CRCINA -Centre de recherche en cancérologie et immunologie Nantes-Angers

Rapport Hcéres

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HCERES

High Council for the Evaluation of Research and Higher Education

Research units

HCERES report on research unit:

Centre de Cancérologie et d'Immunologie Nantes-Angers

CCINA

Under the supervision of the following institutions and research bodies:

Université de Nantes

Université d'Angers - UA

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

Centre National de la Recherche Scientifique - CNRS

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]

Muriel MOSER, chairwoman 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:	Centre de Cancérologie et d'Immunologie Nantes-Angers
Unit acronym:	CCINA
Label requested:	UMR, UMR_S
Current number:	UMR 6299, UMR_S 892
Name of Director (2015-2016):	Mr Jacques LE PENDU
Name of Project Leader (2017-2021):	Mr Marc GREGOIRE

Expert committee members

Chair:	Ms Muriel MOSER, Université Libre de Bruxelles, Belgium
Experts:	Mr Vincent DIVE, CEA Saclay (representative of INSERM)
	Ms Xuefen LE BOURHIS, University of Lille (representative of CNU)
	Ms Sophie LUCAS, University of Louvain, Belgium
	Ms Fathia MAMI-CHOUAIB, Institut Gustave Roussy, Villejuif (representative of CoNRS)
	Mr Bernhard MOSER, University of Cardiff, UK
	Mr Bertrand NADEL, University of Marseille (representative of INSERM)
	Mr Jean-Ehrland RICCI, University of Nice (representative of CoNRS)
	Mr Guus VAN DONGEN, University of Amsterdam, The Netherlands
	Mr Christian WIDMANN, University of Lausanne, Switzerland

Scientific delegate representing the HCERES:

Mr Jean ROSENBAUM

Representatives of supervising institutions and bodies:

Mr Olivier LABOUX, University of Nantes

Ms Marie-Josèphe LEROY-ZAHMIA, INSERM

Mr Bruno LUCAS, CNRS

Mr Jean-Paul SAINT-ANDRÉ, University of Angers

Head of Doctoral School:

Mr Frank BOURY, Doctoral School n° 502 "Biologie Santé"

1 • Introduction

History and geographical location of the unit

CRCNA is a structure initially created as an INSERM research center (INSERM U892) in 2008. Mr Marc BONNEVILLE was the first director (2008-2012) and passed the responsibility to Mr Jacques LE PENDU, the current director.

The Unit INSERM 892- CNRS 6299 comprises 18 teams, 325 people, including 112 researchers, 48 PhD students, 8 postdoctoral fellows, 64 engineers and technicians. The center is organized in 3 departments: 1) Immunology and Immunotherapy; 2) Cell death and resistance and 3) Immunospecific targeting of radionucleides and nanoparticles.

Most of the teams (11) are located in the center of Nantes, 2 teams are close to Nantes (near a Cancer Medical and Research Center) and 2 teams are located in Angers. The unit has recently integrated 2 new teams, according to the recommendation of the previous evaluation panel: team 15 and team 17 (ATIP Avenir). Another team (18), located in Angers, is applying to join the CCRNA in 2017.

Management team

Mr Jacques LE PENDU is currently finishing his 5-year term. Mr Marc GRÉGOIRE has been recently elected and will be the next director, starting from January 2017.

HCERES nomenclature

SVE1_LS6 Immunologie, microbiologie, virologie, parasitologie

SVE1_LS3 Biologie cellulaire, biologie du développement animal

SVE1_LS4 Physiologie, physiopathologie, biologie systémique médicale

SVE1_LS7 Epidémiologie, santé publique, recherche clinique, technologies biomédicales

Scientific domains

The CRCNA teams focus on 3 complementary fields, namely immunology, cell death/resistance and nuclear medicine, covered by 3 departments. Importantly, cross-department projects contribute to the development of combined therapies through multi-disciplinary approaches.

The objective of the unit, in connection to IRCNA (Institut Régional du Cancer Nantes Atlantique), the CHU (Nantes and Angers) and the Clinical Oncology Institute (ICO), is to develop basic and translational research as well as clinical oncology.

Unit workforce

Unit workforce	Number on 30/06/2015	Number on 01/01/2017
N1: Permanent professors and similar positions	63	73
N2: Permanent researchers from Institutions and similar positions	42	48
N3: Other permanent staff (technicians and administrative personnel)	71	81
N4: Other professors (Emeritus Professor, on-contract Professor, etc.)	1	
N5: Other researchers from Institutions (Emeritus Research Director, Postdoctoral students, visitors, etc.)	51	
N6: Other contractual staff (technicians and administrative personnel)	43	
N7: PhD students	74	
TOTAL N1 to N7	**347**	
Qualified research supervisors (HDR) or similar positions	72	

Unit record	From 01/01/2010 to 30/06/2015
PhD theses defended	104
Postdoctoral scientists having spent at least 12 months in the unit	51
Number of Research Supervisor Qualifications (HDR) obtained during the period	7

2 • Overall assessment of the unit

Introduction

In 2017, the "Centre de Recherche en Cancérologie Nantes-Angers" (CCRNA) will be renamed "Centre de Cancérologie et d'Immunologie Nantes-Angers" (CCINA) in order to highlight one of the strengths of the institute, i.e. Immunology and immunotherapy.

They have focused their efforts in basic research on (1) the molecular mechanisms by which a subset of γδ lymphocytes detects stressed cells; (2) the identification of a novel human Foxp3-negative regulatory T cell population; (3) the molecular mechanisms underlying immunogenicity of cancer cells treated with alpha radionuclides; (4) the description of a new mechanism of IL-15 signalling; (5) the comparison of the metabolic signature in cancer versus normal stem cells.

Regarding human therapies, the CCRNA has developed an organotypic culture of breast cancer to test the response to treatment (resulting in a clinical protocol and the creation of a start-up company), has identified the mycolactone toxin as the molecular basis of painlessness in Buruli ulcer (opening the way to new anti-pain treatments), has validated an adoptive cell transfer protocol with Melan-A and MELOE-1 sorted T cells, and has validated measles virus for its oncolytic and immunogenic roles in the treatment of mesothelioma (patents with Institut Pasteur and INSERM-CNRS, creation of the start up OncoVITA in 2015).

Since the last evaluation report, a high energy, high intensity Cyclotron has been installed and is operational since 2011.

Global assessment of the unit

The global assessment of the unit is very good for basic, translational and clinical research.

Since 2010, the members of the CRCNA and the new team 18 published more than 884 publications and contributed to more than 50 clinical trials (17 still ongoing), wrote 15 patents, created 5 biotech companies and have been involved in the development of 4 other Biotechs.

They have been involved in 5 international networks, in several Initiatives of Excellence programs, and in the organization of more than 20 scientific meetings, including several international ones.

Most teams obtained industrial contracts, and team members have created 5 start-up companies.

Regarding translational research, this is a strong point with 17 clinical trials or sample collections ongoing.

The teams have successfully trained 78 PhD students during the last term, with most of them having published at least one paper as a first author.

Strengths and opportunities in the context

<u>Strengths</u>

- recognized expertise in onco-immunology, immunotherapy;
- involvement in national and international networks;
- complementary expertise in department and pluridisciplinarity;
- capacity to link basic and clinical research;
- access to well organized technological platforms;
- creation of start-ups and collaborations with companies.

Opportunities

- critical mass and multidisciplinary competences;
- recruitment of new young researchers;
- LabCT (Laboratoire de Biologie Clinique des Tumeurs) cell therapy facilities and the Arronax cyclotron.

Weaknesses and threats in the context

Weaknesses

- few publications in TOP journals (lack of visibility);
- too many ITA on short-term contracts; difficulty to develop new technologies;
- weak participation to European projects.

Threats

- heavy teaching duties for several members of the unit;
- low attractiveness for foreign post-docs;
- limited competence in bioinformatics;
- geographical dispersion;
- drifting away too much from basic research.

Recommendations

The committee recommends:

- ensure strong and insightful leadership;
- improve and reinforce the basic research in the unit, which is directly linked to, and will foster, the translational research;
- pursue the recruitment of new young scientists, and secure laboratory space for the recruited researchers.