Ecosystème microbien digestif et santé

Rapport Hcéres

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

Section des Unités de recherche

Evaluation report

Research unit

Ecosystème Microbien Digestif et Santé

University Paris 11

November 2008

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

Section des Unités de recherche

Evaluation report

Research unit

Ecosystème Microbien Digestif et Santé

University Paris 11

Le Président
de l'AERES

Jean-François Dhainaut

Section des unités
de recherche

Le Directeur

Pierre Glorieux

November 2008

Evaluation report

The research unit:

Name of the research unit: Ecosystème Microbien Digestif et Santé

Requested label: EA

N° in case of renewal: 4043

Head of the research unit: Ms. Anne Collignon

University or school:

University Paris 11

Other institutions and research organization:

INRA

Date of the visit:

November 13th 2008

Members of the visiting committee

Chairman of the committee:

M. Michel Arthur, Centre de Recherche des Cordeliers, Paris

Other committee members:

M. Michel Popoff, Institut Pasteur, Paris

Ms. Paola Mastrantonio, Instituto Superiore di Sanità, Roma, Italy

M. Michael Blaut, German Institute of Nutrition, Nuthetal, Germany

Ms. Arlette Darfeuille-Michaud, Centre Biomédical de Recherche et de Valorisation, Clermont-Ferrand

M. Ian Poxton, Microbial Pathogenicity Research Laboratory, Edinburgh, UK

Representative:

Ms. Chantal Finance, Nancy, CNU 87 representative

Observers

AERES scientific representative:

M. Stéphane Méresse, CIML, Marseille

University or school representative:

M. Marc Pallardy, University Paris 11

Research organization representative:

M. Jean Fioramonti, Toulouse, INRA representative

Evaluation report

1 • Short presentation of the research unit

— Numbers of lab members including researchers with teaching duties, full time researchers, engineers, PhD, students, technicians and administrative assistants : 17
— Numbers of HDR : 5
— Numbers of PhD students who have obtained their PhD during the past 4 years: 3
Numbers of PhD students currently present in the research unit: 4 all with fellowships.
— Numbers of lab members who have been granted a PEDR : 1
— Numbers of "publishing" lab members among researchers with a tenure position: 9

2 • Preparation and execution of the visit

The visit had been carefully prepared and members of the committee appreciated the scientific quality of the oral presentations. During the visit, the international members were given the information essential to the understanding of the life of the unit. The relative contributions of the director, co-director, and of the other members of the team to the oral presentation and to the answers to the questions of the committee were carefully and appropriately planned.

3 • Overall appreciation of the activity of the research unit, of its links with local, national and international partners

The team is an internationally well recognized research group in the study of Clostridium difficile infection. The research projects concern a medically important field, rapidly evolving from an epidemiology standpoint. The number of research units developing project in this area is limited world wide and the colonization aspect is original. The general concept of the research group is conclusive and the topic studied is of both scientific and medical importance. The planned future research is a logical step forward from previous findings. The experimental approaches are state of the art, but not highly innovative or at high risk. The chances that the projects will be realized are quite high. The group has several cooperations with both national and international partners which may help to improve visibility at the international level. In general, the group is competitive and the quality of the external funding is excellent.

4 • Appreciation of resources and of the life of the research unit

Considering its size and composition, the team has been dynamic and successful in obtaining grants from highly competitive agencies such as ANR (one contract, coordinator) and the 6th PCRD (two contracts, including one

as a coordinator). The interest of its activities has also been recognized by INRA. The university has proven to be supportive for the team as shown by the appointment of assistant professors (MCUs) in recent years. The representative of the university stated that the team is well integrated into the scientific policy of the department and that continued support is anticipated in the next 4-year contract and beyond. In spite of this excellent situation, the overall resources of the unit appear low and the team should consider increasing the requested support in future projects.

Members of the committee were unanimous in recognizing the enthusiasm of the researchers and the ease of the interactions within the team. One younger investigator has successfully developed his research project as a PI and obtained an HDR. This person is clearly a potential team leader for the following contract.

5 • Recommendations and advice

— Strong points:

EA 4143 is an excellent "Equipe Universitaire" that has been highly successful in recruiting young assistant professors and obtaining external grants. The project of the team is original since (i) it concerns a somewhat neglected pathogen of increasing medical importance (C. difficile), (ii) it involves the analysis of colonization factors rather than the more popular toxins, and (iii) it is based on the use of gnotoxenic animals, a historical speciality of the team. There is an excellent match between the teaching and research training opportunities offered by the team. One of the strongpoints of the group is a good mixture of scientists from different generations.

— Weak points:

The members of the team have succeeded in publishing their results in the best journals of the specialties, including medical (Antimicrobial Agents and Chemotherapy, Journal of Clinical Microbiology, Journal of Medical Microbiology, Vaccine) and non-medical (Journal of Bacteriology) journals. One member of the visiting committee also underscored that the citation of the publications is high. However, the production is sub-optimal with respect to the number of publications per investigator and the absence of publications in high impact journals.

In their research activities, members of the team are not making the best use for their implication as clinical microbiologists and infectious disease professionals at the hospital.

The project concerning the analysis of the mobility of transposons has not been translated in the development of a leader position of the team in the field of recombinant DNA technologies applied to the Clostridia.

— Recommendations:

During the following four-year contract, the team should succeed in translating its potential into a leader position at the international level in the molecular analysis of C. difficile infection, while preserving its know-how on gnotoxenic animal models. This should be achievable by increasing the interactions between members of the team. The research axis concerning the transposons should for example lead to the development of genetic tools/approaches useful to the entire team. Increased co-operation between members of the team should lead to the selection of a limited number of carefully defined aims with a high potential impact. By improving its capacity to focus on specific aims, the team should also improve the quality of its publications, a factor that will certainly be essential in the competitive renewal of the contract in four years time. The team should pursue its effort in recruiting scientists and perhaps focus on a young investigator trained in basic biochemistry, as the fields of Genetics, Ecology, and Infectious Diseases are covered by the current PIs.

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

UNIVERSITÉ
PARIS-SUD 11

Le Président de l'Université Paris-Sud 11

à

Monsieur Pierre GLORIEUX
Directeur de la section des unités de recherche
AERES
20, rue Vivienne
75002 Paris

Orsay, le 11 mars 2009.

N/Réf. : 57/09/GCo/LM/LS

Objet : Rapport d'évaluation d'unité de recherche
N° S2100012385

Monsieur le Directeur,

Vous m'avez transmis le vingt trois février dernier, le rapport d'évaluation de l'unité de recherche « Ecosystème Microbien Digestif et Santé » - EMDS – EA 4043, et je vous en remercie.

L'université se réjouit de l'appréciation portée par le Comité sur cette unité et prend bonne note de ses suggestions.

Vous trouverez en annexe les éléments de réponse de Madame Anne COLLIGNON, Directeur de l'unité de recherche.

Je vous prie d'agréer, Monsieur le Directeur, l'expression de ma sincère considération.

Guy COURRAZE
Président

PJ : Commentaires de Mme COLLIGNON

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UNIVERSITE DE PARIS-SUD 11
FACULTE DE PHARMACIE

EA 4043 Ecosystème Microbien Digestif et Santé

Unité Sous Contrat INRA

Directeur Anne COLLIGNON

Lundi 2 mars 2009

Version française

Objet : Réponse au rapport du comité d'experts de l'AERES

Toute l'équipe remercie le comité d'experts pour son travail lors de la visite du 13 novembre 2008 et pour les remarques constructives qui ont été formulées dans le rapport d'évaluation.
Vous trouverez ci-dessous des précisions et commentaires concernant certains points du rapport.

Présentation de l'unité

L'EA comprend 9 enseignants-chercheurs dont 5 HDR (2 PR, 7 MCF) tous publiant et 4 IATOS (2 techniciens, 1 agent technique, 1 agent administratif).
Le nombre de thèses d'université soutenues durant les 4 années précédentes est de 4 et non de 3 : Séverine Péchiné (2005), Jean-Winoc Decousser (2006), Sacha Lebel (2006), Aline Launay (2007). Depuis, Cécile Denève a obtenu sa thèse d'université en décembre 2008.

Appréciation des ressources

Il existe une inexactitude concernant les contrats européens obtenus. Il ne s'agit pas de deux contrats du 6ème PCRD mais d'un contrat du 5ème PCRD en tant que coordinateur (FP5-QLRT-2001-00843. ARTRADI 2002-2005) et d'un contrat du 7ème PCRD en tant que partenaire (FP7-HEALTH-2007-B-223585. HYPERDIFF) signé le 20 novembre 2008 pour une durée de trois ans. Les crédits de ce programme renforcent de façon conséquente les crédits provenant de l'université et de l'INRA et comprennent une allocation de thèse. Nous sommes bien conscients, comme cela a été évoqué,

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que les crédits propres sont relativement faibles et qu'il est nécessaire de les compléter par des crédits sur programme. Nous sommes prêts à répondre aux différents appels d'offre locaux, régionaux, nationaux et internationaux afin d'améliorer le financement de l'équipe.

Recommandations

Nous apprécions que l'EA 4043 soit considérée comme une excellente « équipe universitaire » avec un projet original et que le travail réalisé concernant les recrutements de jeunes enseignants-chercheurs soit reconnu à l'origine du dynamisme de l'équipe.

Nous avons bien conscience de l'intérêt à valoriser les collaborations hospitalières. La dispersion des enseignants-chercheurs avec fonction hospitalière dans des sites hospitaliers différents ne facilite pas une potentialisation thématique entre équipes hospitalières et universitaires. Toutefois, un des projets du prochain contrat concerne l'étude moléculaire du microbiote intestinal de l'enfant en fonction de la colonisation ou non par *Clostridium difficile* ; ce projet est réalisé en collaboration avec les hôpitaux Jean Verdier et Versailles et est intégré dans le travail de thèse d'université d'un assistant de l'hôpital Jean Verdier. Nous souhaitons demander une aide financière dans le cadre d'un PHRC. Par ailleurs, nous espérons que la création du CHU pharmaceutique facilitera les coopérations hospitalo-universitaires déjà existantes.

La thématique des transposons a été récemment introduite au laboratoire et a permis d'obtenir un contrat européen et un contrat ANR, des publications vont suivre. Les travaux effectués et les compétences acquises bénéficieront aux travaux de l'ensemble de l'équipe par ses applications à l'étude moléculaire de *C. difficile*.

Nous sommes attentifs à la nécessité de poursuivre l'effort déjà entrepris de focaliser nos recherches en utilisant au mieux les compétences des membres de l'équipe afin de pouvoir prétendre à une position de leader au niveau international.

Anne Collignon

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English version

Our response to the AERES Expert Committee Report

The entire team thanks the AERES Committee of Experts for their invaluable work and the constructive remarks outlined in their evaluation report, this following their November 13 visit to our unit.

Below are our remarks concerning some of the points made in the AERES evaluation report.

Presentation of the research unit

Our EA's staff is composed of 9 publishing researchers, who also have teaching duties (2 PR, 7MCF, including 5HDR) and 4 IATOS agents (2 technicians, 1 technical agent, one administrative agent).

Four of our students (and not three as indicated) have defended their PhD thesis in the past four years: Séverine Péchiné (2005), Jean-Winoc Decousser (2006), Sacha Lebel (2006), Aline Launay (2007). Cécile Denève defendes her PhD thesis in December 2008.

Appreciation of resources

There seems to be some mistake as to the European contracts that our unit has received.

In fact, we have received 2 contracts 1 FP5 and 1 FP7 and not 2 FP6 contracts.

Here are the European contracts that our unit has actually received.

- FP5-QLRT-2001-00843. ARTRADI 2002-2005 as Coordinator
- FP7-HEALTH-2007-B-223585. HYPERDIFF contract as a Partner signed on 20 November 2008.

This contract greatly reinforces the University and INRA's recurrent funding including a PhD grant. We are aware, as the committee suggests, that given the inadequacy of such funding, we must look to other sources of funds on a local, regional, national and international level.

Recommendations

We very much appreciate the recognition of excellence as an « universitary team » that our EA 4043 unit has been given. We are thrilled that the AERES Committee of Experts considers us to be an exemplary and dynamic « university team » with an original and stimulating project of great benefit to the senior and junior researchers of the unit.

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We all understand the need to make better use of our hospital collaborators. The dispersion of the researchers in several hospitals located in different areas clearly does not facilitate the synergy between the hospital and universitary teams. However, one of our next projects deals with the molecular study of the infant intestinal microbiota in the presence or absence of *Clostridium difficile*. EA4043 works in collaboration with Jean Verdier hospital and Versailles hospital on this project. We plan to answer a call in the framework of PHRC. We hope that the creation of the « CHU pharmaceutique » will facilitate our hospital-university collaborations.

The thematic on transposons has been recently initiated in the laboratory. A European contract and an ANR contract have been built on this thematic and the works performed will lead to publications. This competence will, by its application to our works on the molecular study of *C. difficile,* be beneficial both to us and to future research.

We are fully aware of the necessity to do our utmost to focalize our work and to use our highly dynamic team in order to be appreciated on an international level.

Anne Collignon

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