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## LNC - Lipides, nutrition, cancer

Rapport Hcéres

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# HCERES

High Council for the Evaluation of Research  
and Higher Education

Research units

## HCERES report on research unit:

Lipids Nutrition Cancer

LNC

Under the supervision of  
the following institutions  
and research bodies:

Université de Bourgogne

Institut National de la Santé et de la Recherche

Médicale- INSERM

AgroSup Dijon – Institut National Supérieur des Sciences

Agronomiques de l'Alimentation et de l'Environnement

Evaluation Campaign 2015-2016 (Group B)

# HCERES

High Council for the Evaluation of Research  
and Higher Education

Research units

*In the name of HCERES,<sup>1</sup>*

Michel Cosnard, president

*In the name of the experts committee,<sup>2</sup>*

Sander Kersten, chairman of the committee

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Under the decree N<sup>o</sup>2014-1365 dated 14 november 2014,

<sup>1</sup> The president of HCERES "countersigns the evaluation reports set up by the experts committees and signed by their chairman." (Article 8, paragraph 5)

<sup>2</sup> 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:** Lipids Nutrition Cancer

**Unit acronym:** LNC

**Label requested:** UMR\_S

**Current number:** UMR\_S866

**Name of Director  
(2015-2016):** Mr Laurent LAGROST

**Name of Project Leader  
(2017-2021):** Mr Laurent LAGROST

## Expert committee members

**Chair:** Mr Sander KERSTEN, Wageningen University, The Netherlands

**Experts:**

- Ms Elizabeth MACINTYRE, University Paris-Descartes
- Ms Anna SAVOIA, Università Degli Studi di Trieste, Italy
- Ms Anne-Marie SCHOTT-PETHELAZ, University of Lyon (representative of the CNU)
- Mr Jean-François TANTI, University of Nice (representative of the INSERM)
- Mr Peter VANDENABEELE, University of Gent, Belgium

**Scientific delegate representing the HCERES:**  
Mr Jean ROSENBAUM

Representatives of supervising institutions and bodies:

Mr Alain BONNIN, University of Bourgogne

Mr Pierre-André MARECHAL, AgroSup Dijon

Ms Meriem MAROUF, INSERM

Head of Doctoral School:

Mr Thierry RIGAUD (Doctoral school n° 554, École Doctorale Environnements Santé)

## 1 • Introduction

### History and geographical location of the unit

The research center UMR866 'Lipids, Nutrition, Cancer-LNC' was founded in 2007 by the merger of several groups within INSERM, the University of Dijon, CNRS and ENSBANA (now AgroSup). The research unit further expanded in 2009 to reach a size of 8 distinct research groups during the 2012-2016 period. A restructuring is proposed for the 2017-2021 period that involves the addition of two complementary research groups (EA4271/CAD and EA4184/CEP) to reach a size of 10 research groups. All three units (UMR866/LNC, EA4271/CAD and EA4184/CEP) are the subject of the current evaluation.

All teams within the LNC research center are located on the University Campus of Dijon spread around several buildings including the Health Faculty and the B3 annex of Health Faculty, the Life Sciences Faculty, the University Hospital (CHU), the Georges-François Leclerc Center (CGFL), and the AgroSup national school of engineers.

### Management team

During the 2012-2016 term, the LNC research center was headed by Mr Laurent Lagrost, supported by Ms Claire Bonithon-Kopp and Ms Carmen Garrido as deputy directors. For the 2017-2021 term, the LNC will continue to be under the leadership of Mr Laurent Lagrost, assisted by deputy directors Ms Carmen Garrido and Mr François Ghiringelli.

### HCERES nomenclature

SVE1\_LS4 Physiologie, physiopathologie, biologie systémique médicale

SVE1\_LS1 Biologie moléculaire et structurale, biochimie

SVE1\_LS7 Epidémiologie, santé publique, recherche clinique, technologies biomédicales

### Scientific domains

Cancer (haematological, colon, breast), immunology, inflammation, lipid metabolism, nutrition, cardiovascular disease, developmental abnormalities

## Unit workforce

Unit workforce	Number on 30/06/2015	Number on 01/01/2017
N1: Permanent professors and similar positions	59	68
N2: Permanent researchers from Institutions and similar positions	14	13
N3: Other permanent staff (technicians and administrative personnel)	36	48
N4: Other professors (Emeritus Professor, on-contract Professor, etc.)	5	
N5: Other researchers from Institutions (Emeritus Research Director, Postdoctoral students, visitors, etc.)	18	
N6: Other contractual staff (technicians and administrative personnel)	51	
N7: PhD students	44	
<b>TOTAL N1 to N7</b>	<b>227</b>	
Qualified research supervisors (HDR) or similar positions	60	

Unit record	From 01/01/2010 to 30/06/2015
PhD theses defended	58
Postdoctoral scientists having spent at least 12 months in the unit	33
Number of Research Supervisor Qualifications (HDR) obtained during the period	6

## 2 • Overall assessment of the unit

### Introduction

The main objective of the research unit is to promote fundamental and clinical research in the research domains of lipids, cancer and cardiometabolic diseases. Major fields of interest include metabolism of (dietary) lipid and lipoproteins and their relation with cardiometabolic diseases and cancer; mechanisms involved in cellular malignancy and the relationship with immunity; cerebro-cardiovascular disease epidemiology and pathophysiology; cancer epidemiology with special interest in mammary, haematological, gynaecological and digestive malignancies; genetics of developmental abnormalities. The experimental approaches pursued within the research unit range from population-based epidemiological studies, to genetic and (pre-)clinical studies in human patients, animal-based experiments, and molecular investigations in cultured cells.

Since the last evaluation five years ago, the overall research strategy of the unit has not changed substantially except for the projected addition of two research units covering an area of research already partly represented within the LNC research center (EA4184), or a highly specialized field of research with very limited overlap with existing teams within the LNC (EA4271).

### Global assessment of the unit

The LNC research center UMR866 aims at performing fundamental and clinical research in the fields of Cancer, Nutrition, Lipid Biology and Cardiometabolic research. It consists of 8 distinct teams, with an additional two teams to be added for the 2017-2021 period. The unit represents a relatively unique combination of expertise and research fields that has proven to be a fertile breeding ground for translational research (linking basic research to clinical research) and cross-disciplinary research (for example, linking immunology to lipoprotein research). A strong and laudable feature of the LNC is the presence of basic scientists and clinicians in (nearly) all teams, creating highly favourable conditions for research from bench to bedside. The committee recognizes a favourable outlook for expansion of the common research activities at the level of translational research (in line with the mission of INSERM), cross-disciplinary research, and joint programs, especially in consideration of the addition of the CAD and DEFFI teams and the projected research activities within the LipSTIC LabEx project. The LNC is able to take advantage of common facilities and activities, although the full potential for sharing of infrastructure may not be realized because of dispersion of the research teams across the campus of the University of Dijon.

The overall output of the unit is impressive, with 1373 articles published in peer-reviewed international journals since 2007. The overall productivity is increasing over time, which is to be expected given the continued expansion of the research staff. The overall number and proportion of articles published in journals with an impact factor above 3 has risen substantially, an impressive feat given that impact factors of most journals are declining. The quality of the research performed with the various research teams is deemed excellent yet the committee notes that there is considerable variation in productivity and quality of research between the research teams, with some teams deserving the label “outstanding”, whereas other teams should be classified as very good.

### Strengths and opportunities in the context

The center is well structured and under the solid leadership of the director and the management team.

Overall quality of research is excellent and has improved since the last evaluation. However, substantial disparities exist between research teams.

The research teams generally have a clear scientific focus supported by well-defined and complementary expertise among the individual members of the team.

Several team leaders are recognized as international leaders in their specific field of study and have extensive local, national and international networks.

Research productivity has improved since the last evaluation.

The performance in translational and cross-disciplinary research is excellent, and there are further opportunities for the 2017-2021 term.

Addition of GAD and DEFFI teams will widen the scope of the LNC, further improve research productivity, and create new opportunities for collaborative research.

There is a platform steering committee that oversees a big portion of the common infrastructure.

The lab has very strong ties to University Hospital and the Georges Francois Leclerc Center.

The installation of a SAB to monitor the research activities of the unit is laudable.

### Weaknesses and threats in the context

The organization of the unit in terms of structuring of certain teams is suboptimal.

The LNC does not have an overarching scientific strategy for the unit as a whole; such strategy exists only for the individual research teams.

The lab has difficulties in attracting international research talents at all levels.

The cohesion among LNC PhD students is limited.

For many teams the ratio of researchers/technicians/engineers to postdocs/PhD students is excessively skewed towards the former group.



A number of teams are limited in size and may thus lack the critical mass to be globally competitive.

International visibility for most teams could be improved.

A number of teams lack full time researchers.

### Recommendations

The unit is encouraged to formulate a general scientific strategy—possibly around an area of common interest—that aims at further stimulating interactions between research teams and may help improve external recognition of the LNC research center.

The organization of the unit in terms of structuring of certain teams should be reconsidered.

A special program/course for PhD students within the LNC should be considered. Attendance of seminars should provide credits.

Using LipSTIC as a model, the LNC should try to engage in additional activities to secure funding for joint projects across units.

A concerted effort should be undertaken to obtain more EU funding, which currently is limited.