Unité d'immunophysiologie et parasitisme intracellulaire

Rapport Hcéres

agence d'évaluation de la recherche
et de l'enseignement supérieur

Section des Unités de recherche

AERES report on the research unit

Unit of Immunophysiology and Intracellular Parasitism

From the

Pasteur Institute

May 2010

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Unit of Immunophysiology and Intracellular Parasitism

From the

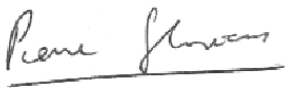
Pasteur Institute

Le Président
de l'AERES

Jean-François Dhainaut

Section des unités
de recherche

Le Directeur



Pierre Glorieux

May 2010

Research Unit

Name of the research unit : Immunophysiology and Intracellular Parasitism

Requested label : Pasteur Unit

N° in the case of renewal

Name of the director : Ms. Genevieve MILON

Members of the review committee

Committee chairperson

Ms. Deborah SMITH, University of York, UK

Other committee members

M. David ROOS, University of Pennsylvania, Philadelphia, USA

M. Graham BROWN, University of Melbourne, Parkville, Australia

Ms. Alistair CRAIG, Liverpool School of Tropical Medicine, UK

M. Mike FERGUSON, University of Dundee, UK

M. Neil GOW, University of Aberdeen, UK

M. José RIBEIRO, NIH, Bethesda, USA

M. Mats. WAHLGREN, Karolinska Institutet, Stockholm, Sweden

M. Michel NUSSENZWEIG, The Rockefeller University, NY, USA

M. David SIBLEY, Washington University, St. Louis, USA

M. Jérome ESTAQUIER, IMRB, Paris, France

Observers

AERES scientific advisor

M. Nicolas GLAICHENHAUS

University, School and Research Organization representatives

M. Alain ISRAEL, Pasteur Institute

Report

1 • Introduction

- Date and execution of the visit :

This unit was evaluated as part of the Department of Parasitology and Mycology on October 5, 2009.

- History and geographical localization of the research unit, and brief presentation of its field and scientific activities

This unit belongs to the Department of Parasitology and Mycology.

- Management team

The team leader is Ms. Genevieve Milon.

- Staff members (on the basis of the application file submitted to the AERES)

	Past	Future
N1: Number of researchers with teaching duties (Form 2.1 of the application file)	0	0
N2: Number of full time researchers from research organizations (Form 2.3 of the application file)	3	4
N3: Number of other researchers including postdoctoral fellows (Form 2.2 and 2.4 of the application file)	1	1
N4: Number of engineers, technicians and administrative staff with a tenured position (Form 2.5 of the application file)	3	3
N5: Number of engineers, technicians and administrative staff without a tenured position (Form 2.6 of the application file)	0	0
N6: Number of Ph.D. students (Form 2.7 of the application file)	1	1
N7: Number of staff members with a HDR or a similar grade	3	4

Three of the 4 permanent staff – though not university members – have mentioned that they were / are contributing, each year, as teachers within the frame of national and international Universities and / or of "Grandes Ecoles" such as ENS Cachan.

2 • Overall appreciation on the research unit

- Strengths and opportunities

Internationally-respected leader in parasitology research, providing great breadth of insight and understanding across experimental systems and approaches.

Indispensible catalyst in mentoring junior scientists and fostering productive interactions between groups, both at Institut Pasteur and internationally.

Use of available platforms to develop imaging and transcriptional approaches for studying early Leishmania infection.

Developed robust standard procedures for drug screening in use by the LeishDrug consortium, Institut Pasteur Korea, etc.

- Weaknesses and threats

Lack of access to sandflies, which is critical for international competitiveness in the study of early immune responses to Leishmania infection.

Productivity is low for CR1 staff, although it is recognized that the development of imaging models has required considerable effort.

Affiliated program on murine models of autoimmune disease seems an awkward fit, and has not been particularly productive.

No clear long-term vision was expressed in the documents provided for review.

- Recommendations to the head of the research unit

Develop access to sandflies, presumably via collaboration; if impossible, terminate program on early responses in favor of later infection models.

Ensure translation of tools and SoPs to the LeishDrug program.

It is not possible to recommend re-creation of this unit on the basis of recent progress and the written documents provided. Reconfiguration / redeployment of current staff might benefit all concerned.

- Production results

A1: Number of lab members among permanent researchers with teaching duties who are active in research (recorded in N1 and N2)	0 / 0
A2: Number of lab members among permanent researchers without teaching duties who are active in research (recorded in N3, N4 and N5)	4 / 4
A3: Ratio of members who are active in research among staff members [A1/(N1+N2)]	4 / 4
A4: Number of HDR granted during the past 4 years	2
A5: Number of PhD granted during the past 4 years	
A6: Number of first or last author publications during the past 4 years	7

Three of the 4 permanent staff – though not university members – have mentioned that they were / are contributing, each year, as teachers within the frame of national and international Universities and / or of "Grandes Ecoles" such as ENS Cachan.

3 • Specific comments

- Appreciation on the results

Original first and/or last authors publications during the past 5 years include Nature Product Research 2006, Plos Neglected Diseases, 2007 ; Cellular Microbiology, 2005a, 2005b, Immunol. Cell Biol. 2005 ; Microbes and Infection, 2007 ; Journal of Bioinformatics and Computational Biology, 2008 ; BMC genomics. 2009 ;

Original publications as co-authors who actively contributed to the conceptual and methodological inputs and to their translation as manuscripts : Journal Ethnopharmacology, 2005, Mol Cell Biol 2005, Blood 2006a 2006b, J.immunol 2006, Microbes and Infection 2006, Cellular Microbiology 2007, PloS Medecine 2007, PloS Pathogens 2007, PNAS 2007, Cellular Microbiology 2008, Blood 2008.

The team members also published reviews in Clinical Immunology, 2005 ; Ann. NY Acad. Sci., 2005 ; Imm. Rev. 2007 ; Microbes Infec., 2008 ; Vet. Res. 2009 ; and Trends in Parasitology 2009, Current Opinion in Haematology 2009.

Note de l'unité	Qualité scientifique et production	Rayonnement et attractivité, intégration dans l'environnement	Stratégie, gouvernance et vie du laboratoire	Appréciation du projet
non noté	A	A	A	non noté

Institut Pasteur

Paris, le 28 avril 2010

Immunophysiologie et Parasitisme Intracellulaire

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Objet/Réf:
EVAL-07553660-S21100448166-UR-RPRELIM
Overall appreciation on the research unit

Let the present « leader » re-express her thanks to the Committee Members and the Chairperson who coordinated the evaluation process.
Please, could the modifications- **in green bold characters-** be taken into consideration? It will be deeply appreciated.

- Strengths and opportunities

Internationally-respected leader in parasitology research, providing great breadth of insight and understanding across experimental systems and approaches.

Indispensible catalyst in mentoring junior scientists and fostering productive interactions between groups, both at Institut Pasteur and internationally.

Use of available platforms to develop imaging and transcriptional approaches for *studying early Leishmania infection*. Please could it be possible to point out what was highlighted in the report : for identifying and characterizing ,in parallel, the parasite- and tissue-protective processes that account for the Leishmania perpetuation.

Relying on in depth knowledge of features of population of mouse primary macrophages hosting cell-cycling amastigotes, robust standard procedures have been designed for "drug screening", the latter being expected to benefit to a LeishDrug partner, namely Institut Pasteur Korea within the Leishdrug Consortium

- Weaknesses and threats

To properly decipher how the limited number of metacyclic promastigotes delivered in the skin contribute to the remodelling of this complex cutaneous site as a parasite protective niche and though the leader promoted the estasblishment of sand fly colonies in IP, those are not yet available, preventing the team to be competitive.

Productivity is low for CR1 staff, although it is recognized that the development of imaging models has required considerable effort. **Thanks for acknowledging these sustained and renewed efforts rooted to scientifically demanding hypothesis-driven approaches**

Affiliated program on murine models of autoimmune disease seems an awkward fit, and has not been particularly productive. **Please let the leader apologize for the lack of crucial information : the CR1 was welcome in the team in March 2009 one objective being to disrupt her solitary path and to thus facilitate the submission for publication of the elegant analysis this CR1 completed ; the content of the publication is now available to readers who appraise and will appraise it.**

"No clear long-term vision was expressed in the documents provided for review". **The leader is concerned by this sentence: it could reflect**

- the leader' misunderstanding of what means short document - in which case please let the leader apologize-

-that there is no recognized scientific space for the conceptual frame promoted by the leade.The leader does consider that the exploration of the mechanisms accounting for the perpetuation of parasites such as *Leishmania*, *Trypanosoma*, *Plasmodium* needs to be deciphered as such.The approaches the leader designed/co-designed, over the years, are so with the aims to identifying and characterizing the dynamic sustained and reciprocal cross talk the parasites establish with the organisms they divert as hosts, one key outcome being the production of the parasite progeny which is transmissible from one host to the next host. This latter parasite developmental program is most often uncoupled from any host tissue damage.

Geneviève Milon

ALAIN ISRAËL
DIRECTEUR DE L'EVALUATION SCIENTIFIQUE
INSTITUT PASTEUR