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# BIOSCAR - Biologie de l'os et du cartilage : régulations et ciblage thérapeutique

Rapport Hcéres

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

Department for the evaluation of  
research units

AERES report on unit:

Biologie de l'os et du cartilage : régulations et ciblage  
thérapeutique

BIOSCAR

Under the supervision of  
the following institutions  
and research bodies:

Université Paris 7 - Denis Diderot

Institut national de la santé et de la recherche  
médicale





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

Research Units Department

President of AERES

**Didier Houssin**

Research Units Department

*Department Head*

**Pierre Glaudes**



# Grading

Once the visits for the 2012-2013 evaluation campaign had been completed, the chairpersons of the expert committees, who met per disciplinary group, proceeded to attribute a score to the research units in their group (and, when necessary, for these units' in-house teams).

This score (A+, A, B, C) concerned each of the six criteria defined by the AERES.

NN (not-scored) attached to a criteria indicate that this one was not applicable to the particular case of this research unit or this team.

**Criterion 1 - C1:** Scientific outputs and quality;

**Criterion 2 - C2:** Academic reputation and appeal;

**Criterion 3 - C3:** Interactions with the social, economic and cultural environment;

**Criterion 4 - C4:** Organisation and life of the institution (or of the team);

**Criterion 5 - C5:** Involvement in training through research;

**Criterion 6 - C6:** Strategy and five-year plan.

With respect to this score, the research unit concerned by this report and its in-house teams received the following grades:

- Grading table of the unit: **Biologie de l'os et du cartilage: régulations et ciblage thérapeutique**

C1	C2	C3	C4	C5	C6
A	A	A+	A	A+	A+

- Grading table of the team: **Ostéoformation**

C1	C2	C3	C4	C5	C6
B	B	A	NN	A+	A

- Grading table of the team: **Os, cartilage et environnement**

C1	C2	C3	C4	C5	C6
A	A	A+	NN	A+	A+



## Evaluation report

Unit name:	Biologie de l'os et du cartilage
Unit acronym:	BIOSCAR
Label requested:	UMR-S
Present no.:	UMR-S 606
Name of Director (2012-2013):	Ms Marie-Christine DE VERNEJOU
Name of Project Leader (2014-2018):	Ms Martine COHEN-SOLAL

## Expert committee members

Chair:	Mr Philippe CLÉZARDIN, University of Lyon
Experts:	Ms Claudine BLIN, University of Nice (INSERM)
	Mr Joseph CAVERZASIO, University of Geneva, Switzerland
	Mr Thierry THOMAS, University of Saint-Etienne (CNU)

### Scientific delegate representing the AERES:

Mr Jean ROSENBAUM

### Representative(s) of the unit's supervising institutions and bodies:

Ms Christine CLERICI, University Paris Diderot

Ms Anne ROCHAT, INSERM



## 1 • Introduction

### History and geographical location of the unit

The unit INSERM 606 was first created in 2004, then renewed in 2009. It is located at the Lariboisière hospital, within the Viggo Petersen building, which also accommodates a clinical unit of rheumatology. This unit consists of 3 teams which have a strong research expertise in the biology and pathology of osteoblasts (team #1), osteoporosis (team #2) and bone and joint inflammation (team #3). Additionally, the close proximity of the research unit with the clinical unit of rheumatology has fostered collaborations with physicians, enabling the development of bench-to-bedside translational research.

Following the retirement to come of the director of unit 606 and the leader of team #1 by the end of year 2014, there was a need to restructure the existing unit in anticipation of the next 5-year research program. The new unit will consist of 2 teams. The members of team#1 divided themselves into the two other teams, according to the scientific projects. Importantly, expert committee members all agreed that, due to the unit restructuring, only the scientific production (publications, oral presentations at scientific meetings, awards, etc...) of former teams #2 and #3 should be taken into account for the present evaluation report.

### Management team

The former director (Ms Marie Christine DE VERNEJOU) is a well-recognized scientist in the bone research field. She has been thoroughly committed to the management of this unit since its creation 20 years ago. MC DE VERNEJOU will retire in 2014. However, MC DE VERNEJOU's retirement has been well anticipated. Martine COHEN-SOLAL will be the head of the new research unit. She has been working in the laboratory for many years; she also takes an active part in the clinic and university education. Martine COHEN-SOLAL will be supported in coordination tasks by a management team. This will comprise a secretary for the day-to-day administrative and financial management, a meeting with the team leaders every 3 months and an advisory committee that will meet once a year for a regular monitoring of the progress of scientific projects.

### AERES nomenclature

SVE\_LS4



### Unit workforce

Unit workforce	Number as at 30/06/2012	Number as at 01/01/2014	2014-2018 Number of project producers
<b>N1:</b> Permanent professors and similar positions	3	6	6
<b>N2:</b> Permanent researchers from Institutions and similar positions	9	6	6
<b>N3:</b> Other permanent staff (without research duties)	1	1	1
<b>N4:</b> Other professors (Emeritus Professor, on-contract Professor, etc.)	1	1	1
<b>N5:</b> Other researchers from Institutions (Emeritus Research Director, Postdoctoral students, visitors, etc.)	5		
<b>N6:</b> Other contractual staff (without research duties)			
<b>TOTAL N1 to N6</b>	19	14	14

Percentage of producers	100 %
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Unit workforce	Number as at 30/06/2012	Number as at 01/01/2014
Doctoral students	10	
Theses defended	12	
Postdoctoral students having spent at least 12 months in the unit*	4	
Number of Research Supervisor Qualifications (HDR) taken	3	
Qualified research supervisors (with an HDR) or similar positions	9	



## 2 • Assessment of the unit

### Strengths and opportunities

The BIOSCAR unit has a very good academic reputation, explaining its strong involvement in university education and the recent recruitment/coming of scientists and/or physicians in the unit. The five-year research plan of the unit is of high scientific value and the researchers (scientists and physicians) working in the unit all have the required scientific and technical skills to conduct cutting-edge research. The complementarity in the expertise of scientists and physicians is excellent, enabling the development of bench-to-bedside translational research. Importantly, there are only a few laboratories worldwide that are studying the bone-cartilage interface, thereby putting this project in the forefront of joint and bone research. Additionally, it is planned in the near future to accommodate another research unit within the Viggo Petersen building at the Lariboisière hospital. This unit works on joint and bone biomechanics and biomaterials. The grouping of these two units in the same building will undoubtedly create a unique academic and clinical research pole in rheumatology in Paris.

### Weaknesses and threats

An effort should be made to better exploit the intellectual property of the research conducted in the unit (*e.g.*, only 2 patents were registered over the last 5 years). The scientific production is good, but the mean impact factor of publications will have to be improved in order to strengthen the BIOSCAR unit's scientific reputation. Despite recent recruitments of scientists and physicians in the unit, this incoming is counterbalanced by the retiring/leaving of other scientists which, in turn, might slow down the smooth running of the different scientific projects.

### Recommendations

The unit leader should use this opportunity of developing an innovative research program (*i*) to increase the rate of high-ranking scientific publications, (*ii*) to further enhance its workforce in order to strengthen the overall scientific strategy of the unit, and (*iii*) to reinforce collaborative links between the two teams and the clinical unit of rheumatology in order to promote the cohesion of the whole group.





### 3 • Detailed assessments

#### Assessment of scientific quality and outputs

The laboratory has a world-recognized expertise in bone biology and joint and bone-associated diseases. Assessment of the scientific production of the laboratory shows a total of 81 publications in peer-reviewed scientific journals over the last 5 years, among which a fair number ( $n = 35$ ) is directly related to the work done in the lab, some of these in-house publications being published in high-ranking scientific journals (impact factor  $> 8$ ), such as *Ann Rheum Dis*, *Arthritis Rheum*, *J Am Soc Nephrol* and *PNAS*. Additionally, 34 reviews were published in peer-reviewed scientific journals, which again includes top-quality journals such as *Arthritis Rheum* and *Trends Immunol*. Finally, results have been presented as posters or oral communications at the main national and international scientific meetings in the bone research field (SFR, JFBTM, ASBMR, ECTS, ACR, EULAR). Enhanced value of the results obtained in the laboratory is also noticed, thanks to the achievement of 2 patents. Of note, the laboratory promotes bench-to-bedside translational research, coordinating several national and european clinical trials.

#### Assessment of the unit's academic reputation and appeal

The academic reputation and lisibility of the laboratory is underscored by *(i)* the large number of invitations of several members of the lab to act as speakers at national and international meetings, *(ii)* the fact that several lab members take an active part in the organization and functioning of professional organizations (ECTS, GRIQ, SFR, IBMS) for which they are members of the Board of Directors, and *(iii)* the coordination and/or participation in european networks (FP7 Talos, FP7 Anabonos, E-rare Osteopetr, European crystal network).

Moreover, several scientists and physicians have been recently recruited or joined the lab, and one team called ATIP/Avenir has been created, further demonstrating the excellent unit's academic reputation.

#### Assessment of the unit's interaction with the social, economic and cultural environment

There is a strong interaction with the social and economic environment, thanks to the scientific popularization (*e.g.*, publications in *Médecine & Longévité*, *Expansion Scientifique Française* and *Actualités Rhumatologiques*; interview at France Inter), the achievement of several contracts with charities and pharmaceutical industries (SFR, FRM, Fondation Avenir, Arthritis Courtin, Servier, Amgen, Novartis), the registration of two patents and the development of translational research (contrat d'interface; setting-up of cohorts in osteopetrosis and osteoporosis; search for mutations in the LRP5 gene in young adults with idiopathic osteoporosis; coordination of clinical trials).

#### Assessment of the unit's organisation and life

The decision-making structures of the unit are well-organized, and each team is working in an autonomous manner. There is a strong cohesion between people working within the unit and internal career promotion is highly encouraged, as illustrated by two technicians who defended their PhD thesis.

#### Assessment of the unit's involvement in training through research

There is a strong and supportive relationship between PhD students, postdocs and senior researchers in the unit, thanks to a learning-through-guided-experience training method and weekly lab meetings, so that the monitoring of the research activities of students/postdocs is very efficient. Additionally, students/postdocs are strongly encouraged to attend national and international meetings where they can present their work to the scientific community; they also write papers on the results obtained within the frame of their respective research projects. Of note, 2 technicians defended their PhD thesis, further demonstrating the strong involvement of the unit in training through research. Additionally, the head of the unit takes a very active part in university education, acting as the coordinator of 2 Masters and 2 other educational modules (UE2 PACES, DIU ostéopathies fragilisantes).



### Assessment of the five-year plan and strategy

The five-year research plan of the unit is of high scientific value and the researchers (scientists and physicians) working in the unit all have the required scientific and technical skills to conduct cutting-edge research. Importantly, there is only a few laboratories worldwide that are studying the bone-cartilage interface, thereby putting this project in the forefront of joint and bone research.

From a strategic viewpoint, there is a strong logistic support from the university to maintain a research unit at Lariboisière hospital. Indeed, it is envisioned that another research unit working on bone and joint biomaterials and biomechanics will soon join the hospital. The coming of this unit on the same geographic site than the BIOSCAR unit will undoubtedly promote collaborative works between the two groups and create a unique academic and clinical research pole in rheumatology in Paris.



## 4 • Team-by-team analysis

**Team 1 :** Ostéoformation

**Name of team leader:** Ms Valérie GEOFFROY

**Workforce**

Team workforce	Number as at 30/06/2012	Number as at 01/01/2014	2014-2018 Number of project producers
<b>N1:</b> Permanent professors and similar positions	1	2	
<b>N2:</b> Permanent EPST or EPIC researchers and similar positions	2	3	
<b>N3:</b> Other permanent staff (without research duties)		1	
<b>N4:</b> Other professors (PREM, ECC, etc.)			
<b>N5:</b> Other EPST or EPIC researchers (DREM, Postdoctoral students, visitors, etc.)	2		
<b>N6:</b> Other contractual staff (without research duties)			
<b>TOTAL N1 to N6</b>	5	6	

Team workforce	Number as at 30/06/2012	Number as at 01/01/2014
Doctoral students	12	
Theses defended	8	
Postdoctoral students having spent at least 12 months in the unit	4	
Number of Research Supervisor Qualifications (HDR) taken	3	
Qualified research supervisors (with an HDR) or similar positions	5	



## • Detailed assessments

### Assessment of the unit's scientific quality and outputs

The team is studying the biology and pathology of osteoblasts and osteoclasts, and their implication in osteoporosis. Fifty-three (53) original publications have been published over the past 5 years in peer-reviewed scientific journals, among which 19 publications were directly related to the work done in the lab, the remaining 34 publications being mainly the issue from collaborative works with other laboratories (n = 24) and previous publications from a scientist who recently joined the team (n = 10). Of note, some of the studies conducted by team#1 members have been published in top-quality scientific journals (impact factor > 8), such as *Ann Rheum Dis* (n=1), *J Am Soc Nephrol* (n=1) and *PNAS* (n=1). Additionally, 7 reviews were published in peer-reviewed scientific journals. Finally, results have been presented as posters or oral communications at the main national and international scientific meetings in the bone research field (JFBTM, SFR, ASBMR, ECTS).

### Assessment of the unit's academic reputation and appeal

Several members of the team take an active part in the organization and functioning of professional organizations, including the European Calcified Tissue Society (ECTS) and the International Bone and Mineral Society (IBMS), for which they are members of the Board of Directors.

One of the team members received a prestigious european award (ECTS Servier Award).

A young scientist (researcher INSERM) has joined the team in order to develop a research project which is complementary to the other projects already conducted by the team. The coming of this scientist will undoubtedly bring new scientific knowledge and skills, and reinforce the overall strategy of the team.

### Assessment of the unit's interaction with the social, economic and cultural environment

The scientific popularization is very good (*e.g.*, publications in *Expansion Scientifique Française* and interview at *France Inter*). Contracts with charities and pharmaceutical industry have been granted (FRM, Servier), and there is a strong development of translational research (contrat d'interface; coordination of the european clinical trial Profidys; search for mutations in the LRP5 gene in young adults with idiopathic osteoporosis).

### Assessment of the unit's involvement in training through research

There is a strong training through research in the team, thanks to the senior researchers, so that the monitoring of the research activities of students/postdocs is very efficient. Five thesis have been defended, 2 are undergoing and 10 master students have been trained. Of note, 2 technicians defended their PhD thesis, further demonstrating the strong involvement of the team in training. Students and postdocs present their work at national and international meetings, and they write and sign their papers as first authors. Team members have also teaching activities for 2 Masters (M1 and M2), management activities in coordinating a DIU (Pathologie Médicale Osseuse) and they are part of the scientific committee of the Ecole Doctorale B2T.

### Assessment of the five-year plan and strategy

The five-year plan includes several projects that are obviously relevant and of high scientific value. These include (i) the role of N-cadherin in the osteoblastic niche, (ii) the impact of osteoprogenitors' origin on the formation of cortical vs trabecular bone, (iii) the role of microRNAs in regulating Runx2 expression on osteoblast formation, (iv) the regulation of gene expression (polymorphism, methylation), as exemplified by the SOST (sclerostin) gene, on bone diseases (osteogenesis imperfecta), (v) the role of serotonin on bone remodeling, and (vi) some clinical applications in rheumatology (idiopathic osteoporosis, osteopetrosis, fibrous dysplasia). Given the number of projects, it is suggested to organize them into a hierarchy in order to facilitate the running of these different scientific projects.



## Conclusion

- Strengths and opportunities:

The scientific program builds on *(i)* previous findings published by the team members and *(ii)* in-house animal models and know-how, so that the feasibility of the whole scientific project is very good. Additionally, a young scientist has recently joined the team, which will broaden the scientific skills of the team.

- Weaknesses and threats:

As aforementioned, the workplan includes several good scientific projects. However, there are too many projects, so that they cannot be conducted at the same time.

- Recommendations:

The team leader should make every effort to organize scientific projects into a hierarchy in order to facilitate the smooth running of these projects.



**Team 2 :** Os, cartilage et environnement

**Name of team leader:** Ms Martine COHEN-SOLAL

### Workforce

Team workforce	Number as at 30/06/2012	Number as at 01/01/2014	2014-2018 Number of project producers
<b>N1:</b> Permanent professors and similar positions	2	4	4
<b>N2:</b> Permanent EPST or EPIC researchers and similar positions	2	2	2
<b>N3:</b> Other permanent staff (without research duties)			
<b>N4:</b> Other professors (PREM, ECC, etc.)	2	2	1
<b>N5:</b> Other EPST or EPIC researchers (DREM, Postdoctoral students, visitors, etc.)	1	1	1
<b>N6:</b> Other contractual staff (without research duties)			
<b>TOTAL N1 to N6</b>	7	9	8

Team workforce	Number as at 30/06/2012	Number as at 01/01/2014
Doctoral students	5	
Theses defended	4	
Postdoctoral students having spent at least 12 months in the unit	1	
Number of Research Supervisor Qualifications (HDR) taken	1	
Qualified research supervisors (with an HDR) or similar positions	7	



## • Detailed assessments

### Assessment of scientific quality and outputs

The team is studying bone and joint inflammation, both in pre-clinical models and in the clinic. Twenty-eight (28) original publications have been published over the past 5 years in peer-reviewed scientific journals among which 16 publications were directly related to the work done in the lab, the remaining 12 publications being issued from collaborative works with other laboratories. Of note, most of the studies (9 out of 16) conducted by team#2 members have been published in high-quality scientific journals (impact factor > 6), such as JBMR (n=1), Ann Rheum Dis (n=2), Arthritis Rheum (n=5), and PNAS (n=1). Additionally, 27 reviews were published in peer-reviewed scientific journals, which again includes top-quality journals such as Arthritis Rheum (n=1) and Trends Immunol (n=1). Finally, results have been presented as posters or oral communications at major national and international scientific meetings in the bone research field (SFR, ACR, ASBMR, EULAR).

### Assessment of the unit's academic reputation and appeal

The academic reputation and visibility of the team is highlighted by (i) the large number of invitations of several members of team#2 to act as speakers at national and international meetings, (ii) the fact that several members of the team take an active part in the organization and functioning of professional organizations, including the European Calcified Tissue Society (ECTS), the Groupe de Recherche et d'Informations sur les Ostéoporoses GRIO and the Société Française de Rhumatologie (SFR), for which they are members of the Board of Directors, and (iii) the organization of an annual european workshop on crystal-induced inflammation and human diseases. Moreover, two young scientists (1 MCF and 1 PHU) have been recruited and 1 researcher Inserm and 2 PUPH are joining the team, further demonstrating that the team has an excellent academic reputation.

### Assessment of the unit's interaction with the social, economic and cultural environment

There is a strong interaction with the social and economic environment, thanks to the scientific popularization (*e.g.*, publications in Médecine & Longévité and Actualités Rhumatologiques), the achievement of several contracts with charities and pharmaceutical industries (SFR, FRM, Fondation Avenir, Arthritis Courtin, Servier, Amgen, Novartis), the registration of one patent (PCT/EP2011/057694) and the development of translational research (setting-up of cohorts in osteopetrosis and osteoporosis; coordination of the clinical trial Tocidys).

### Assessment of the unit's involvement in training through research

There is a strong and supportive relationship between PhD students, postdocs and senior researchers in the team, thanks to a learning-through-guided-experience training method and weekly lab meetings, so that the monitoring of the research activities of students/postdocs is very efficient. Additionally, students/postdocs are strongly encouraged to attend national and international meetings where they can present their work to the scientific community; they also write papers on the results obtained within the frame of their respective research projects.

The team leader takes a very active part in university education. She is the coordinator of 2 Masters and 2 other educational modules (UE2 PACES, DIU ostéopathies fragilisantes).

### Assessment of the five-year plan and strategy

The research program is of high scientific value and team members all have the required skills to conduct cutting-edge research. Scientific projects to be conducted during this 5-year plan include (i) the role of Wnt inhibitors in regulating bone-cartilage interactions, (ii) the role of cartilage-derived factors (IL-6, galectin 3) in arthrosis, and (iii) the role of microcrystals in cartilage-associated diseases. Importantly, there are only a few laboratories worldwide that are studying the bone-cartilage interface, thereby putting this project in the forefront of joint and bone research.



## Conclusion

- Strengths and opportunities:

The academic reputation and lisibility of the team is very good, as highlighted by the number of invitations to act as a speaker at scientific meetings, the deep involvement in university education and the recent recruitment of scientists and/or physicians in the team. All of the team members have the required scientific skills to successfully conduct the 5-year scientific program. Additionally, this program is at the forefront of joint and bone research.

- Weaknesses and threats:

An effort should be made to enhance the exploitation of the intellectual property of the research conducted in the lab.

- Recommendations:

The team leader should use the opportunity of developing an innovative research program to increase the rate of high-ranking scientific publications.





## 5 • Conduct of the visit

### Visit date:

Start: 10 December 2012, at 8h30 am

End: 10 December 2012, at 5h30 pm

Visit site: Bâtiment Viggo Petersen

Institution: Hôpital Lariboisière

Address: rue Ambroise Paré, Paris

### Conduct or programme of visit:

8h30 -9h00	Huis clos - Présentation de l'AERES au comité par le Délégué
9h00 -9h15	Devant l'unité, présentation du Comité de visite et Présentation de l'AERES par le Délégué
9h15-10h	Présentation de l'unité, bilan et projet (discussion incluse)

### Audition des équipes

10h-10h45	Bilan et projet équipe 1 (discussion incluse)
10h45-11h30	Bilan et projet équipe 2 (discussion incluse)
11h30-11h45	Pause
12h-12h15	Rencontre avec les chercheurs et enseignants chercheurs titulaires. <i>Auditoire : membres du Comité, Délégué AERES, sans les Tutelles, ni la Direction, ni les responsables d'Equipes</i>
12h30-13h30	Déjeuner de travail à la bibliothèque de Viggo Petersen, 1° étage

### Session rencontre avec le personnel permanent et non permanent

Lieu : salle de réunion de l'unité : SS du bâtiment Viggo Petersen

13h30 -14h00	Rencontre avec les ITA titulaires, CDD (salle de repos de l'unité, 3° étage) <i>Auditoire : membres du Comité, Délégué AERES, sans les Tutelles, ni la Direction</i> Rencontre avec les doctorants et post-doctorants et/ou CDD « chercheurs » <i>Auditoire : membres du Comité, Délégué AERES, sans les Tutelles, ni la Direction</i>
14h00-14h30	Rencontre avec les représentants de la Tutelle: université, INSERM, hôpital <i>Auditoire : membres du Comité, Délégué AERES</i>
14h30-15h	Rencontre avec la direction de l'unité <i>Auditoire : membres du Comité, Délégué AERES</i>
15h00-17h30	Réunion du comité à huis clos <i>Présence : membres du Comité, délégué AERES</i>



**Specific points to be mentioned:**

Autres personnes présentes à la réunion avec les tutelles :

M. Bruno CRESTANI, vice-doyen UFR de médecine

M<sup>me</sup> Valérie DESSIRIER, représentant les ITA de la CSS5

M<sup>me</sup> Laurence LHOMME, DR INSERM

M. Christian NICOLAS, Directeur CHU

M. Rémi NIZARD, président de la CME

M. Benoit SCHLEMMER, doyen UFR de médecine



## 6 • Statistics by field: SVE au 10/06/2013

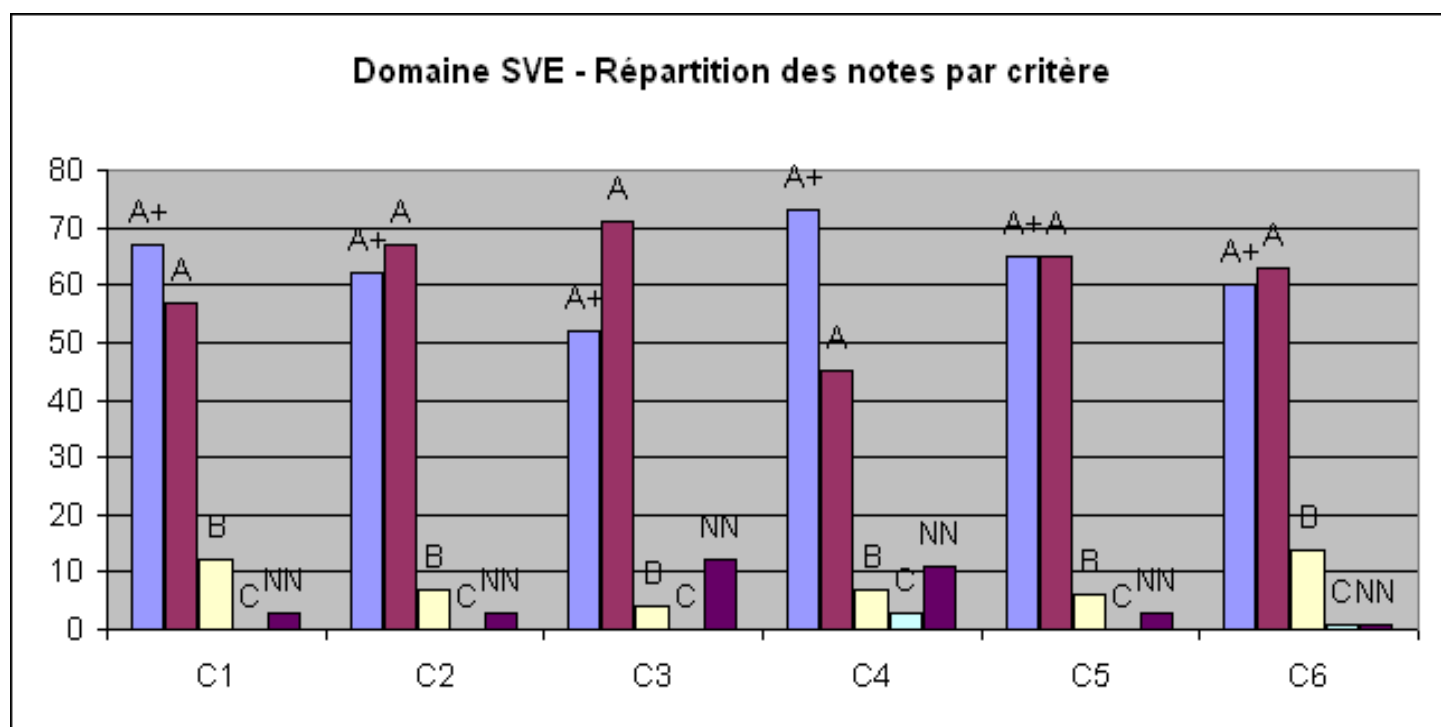
### Grades

Critères	C1 Qualité scientifique et production	C2 Rayonnement et attractivité académiques	C3 Relations avec l'environnement social, économique et culturel	C4 Organisation et vie de l'entité	C5 Implication dans la formation par la recherche	C6 Stratégie et projet à cinq ans
A+	67	62	52	73	65	60
A	57	67	71	45	65	63
B	12	7	4	7	6	14
C	0	0	0	3	0	1
Non Noté	3	3	12	11	3	1

### Percentages

Critères	C1 Qualité scientifique et production	C2 Rayonnement et attractivité académiques	C3 Relations avec l'environnement social, économique et culturel	C4 Organisation et vie de l'entité	C5 Implication dans la formation par la recherche	C6 Stratégie et projet à cinq ans
A+	48%	45%	37%	53%	47%	43%
A	41%	48%	51%	32%	47%	45%
B	9%	5%	3%	5%	4%	10%
C	0%	0%	0%	2%	0%	1%
Non Noté	2%	2%	9%	8%	2%	1%

### Histogram





## 7 • Supervising bodies' general comments

Le Président

P/VB/NC/YM – 2013 - 065  
Paris, le 09 avril 2013

M. Pierre Glaudes  
Directeur de la section des unités de l'AERES  
20 rue Vivienne  
75002 PARIS

**S2PURI40006377 - Biologie de l'os et du cartilage : régulations et ciblage thérapeutique - BIOSCAR - 0751723R**

Monsieur le Directeur,

Je tiens en premier lieu à remercier les membres du comité de visite de l'AERES pour la production du rapport sur la situation de l'UMR 606 « Biologie de l'os et du cartilage ».

Le comité rapporte que la réunion de trois équipes avec une expertise collaborative forte importante entre physiciens et biologistes constitue une des forces de l'unité, ce dont je me réjouis dans le contexte d'interdisciplinarité que l'université défend dans son projet. Je suis certain que cette collaboration accélèrera la valorisation de cette recherche de haut niveau, dont l'unité est un des leaders au niveau international dans les études du lien os-cartilage.

Le fort support logistique de l'Université à cette unité, mentionné dans le rapport, traduit la volonté de l'université de renforcer, à la mesure de ses moyens, et en association avec l'INSERM, cette unité à haut potentiel de recherche.

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

  
Vincent Berger

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M. CRESSENT	01 49 95 86 81
O. FROMIGUÉ	01 49 95 63 59
V. GEOFFROY	01 49 95 64 47
E. HAY	01 49 95 63 59
F. JEHAN	01 49 95 63 18
F. LIOTÉ	01 49 95 62 86
A. LOMRI	01 49 95 63 28
P. MARIE	01 49 95 63 89
D. MODROWSKI	01 49 95 63 52
S. PROVOT	01 49 95 63 58
M. ZOUALI	01 49 95 63 28

**Paris, le 28 Mars 2013**

**Madame, monsieur,**

Nous avons pris connaissance du rapport de la visite d'unité et souhaitons apporter des commentaires.

Le comité a souhaité évaluer la production scientifique des membres de l'unité future sans inclure le bilan du contrat actuel. Il nous semble que l'absence de bilan néglige l'effort fait par l'ensemble de l'unité dans le développement de nouvelles thématiques qui servent de base au projet futur.

La valorisation apparaît comme un point faible en dépit de l'obtention de 2 brevets internationaux et des publications de haut niveau, alors que cela est signalé dans d'autres parties du rapport. Les recommandations portent sur des éléments déjà initiés et mentionnés tels que le développement de programmes innovants et la collaboration inter-équipe. Les forces vives ont été renouvelées avec le recrutement de nouveaux chercheurs (un CR1, un PHU et un MCU) et un CR1 avec une équipe ATIP/Avenir.

S'agissant de l'équipe de Valérie Geoffroy, les projets sont jugés pertinents et de haute valeur scientifique, mais non hiérarchisés et trop nombreux pour être conduits en même temps. Nous tenons à préciser que le projet d'équipe a été structuré autour des mécanismes de la formation osseuse. Bien que le projet puisse apparaître trop riche, les projets présentés correspondent au nombre de chercheurs, chacun d'entre eux est soutenu par des subventions obtenues récemment, ce qui renforce leur faisabilité du projet de cette équipe.

L'ensemble de la restructuration, le recrutement de nouveaux chercheurs et le financement de chacun des projets permettront de mener à bien le projet d'unité.



**Pr Martine Cohen-Solal**



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M. CRESSENT	01 49 95 86 81
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A. LOMRI	01 49 95 63 28
P. MARIE	01 49 95 63 89
D. MODROWSKI	01 49 95 63 52
S. PROVOT	01 49 95 63 58
M. ZOUALI	01 49 95 63 28

**Paris, le 28 Mars 2013**

**Madame, monsieur,**

Nous avons pris connaissance du rapport de la visite d'unité et souhaitons apporter des précisions.

L'organigramme de l'équipe « Ostéoformation » est erroné (page 8). Elle comportera 3 permanents EPST et non 4 membres. Il semble que le comité AERES ait inclus Sylvain Provot CR1 dans cette équipe alors qu'il bénéficie d'une équipe individualisée ATIP/Avenir.

Le rapport mentionne l'obtention du prix prestigieux de l'ECTS par Valérie Geoffroy, directeur de l'équipe « ostéoformation ». Ce prix a été décerné à Corinne Collet qui fait partie de cette équipe et qui mènera son projet grâce à cette subvention.

**Pr Martine Cohen-Solal**