	3	3
High school teachers	0	0
Supporting personnel (ITAs, BIATSSs and others, notably of EPICs)	7	7
Permanent staff	15	15
Non-permanent professors and associate professors, including emeritus		
Non-permanent full time scientists, including emeritus, post-docs (except PhD students)		
PhD Students	1	

Non-permanent supporting personnel		
Non-permanent staff	1	
Total	16	15

GLOBAL ASSESSMENT OF THE UNIT

The IECM unit of fifteen permanent members focuses on intimate interactions of stress, immunity and metabolism in humans and animals. Its history of research in type 1 diabetes and metabolism remains an important background and expertise. A successful start-up company emanating from the unit's research closely interacts with the unit on some research aspects (in particular on xenotherapy). The creation of an immuno-monitoring platform complements the expertise in immunology. Emerging work on extracellular vesicles (EV), as a new tool and focus, nicely integrates into the overall goal to investigate animal robustness in particular of farm animals (pigs) in the framework of the One health concept. This unique combination makes use of opportunities that arise from its base at ONIRIS and the field of basic and clinical veterinary and human research. Indeed, multidisciplinary complementary backgrounds (university, pharmacist, veterinarian, engineer, and clinician), in particular with clinician involvement, are instrumental for innovative further developments at IECM.

The scientific output (28 papers out of which eighty % of publications related to the specific field of pancreas immunobiology are rated in the Q1 within the respective research field, 7.25 % are exceptional and approximately 20 % excellent), is enriched but also hampered by large teaching duties of at least five permanent laboratory members. The journals targeted were *Journal of Extracellular Vesicles*, *Journal of Clinical Investigation*, *PNAS*, *Diabetes*, *Journal of Autoimmunity*, *Frontiers in Immunology*, *European Journal of Immunology*, *Scientific Reports*, *Biotechnology Bioengineering*, ... Some EV-related publications are highly visible and six outstanding publications pertaining to the field of EV, diabetes and transplantation have been published (six out of 28 articles).

Fundraising was successful for national grants (coordination and partnerships), PIA grants (partnership), local grants (coordination), grants from foundations and charities (coordination), and others including ONIRIS/INRAE/Private Sponsors IMT-A or Ministry of Agriculture.

Of note, scientific output has greatly increased over the five past years compared to the previous evaluation period (doubling funding, increased number of papers by one third, increase of publications in higher ranked journals).

With two filed patents and one accepted and the close interaction with the co-created start-up Xenothera, valorization and transfer of research are impressive for a rather small unit.

The growing reputation at the international level of the unit is illustrated by the creation of new international and national networks on EV (e.g., editorial board membership, conferences) and publication records (e.g., positions papers) and could be improved in the next term by increasing the number of visiting scientists (senior or postdoctoral), by fostering internationalization (laboratory rotations, visits, exchanges) for trainees, by improving the website in order to attract potential international applications and foster international collaborations and grant proposals. Additionally, the new EV networks should be used to intensify collaborations, to conduct collaborative solid preliminary work, to publish collaborative papers and to submit joined grant proposals.

Considering the training capacity of the unit (3 HDR), the IECM performed well in training through research as illustrated by the training of seven PhDs (five defended) and of fourteen Master students.

IECM is led by a dynamic team of a director and a co-director. Internal organization is transparent and was improved as recommended in the last evaluation report (laboratory meetings, steering meetings, etc.). It is a monothematic, one-team unit of small size, which involves staff and administration of a rodent platform.

The five-year project is well balanced and focuses even more on the obvious skills and expertise of IECM, which is promising and likely will lead to even higher output and competitive performance (publications, funding, attraction of scientists from outside) in the future.

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