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## MFP - Microbiologie fondamentale et pathogénicité

Rapport Hcéres

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# HCERES

High Council for the Evaluation of Research  
and Higher Education

Research units

HCERES report on research unit:

Fondamental Microbiology and Pathogenicity

MFP

Under the supervision of  
the following institutions  
and research bodies:

University de Bordeaux

Centre National de la Recherche Scientifique – CNRS

# HCERES

High Council for the Evaluation of Research  
and Higher Education

Research units

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

Didier HOUSSIN, president

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

Alessandro MARCELLO, chairman of the  
committee

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Under the decree N.º 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 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:	Fondamental Microbiology and Pathogenicity
Unit acronym:	MFP
Label requested:	UMR CNRS-Université
Present no.:	5234
Name of Director (2014-2015):	Mr Michael KANN
Name of Project Leader (2016-2020):	Mr Michael KANN

## Expert committee members

Chair:	Mr Alessandro MARCELLO, International Centre for Genetic Engineering and Biotechnology (ICGEB), Trieste, Italy
Experts:	Mr Frédéric DALLE, Laboratoire de Parasitologie Mycologie, Université de Dijon
	Ms Shaynoor DRAMSI, Institut Pasteur Paris (representative of the CoCNRS)
	Ms Isabelle FLORENT, MCAM CNRS, Muséum National d'Histoire Naturelle, Paris
	Mr Philippe RIONGEARD, Faculté de Médecine, Université de Tours

Scientific delegate representing the HCERES:

Ms Catherine SCHUSTER

Representatives of the unit's supervising institutions and bodies:

Mr Pierre DOS SANTOS, Université de Bordeaux

Mr Franck LAFONT, CNRS

Mr Yannick LUNG, Université de Bordeaux

Mr Roger MARTHAN (director of the Doctoral School N° 154)

## 1 • Introduction

### History and geographical location of the unit

The MFP laboratory (Microbiologie Fondamentale et Pathogénicité) was founded in 2011 under the direction of Pr Michael KANN. MFP is a research Unit depending on the Université de Bordeaux and the CNRS. Based on the fusion of the ancestor UMR 5234 « Microbiologie Cellulaire et Moléculaire et Pathogénicité » interested in parasitology, mycology and virology, directed by Pr Théo BALTZ and the ancestor EA 2968 « Variabilité Génomique des Virus » of medical virology directed by Pr Hervé Fleury. The resulting unit is under the authority of the « Département des Sciences de la Vie et de la Santé » for the University and of the “section 27” of the “Institut National des Sciences Biologiques” for the CNRS. The unit is located at the Campus Carreire of the University Bordeaux Segualen. The unit’s laboratories are dispersed in three different floors and/or buildings next to the University Hospital Pellegrin.

MFP is composed of five teams (T1 to T5). Research focuses on the study of molecular mechanisms of host-pathogen interactions. Five viruses (HIV, hepatitis C virus (HCV), hepatitis B virus (HBV), adenoviruses (Ad), parvoviruses (PV)), mobile elements of bacteria, *Trypanosoma* species (*T. brucei*, *T. congolense* and *T. vivax*) and *Candida* species are studied. *Trypanosoma* research of the unit will undergo some changes: whereas T3 (African trypanosome virulence factors and pathogenicity, head T. Baltz) will definitively stop its activities within the next six months, a new team (Intermediate Metabolism of Trypanosomes (iMET) head F. Bringaud) specialized in parasite’s metabolomic will join the unit for the next contract. The head of this team is a co-founder of the LabEx Parafrap.

MFP founded this year a so-called “Laboratoire international associé” (LIA) with the Immunology Unit of Bordeaux and the Heinrich-Pette Institute, Hamburg, Germany (HPI).

MFP manages the only BSL3 laboratory of the University of Bordeaux and the only facility for live cell imaging in a BSL2 containment. The unit has developed long-lasting collaborations with the Bordeaux Imaging Center (BIC) and the Bordeaux-based ISPED (Institut de Santé Publique, d’Épidémiologie et de Développement) and is member of the TransBioMed research federation.

### Management team

Head: Mr Michael KANN.

Deputy head for the next contract: Mr Frédéric BRINGAUD.

### HCERES nomenclature

SVE1\_LS1 Biologie moléculaire et structurale, biochimie

SVE1\_LS6 Immunologie, microbiologie, virologie, parasitologie

Unit workforce

Unit workforce	Number as at 30/06/2014	Number as at 01/01/2016
<b>N1:</b> Permanent professors and similar positions	18	16
<b>N2:</b> Permanent researchers from Institutions and similar positions	9	8
<b>N3:</b> Other permanent staff (without research duties)	21	22
<b>N4:</b> Other professors (Emeritus Professor, on-contract Professor, etc.)	1	
<b>N5:</b> Other researchers (Emeritus Research Director, Postdoctoral students, visitors, etc.)	6	4
<b>N6:</b> Other contractual staff (without research duties)	2	
<b>TOTAL N1 to N6</b>	<b>57</b>	<b>50</b>

Unit workforce	Number as at 30/06/2014	Number as at 01/01/2016
Doctoral students	9	
Theses defended	29	
Postdoctoral students having spent at least 12 months in the unit	6	
Number of Research Supervisor Qualifications (HDR) taken	1	
Qualified research supervisors (with an HDR) or similar positions	16	16

## 2 • Overall assessment of the unit

### Global assessment of the unit

The MFP laboratory is a research unit that derived from the fusion of previous units on distantly related fields. The MFP is focusing its efforts towards three major axis of research: Virology, Parasitology and Microbiology. Excellent research teams are operating with an international stand and strong productivity together with teams that have yet to fully develop their potential. A strategy to homogenize the research efforts focussing on specific topics is in place. Teams that are being terminated due to retirement of the team leader within next contract are being substituted by a new team of high quality. The unit has shown a proven capacity to attract funding for research from various sources. A good interaction with translational partners is present and needs to be reinforced. In summary, the unit is at a critical stage of its renovation from a group of laboratories with a diverse set of expertises to a unified group with a clear common strategy. This effort should be endorsed because of the quality of the research being undertaken.

### Strengths and opportunities in relation to the context

Excellent research teams and an important critical mass in virology and parasitology.

Originality of research programs and quality of scientific output.

Good interaction with the local scientific environment.

National and international recognition.

Good relationship with translational partners and opportunity to develop industrial partnerships.

Good capacity to attract funding.

### Weaknesses and threats related to the context

The unit still suffers from a non-homogeneous organization, which may impact on its recognition as a compact group with defined objectives. Common strategic plans in critical areas such as teaching through research of postgraduate students and translation of research to the patient are required. Management of the turnover of personnel is critical to shape the Unit in the future.

### Recommendations

Continue in the program of unifying the teams, possibly in the same building.

Develop strategic plans for research by selecting the topics and recruiting leaders in the field.

Become attractive for young investigators with new ideas in the areas of interest.

Increase visibility of the Unit as a whole for a better quality of international recruitment and recognition.

Increase internal seminars and collaborations between teams.

Implement output quality in terms of publication in international journals across all the teams.

Invest in selected new ideas/projects 'high risk, high gain'.

Establish a common strategy for 'bench to bedside' transfer.