MICMAC - Microenvironment, cell differentiation, immunology and cancer

Rapport Hcéres

HCERES

High Council for the Evaluation of Research and Higher Education

Research units

HCERES report on research unit:

Microenvironment, Cell Differentiation, Immunology and Cancer

MICMAC

Under the supervision of the following institutions and research bodies:

Université Rennes 1

Institut National de la Santé Et de la Recherche Médicale - INSERM

Evaluation Campaign 2015-2016 (Group B)

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]

Stefan Scheding, chairman of the committee

Under the decree No.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:	Microenvironment, Cell Differentiation, Immunology and Cancer
Unit acronym:	MICMAC
Label requested:	UMR-S
Current number:	UMR-S 917
Name of Director (2015-2016):	Ms Karin TARTE
Name of Project Leader (2017-2021):	Ms Karin TARTE

Expert committee members

Chair:	Mr Stefan SCHEDING, Lund University, Sweden
Experts:	Ms Susan CHAN, IGBMC, Strasbourg (representative of the CSS Inserm)
	Mr Thierry DEFRANCE, CIRI, Lyon
Scientific delegate representing the HCERES:	
	Mr Jean ROSENBAUM
Representatives of supervising institutions and bodies:	
	Ms Anne JOUVENCEAU, Inserm
	Mr Claude LABIT, University of Rennes
	Mr Pierre TIEBERGHEN, Établissement Français du Sang
Head of Doctoral School:	
	Ms Nathalie THERET, Doctoral school n°92 “Vie Agro Santé - VAS”

1 • Introduction

History and geographical location of the unit

The unit Microenvironment, *Cell Differentiation, Immunology and Cancer* (MICMAC) is the continuation of the monothematic INSERM unit U 917 *Microenvironment and Cancer (MICA)*, which was created in 2008 and renewed in 2012. The unit is located in a building of the University of Rennes, close to the Rennes University Hospital.

Management team

The team is managed by a steering committee consisting of the director and co-director, a clinical representative and a local representative of the blood bank (EFS Bretagne).

HCERES nomenclature

SVE1_LS4 Physiologie, physiopathologie, biologie systémique médicale

SVE1_LS6 Immunologie, microbiologie, virologie, parasitologie

Scientific domains

The team is performing preclinical research addressing normal and malignant B-cell differentiation and microenvironment, respectively, as well as clinical-translational projects on biomarkers in lymphomas, mesenchymal stroma cells and immune-modulation in sepsis.

Unit workforce

Unit workforce	Number on 30/06/2015	Number on 01/01/2017
N1: Permanent professors and similar positions	10	12
N2: Permanent researchers from Institutions and similar positions	3	3
N3: Other permanent staff (technicians and administrative personnel)	10	10
N4: Other professors (Emeritus Professor, on-contract Professor, etc.)		
N5: Other researchers from Institutions (Emeritus Research Director, Postdoctoral students, visitors, etc.)	4	
N6: Other contractual staff (technicians and administrative personnel)	6	
N7: PhD students	9	
TOTAL N1 to N7	**42**	
Qualified research supervisors (HDR) or similar positions	8	

Unit record	From 01/01/2010 to 30/06/2015
PhD theses defended	8
Postdoctoral scientists having spent at least 12 months in the unit	6
Number of Research Supervisor Qualifications (HDR) obtained during the period	2

2 • Overall assessment of the unit

Introduction

The monothematic INSERM unit U 917 *Microenvironment and Cancer (MICA)* was created in 2008 and renewed in 2012. The unit is located in a building of the University of Rennes, close to the Rennes University Hospital. The team addresses basic questions of normal and malignant B-cell differentiation and how the bidirectional interactions between the microenvironment and leukemic B cells impact on follicular lymphoma (FL) cell growth. Furthermore, translational projects include identification of lymphoma biomarkers and optimisation of clinical mesenchymal stromal cell therapy. The unit is co-affiliated with INSERM and University of Rennes 1. It has strong ties with the Hematology Department of the Rennes University Hospital and the French Blood bank (EFS). Furthermore, the unit belongs to the Research Federation (SFR) Biosit and is part of the Doctoral School *Life, Agronomy and Health* (Univ. of Rennes). For the next term, the unit plans to continue and extend its work in the monothematic research unit *Microenvironment, Cell Differentiation, Immunology and Cancer* (MICMAC), now also including a line of research focusing on immune-modulation in a non-tumor setting, i.e. sepsis.

Global assessment of the unit

The proposed unit *Microenvironment,* Cell Differentiation, Immunology and Cancer (MICMAC) is the continuation of the monothematic INSERM unit U 917 Microenvironment and Cancer (MICA). MICA has been successful in establishing a solid and promising basic and translational research program in immunology/hematology. The team has a strong and dedicated leadership and the program is well integrated with the Hematology Department of the Rennes University Hospital and the French Bloodbank (EFS). The necessary infrastructure and competence are in place or available through cooperations. Furthermore, the team consists of a number of excellent researchers and is actively involved in a number of national and international research activities, resulting in efficient collaborative networking. The high academic reputation of the group members is reflected by a number of invitations as invited speaker and participation in evaluation committees. In the last five years, the group has made considerable progress and gained an international reputation due to the high quality and impact of its scientific work. Main achievements have been made on the preclinical as well as on the translational side, with important contributions to the field. The quantitative scientific production has been very good to excellent with a total 52 publications (including original reports and reviews), of which the majority is directly related to the program. The unit is attractive to international applicants, and has trained a number of post-doctoral fellows and doctoral students. The success of the group is further documented by acquisition of considerable external funding, both nationally and internationally.

Strengths and opportunities in the context

MICA is a well-established and productive unit, providing a solid base to build upon and to generate an even stronger and improved research program in the proposed MICMAC program. Several points add to the strength of this unit, including an experienced and effective leadership and a long-standing expertise of its members in experimental hematology/immunology on an internationally competitive level. Furthermore, the unit is tightly connected to the clinical Hematology Department and the Bloodbank. This rare and close interaction between clinical and preclinical partners will allow the unit to perform important translational studies addressing clinically relevant questions related to the preclinical program. The program has an excellent network nationally and internationally and is highly visible through its publications. This certainly raises the chances to recruit outstanding students and young researchers to the

program. Lastly, the group has started to establish relevant *in vivo* models, which can be key to take the next step towards publication in the highest top-ranking scientific journals.

Weaknesses and threats in the context

Despite the obvious strengths of the program there are some potential weaknesses that need to be taken into consideration when planning for the next phase of the program. Most of these weaknesses have been identified in a thorough SWOT analysis performed by the applicants and appropriate measures to address most of these issues have been suggested. Weaknesses from the SWOT analysis include the low number of full time researchers, the lack of very high impact publications, the lack of a hematopathologist in the team, the small size of the research unit and insufficient animal facility space and support. Additional weaknesses identified through the review process relate to the broadness of the otherwise well developed research strategy. Although the proposed research program is generally grounded in preliminary results and expertise of the lab, it is in some parts too vast for this relatively small research group, and the incorporation of new preclinical and translational research lines may lead to loss of focus. A more focused approach could improve the quality of the program and translate important findings into clinical studies.

Recommendations

The unit should maintain the same path of research that was successfully pursued in the last period. It is recommended to focus on the further development of the existing research rather than extend the translational part of the program. The basic research lines need to be strengthened by suitable *in vivo* models, some of which are already being developed. Furthermore, given the strong focus on human material, the recent development of suitable xenotransplantation models appears to be especially important. Lastly, the unit should aim to better integrate their successful translational program with the themes developed in their basic research program.