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## GRAM - Groupe de recherche sur les antimicrobiens et micro-organismes

Rapport Hcéres

► **To cite this version:**

Rapport d'évaluation d'une entité de recherche. GRAM - Groupe de recherche sur les antimicrobiens et micro-organismes. 2016, Université de Rouen, Université de Caen Normandie - UNICAEN. hceres-02034817

**HAL Id: hceres-02034817**

**<https://hal-hceres.archives-ouvertes.fr/hceres-02034817v1>**

Submitted on 20 Feb 2019

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# HCERES

High Council for the Evaluation of Research  
and Higher Education

Research units

HCERES report on research unit:

Groupe de Recherche sur l'Adaptation Microbienne  
GRAM 2.0

Under the supervision of  
the following institutions  
and research bodies:

Université de Rouen

Université de Caen Basse-Normandie - UCBN

# 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>*

David O'Callaghan, chairman of the  
committee

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Under the decree No.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:** Groupe de Recherche sur l'Adaptation Microbienne

**Unit acronym:** GRAM 2.0

**Label requested:** EA

**Current number:** 2656

**Name of Director  
(2015-2016):** Mr François CARON

**Name of Project Leader  
(2017-2021):** Mr François CARON

## Expert committee members

**Chair:** Mr David O'CALLAGHAN, Université de Montpellier

**Experts:** Mr José ENTENZA, Université de Lausanne, Switzerland

Mr Philippe VAN DE PERRE, Université de Montpellier

**Scientific delegate representing the HCERES:**

Ms Catherine SCHUSTER

**Representatives of supervising institutions and bodies:**

Mr Cafer ÖZKUL, Université de Rouen

Mr Laurent YON, Université de Rouen

**Head of Doctoral School:**

Mr Patrice LEROUGE, Doctoral School n° 497, Normandy's Doctoral School of Integrative Biology, Health and Environment, NBISE.

## 1 • Introduction

### History and geographical location of the unit

The “Groupe de Recherche sur les Antimicrobiens et les Micro-organismes” (GRAM 1.0, EA 2656) was created in 1998 to structure work on infectious diseases at the Medicine and Pharmacy Faculties of the University of Rouen. The group is located in the Rouen Martainville campus, and benefits from both university research laboratories and hospital bacteriology and virology diagnostic laboratories. The group is part of the *Institut de Recherche et d'Innovation Biomédicale de Haute-Normandie* which federates biomedical research in the Region and provides mutualised technological platforms.

In the new project, the Rouen group plans to merge with one of the teams of the unit U2RM (EA4655), a team of clinicians and microbiologists from the University Hospital laboratories in Caen to reinforce the strengths in virology, but it also brings together researchers from the team “Antibiotic-Resistance” (E2) of U2RM and a researcher of a team of Rouen working on respiratory disability (from EA 3613).

### Management team

Since 2011, the laboratory has been directed by Mr François CARON. He will remain as laboratory director with Ms Astrid VABRET and Mr Jean Christophe PLANTIER as deputy directors.

### HCERES nomenclature

SVE1\_LS6 Immunology, microbiology, virology, parasitology.

### Scientific domains

The laboratory works on human infectious diseases, in the fields of bacteriology and virology.

Unit workforce

Unit workforce	Number on 30/06/2015	Number on 01/01/2017
N1: Permanent professors and similar positions	7	13
N2: Permanent researchers from Institutions and similar positions	4	4
N3: Other permanent staff (technicians and administrative personnel)	2	1
N4: Other professors (Emeritus Professor, on-contract Professor, etc.)		
N5: Other researchers from Institutions (Emeritus Research Director, Postdoctoral students, visitors, etc.)		
N6: Other contractual staff (technicians and administrative personnel)		
N7: PhD students	8	
<b>TOTAL N1 to N7</b>	<b>21</b>	
Qualified research supervisors (HDR) or similar positions	4	

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	
Number of Research Supervisor Qualifications (HDR) obtained during the period	1

## 2 • Overall assessment of the unit

### Introduction

The unit works on several aspects of clinical microbiology. In the field of bacteriology, unit members are investigating the dynamics of the bacterial cell wall (*Clostridium difficile* and *Staphylococcus lugdunensis*), antibiotic resistance and urinary tract infections. They have been also strongly involved in the control of a local epidemic of meningococcal meningitis. The virologists in the group work on the genetic diversity of HIV and its impact on diagnosis accuracy and anti-retroviral therapy. The laboratory is a “Laboratoire Associé” of the French national reference centre (CNR-LA) for HIV and is a collaborating laboratory for the “CNR Anaérobies” providing expertise on *C. difficile*.

The team members and research interests of the unit have been stable since the last evaluation in 2011. The committee noted that the unit has reinforced the virology aspects of the projects, as suggested in the last evaluation report. In the new project, the Rouen group plans to merge with one of the team 3 of the unit U2RM (EA4655),

reinforce the strengths in virology, but it also aggregates researchers from the team « Antibiotic-Resistance » (E2) of U2RM and a researcher of a team of Rouen working on respiratory disability (from EA 3613).

### Global assessment of the unit

The performance of GRAM 1.0 is very good. Despite the modest size of the group and the important workloads of clinical duties and teaching, the group is very productive. Over the last 5 years, GRAM 1.0 has published 118 original articles in peer-reviewed journals with a high impact; the unit also shares with the University of Paris Descartes a patent describing a method for the detection and quantification of HIV-2. The unit has demonstrated its ability to obtain funding from public sources and from industry. The national and international visibility of the laboratory is good; unit members have several collaborations with groups in France, Europe, Africa and the USA, including providing rare HIV isolates to FDA and NIH (USA). The director and co-director of the laboratory have participated in the organization of several international conferences (including RICAI and IRIB), and are advisors of national health and regulatory agencies (ANRS, ANSM). The laboratory is very attractive to young scientists, although it still has difficulties in attracting post-doctoral fellows.

The planned merger with research teams in Caen is a great opportunity to further increase the laboratory potential. It represents, however, a new challenge since the groups must learn to work together, despite the geographic distance.

### Strengths and opportunities in the context

- the lab is very productive, with a good publication record (numbers as well as impact);
- the lab has original research projects;
- the lab has good interactions with the *Centre Hospitalier Universitaire* and various *Centre National de Référence* (CNR); the lab has access to patients, clinical samples and isolates;
- the unit has a strong local, national and international network of collaborations and national and international recognition;
- lab members have a strong implication in teaching, providing visibility and ability to attract students; there is a high level of professional insertion of PhD students after graduation;
- the planned merger with teams of unit U2RM will increase the critical mass of the unit and the synergy in virology will increase the international competitiveness of the lab;
- the unit benefits from the strong financial support from the region, for research and infrastructures.

### Weaknesses and threats in the context

- the team is built on university hospital clinicians who have a considerable teaching load and numerous responsibilities at the hospital. There are no permanent full-time scientists or full-time post-docs. The laboratory has small technical staff, with only one “adjoint technique” who has a considerable teaching load (practical courses in microbiology) and, as the laboratory has no secretarial staff, administrative duties;
- the committee noted a lack of clear scientific focus for such a small group: there are too many research themes;
- while the merger with researchers from U2RM (EA4655) of Caen will increase the potential of the unit, it is a double-edged sword; there must be a clear planning of how such geographically distant groups will work together as a single unit. It also increases the diversity of research themes.

### Recommendations

The unit has been very successful so far.

- the unit should define its ambitions for the middle term future (from 2022); do they wish to stay as an EA, or are they tempted to apply for an INSERM label? This will be of importance for the scientific strategy and scientific direction and for the recruitment of scientists;

- the recruitment of a permanent scientist (open position or mobility) would help to reinforce the experimental work of the group;
- obtaining funding for the recruitment of post-docs seems essential, with a recommendation to increase the international diversity in the laboratory;
- the lab should continue to recruit master and PhD students. This is essential for the continuity of the group;
- the lab should continue its interactions with industrial partners but encourage team leaders to apply for national, European and international institutions academic research grants;
- the lab should ensure a good scientific and administrative communication between the Rouen and Caen groups;
- the lab should continue, and reinforce, internal scientific communication in English, essential for the international competitiveness.