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RPC - Retrovirus et pathologie comparée

Rapport Hcéres

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HCERES

High Council for the Evaluation of Research
and Higher Education

Research units

HCERES report on research unit:

Rétrovirus et Pathologie Comparée

RPC

Under the supervision of
the following institutions
and research bodies:

Université Claude Bernard Lyon 1 - UCB

École Pratique des Hautes Études - EPHE

Institut National de la Recherche Agronomique - INRA

HCERES

High Council for the Evaluation of Research
and Higher Education

Research units

In the name of HCERES,¹

Didier HOUSSIN, president

In the name of the experts committee,²

Étienne THIRY, chairman of the committee

Under the decree N^o2014-1365 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 result of the evaluation by the experts committee, the composition of which is specified below. The assessments contained herein are the expression of an independent and collegial deliberation of the committee.

Unit name:	Rétrovirus et Pathologie Comparée
Unit acronym:	RPC
Label requested:	UMR
Present no.:	0754
Name of Director (2014-2015):	Mr Jean-François MORNEX
Name of Project Leader (2016-2020):	Mr Christophe TERZIAN

Expert committee members

Chair: Mr Étienne THIRY, University of Liège, Belgium

Experts: Mr Olivier SANCHEZ, Université Paris Descartes (representative of the CNU)
Ms Anne-Nathalie VOLKOFF, INRA, Montpellier

Scientific delegate representing the HCERES:

Ms Sophie EZINE

Representatives of the unit's supervising institutions and bodies:

Ms Sylvie DEMIGNOT, EPHE

Mr Germain GILLET, University Claude Bernard Lyon 1

Mr Thierry PINEAU, INRA

Ms Sylvie REVERCHON (director of the Doctoral School N° 341 - E2M2
" Évolution Écosystèmes Microbiologie Modélisation ")

1 • Introduction

This unit proposes a complete reorganisation for the next contract and will be renamed “Viral infections and comparative pathology”. From three teams, the unit will be remodeled in one team concerned by four scientific projects. Therefore this report will take this essential modification into account and the assessment will be made on four teams: the three first teams (Teams 1-3) refer to the current unit for the past contract; the fourth (Team 4) assessed team represents the new organisation of the unit in one single team.

History and geographical location of the unit

The UMR 754 “Retrovirus and Comparative Pathology” is located on the Gerland Campus of the University Claude Bernard Lyon 1 (UCBL1). The unit has been created in 2003; it has been renewed in 2007 then in 2011. The unit belongs to the UCBL1 and the Institut National de la Recherche Agronomique (INRA, Animal Health Division). The unit is associated to the École Pratique des Hautes Études (EPHE), VetAgroSup and Hospices Civils de Lyon (HCL).

Management team

Director: Mr Jean-François MORNEX

Deputy Director: Mr Christophe TERZIAN

Project Leader: Mr Christophe TERZIAN

Pr Jean-François MORNEX is the director of the unit since its creation and Pr Christophe TERZIAN the deputy director since January 2013 and is going to take the lead of the unit for the next contract.

HCERES nomenclature

SVE1-LS3, SVE1-LS6 and SVE1-LS7

Unit workforce

Unit workforce	Number as at 30/06/2014	Number as at 01/01/2016
N1: Permanent professors and similar positions	6 (4)	5 (2.8)
N2: Permanent researchers from Institutions and similar positions	5 (4.8)	6 (5.8)
N3: Other permanent staff (without research duties)	13 (11.8)	12 (10.8)
N4: Other professors (Emeritus Professor, on-contract Professor, etc.)	2 (1.5)	
N5: Other researchers (Emeritus Research Director, Postdoctoral students, visitors, etc.)		
N6: Other contractual staff (without research duties)	1 (1)	
TOTAL N1 to N6	27 (23,1)	23 (19,4)

Unit workforce	Number as at 30/06/2014	Number as at 01/01/2016
Doctoral students	7	
defended Theses	10	
Postdoctoral students having spent at least 12 months in the unit		
Number of Research Supervisor Qualifications (HDR) taken	3	
Qualified research supervisors (with an HDR) or similar positions	13	11

2 • Overall assessment of the unit

Global assessment of the unit

The UMR *Retrovirus and Comparative Pathology* (RPC) is a medium-sized unit of 22 permanent staff, organized in 3 research teams during the evaluation period. The unit focuses on pathogens and host-pathogen interactions and includes the “One health” concept in its strategy. Historically, the unit is dedicated to retrovirology, and has a recognized expertise in the field of animal retroviruses JSRV (Jaagsiekte sheep retrovirus) and EIAV (Equine infectious anemia virus). Globally, the unit is recognized in the field of pulmonary tumor diseases in animals and humans. Since its creation in 2003, the missions of the unit have evolved from pathogenesis of animal retrovirus infections (in sheep and horses) to basic and applied research on retroviruses, on arboviruses (namely bluetongue virus) and vectorology based on adenoviruses. A number of striking results have been obtained in the different topics addressed. For instance, the unit demonstrated that *Wolbachia* infection of flies reduces the vertical transmission of the endogenous retrovirus Gypsy, or evidenced the presence of ovine bronchioloalveolar progenitors, thus providing new tools to study lung regeneration. In parallel, diagnostic tools have been developed and proofs of concept have been provided regarding the use of viral vectors or other therapeutic tools (leading to 4 patents). The unit is well involved in teaching and training by research. In addition, the unit is strongly integrated in the SFR BioScience Gerland Lyon 1. The overall assessment of the unit is excellent.

Strengths and opportunities in relation to the context

An effort is being made to reorganize the unit and to make it attractive when facing the current scientific challenges (grant applications, biotechnologies, international competition).

The unit has technical skills regarding 3D cell culture, what allows analyses on the cell response to viral infections. The unit has developed a Bio-safety level 3 (BSL3) insect facility allowing research on arboviruses.

The unit has a strategic position with an animal health specialty in Rhône-Alpes. The unit demonstrates a good insertion in Lyon university life (strong involvement in teaching, medical care, SFR functioning and management, opportunity with the *Institut de Recherches Technologiques* (IRT) Bioaster.

The doctorate students are happy to work in the unit because of a good follow-up of their work by the tutors, of their involvement in the writing of scientific articles and an enough granting of their research.

The unit is well supported by its management bodies: the project is on line with the strategy of INRA, close to Anses (*Agence nationale de sécurité sanitaire de l'alimentation, de l'environnement et du travail*) and complementary to Lyon “International Research Center for Infectious Diseases” (CIRI, established in 2013, has over 20 multidisciplinary teams addressing the control of infectious diseases) in terms of animal health; the “animal health” component is of utmost importance for the university UCBL; for EPHE, the unit, despite a modest size, is an important partner in Lyon and its only location for the subject virology-infectiology.

Weaknesses and threats related to the context

A rather diversified number of research topics considering the size of the unit.

Moderate funding in respect to the four research projects proposed in the new contract.

An insufficient level of collaboration with VetAgroSup is noticed, despite the “animal health” and the “One health” dimension of the unit.

The scientific animation is not developed enough and there is a need for enhanced exchanges within the unit.

Recommendations

The “One health” dimension of the unit must and will be continued and should be strengthened. The retrovirus research remains the foundations of the unit and should be maintained; the interplay between animal and human health should be reinforced (i.e. the increased incidence of lepidic tumours in lung cancer patients in contact with goats) together with the collaboration between scientists and clinicians.

Taking into account the size of the unit and the level of granting, it is recommended to lower the diversity of the scientific subjects and the unit should prioritize the subjects. The effort of remodelling the unit should be pointed out as a proof of its dynamism although the number of topics proposed in the new contract is still high.

Concerning the scientific life, the scientific animation (journal club, team meeting,...), the attraction of foreign doctoral students and post-docs should be improved.