HCERES

High Council for the Evaluation of Research and Higher Education

Research units

HCERES report on research unit:

Laboratoire d'Immunologie et Immunothérapie des Cancers

LIIC

Under the supervision of the following institutions and research bodies:

Université de Bourgogne - UB

École Pratiques des Hautes Études - EPHE

Evaluation Campaign 2015-2016 (Group B)

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In the name of HCERES,[1]

Michel Cosnard, president

In the name of the experts committee,[2]

Anne Caignard, chair 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:	Laboratoire d'Immunologie et Immunothérapie des Cancers
Unit acronym:	LIIC
Label requested:	EA
Current number:	EA7269
Name of Director (2015-2016):	Mr Ali BETTAIEB
Name of Project Leader (2017-2021):	Mr Ali BETTAIEB

Expert committee members

Chair: Ms Anne CAIGNARD, INSERM, Hôpital Saint-Louis, Paris

Experts: Ms Agnès BERNET, Centre de Recherche en Cancérologie, Lyon (representative of the CNU)

Mr Henri-Jean GARCHON, INSERM, UFR des Sciences de la Santé Simone Veil, Montigny-le-Bretonneux

Scientific delegate representing the HCERES:

Ms Sophie EZINE

Representatives of supervising institutions and bodies:

Ms Sylvie DEMIGNOT, EPHE

Mr Jean GUZZO, University of Bourgogne

Head of Doctoral School:

Mr Thierry RIGAUD, Doctoral School N°554 « Environnements - Santé »

1 • Introduction

History and geographical location of the unit

The « Laboratoire d'Immunologie et Immunothérapie des Cancers (LIIC) » was a former team of the Inserm unit CJF 94-08 (1994-2001) headed by Mr Eric SOLARY, and then of U517 "Cell Death and Cancer" (2002-2006) followed by UMR-866 "Lipids, Nutrition, Cancer-LNC" (2007-2011), headed by Mr Eric SOLARY followed by Mr Laurent LAGROST. The team was evaluated by AERES in 2011, and has not succeeded to join the UMR-866, directed by Mr Laurent LAGROST, for the period 2012-2016. In 2012, the team has been approved by the Education and Research Ministry as an "Équipe d'accueil" (EA7269) of the University of Bourgogne (UB), and did not apply to join INSERM UMR-866 at mid-term of the mandate.

The team is localized in the Medical School of Dijon (UFR des Sciences de Santé), 7 Bd Jeanne d'Arc, 21079 Dijon. The team shares laboratories and common facilities with three teams of UMR-866 involved in cancer biology.

The team is a monothematic unit presently part of the École Pratique des Hautes Études (EPHE), and remains connected to the UMR-866.

Management team

For the period of 2017-2021, the team will be directed by Mr Ali BETTAIEB, who has been the director since the retirement of the former director Mr Jean-François JEANNIN.

HCERES nomenclature

SVE1 LS4, SVE1 LS6

Scientific domains

The team is involved in cancer biology, precisely in the development of new therapeutic combinations in cancer treatments, with specific interest in Nitric Oxide (NO) donors combined with standard or targeted anti-cancer drugs.

The team demonstrated high level of expertise in the field of nitric oxide (protein S-nitrosylation) in cancer therapy, and is the unique team working in this field in France. The approaches used involved chemistry, pharmacology, cell biology and immunology. The team develops translational research through collaborations with clinicians from the Cancer Centre Georges-François Leclerc (CGFL, Dijon) and the General Hospital of Dijon.

Unit workforce

Unit workforce	Number on 30/06/2015	Number on 01/01/2017
N1: Permanent professors and similar positions	1	1
N2: Permanent researchers from Institutions and similar positions	3	3
N3: Other permanent staff (technicians and administrative personnel)	1	1
N4: Other professors (Emeritus Professor, on-contract Professor, etc.)	1	
N5: Other researchers from Institutions (Emeritus Research Director, Postdoctoral students, visitors, etc.)	1	
N6: Other contractual staff (technicians and administrative personnel)	1	
N7: PhD students	**2**	
TOTAL N1 to N7	**10**	
Qualified research supervisors (HDR) or similar positions	**2**	

Unit record	From 01/01/2010 to 30/06/2015
PhD theses defended	6
Postdoctoral scientists having spent at least 12 months in the unit	4
Number of Research Supervisor Qualifications (HDR) obtained during the period	

2 • Overall assessment of the unit

Introduction

The LIIC team promotes fundamental and clinical research in the field of cancer. The main goals are: 1-to develop more effective combinations of standard or targeted anti-cancer therapies with nitric oxide donors to treat various types of cancers (mammary, colorectal, prostate); 2-to develop new clinical protocols using these combinations through tight connections with the CGFL in Dijon.

The research strategy for the ongoing contract will be to strengthen the collaboration with teams of UMR-866 and with the "Institut de Chimie Moléculaire de l'Université de Bourgogne" (ICMUB). The team will soon also launch collaborations with EPHE SVT teams, according to the instruction of the EPHE and thus of the ministry.

With regard to the last evaluation in 2011, the team has maintained a good scientific production. The dynamism of the members of the team will allow keeping this level of publication and even increase it, making collaborations in the domains in which the team has less expertise such as immunology and animal models in cancer. Such collaborations would improve the funding sources and the international visibility of the team. The collaboration with the physicians needs to be reinforced, by working directly on human samples. Moreover the established

collaborations with pharmaceutical companies on specific programs have to be improved and may be potential funding sources.

As recommended by the previous AERES committee, the program on OM-174 has not been maintained in the 2010-2015 program of the team.

Global assessment of the unit

The team has a high expertise in its field of research and is the only one in France to be largely dedicated to study the role of NO in cancer, an important area in cancer research. The team develops a well-defined and well-designed scientific project. Members perform fundamental and translational researches favoured by collaborations with local clinical department and pharmaceutical companies.

The scientific production of the team has been quite good in these past 5 years.

The team is strongly dedicated to teaching, particularly the EPHE members of the team in the Doctoral school; and an MCU member will take an important responsibility in organizing the Licence cursus of the University.

The funds available, that were satisfactory for the 2012-2014 period, are at the present very scarce.

The international visibility has been slightly increased by the organization of an international congress meeting in 2012 and by two invitations to international meetings. The international collaborations are limited.

Strengths and opportunities in the context

A major strength of the team relies in its strong involvement in translational medicine reflected by the collaboration with the Dijon Cancer Center (CGFL). In this respect, the team has conducted promising studies on the beneficial effects of H89 and GTN in the treatment of experimental cancers. The team has also collaborations with pharmaceutical companies (Roche, DebioPharm, Vifor Pharma in Switzerland) and a biotech (Oncodesign) in Dijon.

The members of the team are strongly dedicated to teaching.

Weaknesses and threats in the context

A first weakness is the composition of the team with no fulltime researcher, all of the members being involved in teaching. The small size of the team and its involvement in teaching may be a handicap for developing a sustained research program. The request for an additional position is therefore fully justified.

In addition, the experimental model used are of limited scope: the beneficial effects of H89 and GTN were reported on the basis of studies conducted on cell lines and tumour cells in culture transplanted into mice. Given the complex effects of NO in cancer, either facilitating tumour growth or protecting the host against it, it is possible that the effects observed in the clinics will not replicate those described in experimental models.

The team lacks research collaborations with foreign labs and has a weak international visibility.

While several grants were obtained for the 2012-2014 period, the funding of the team for the next years may not be guaranteed. The committee noted that applications have recently been submitted.

Recent publications in a high impact journal are lacking.

Recommendations

The committee acknowledges that the project is original and that the team is specialized in its field. However, more international or local collaborations should be established in order to develop additional tumour models, which would strengthen the currently promising findings. Collaborations may also help to apply for additional funding sources.

Increasing the impact factor of the publications may also allow the recruitment of PhD students and post-doctoral fellows through applications to competitive grant programs.

The team should follow the same path, but should be strengthened with new collaborations to help achieving its goals.