



## Sepsis et hémostase

### Rapport Hcéres

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# HCERES

High Council for the Evaluation of Research  
and Higher Education

Research units

HCERES report on research unit:

Hemostasis, inflammation and sepsis

Under the supervision of  
the following institutions  
and research bodies:

Université Claude Bernard Lyon 1 - UCB

# 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>*

Jan VOORBERG, chairman of the committee

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Under the decree N°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: Hemostasis, inflammation, and sepsis

Unit acronym:

Label requested: University Lyon 1

Present no.: EA4174

Name of Director  
(2014-2015): Mr Claude NÉGRIER

Name of Project Leader  
(2016-2020): Mr Claude NÉGRIER

## Expert committee members

Chair: Mr Jan VOORBERG, University of Amsterdam, the Netherlands

Experts: Mr Peter LENTING, INSERM, Unité 1176, Paris  
Mr Jean-François Schved, University of Montpellier (representative of the CNU)

Scientific delegate representing the HCERES:

Mr Joost VAN MEERWIJK

Representatives of the unit's supervising institutions and bodies:

Ms Emmanuelle CANET-SOULAS (head of the Doctoral School "École Doctorale Inter-Disciplinaire Sciences-Santé" - EDISS - ED n°205)

Mr Denis FOUQUE, University Lyon 1

Mr François TEILLARD, Hospices Civils de Lyon

## 1 • Introduction

### History and geographical location of the unit

The research team EA 4174 "Hemostasis, inflammation and sepsis" headed by Mr Claude NÉGRIER originates from the fusion of several pre-existing research teams and groups in 2010. The distinct groups of the team were located on several sites of the Medical Faculty of Lyon, in a joint unit of Hospices Civils de Lyon/bioMérieux, and on the campus of the Veterinary School (VetAgroSup).

The group headed by Mr Claude NÉGRIER has decided to refocus on the theme of hemostasis emphasizing (i) Physiology and pathophysiology of coagulation and (ii) Coagulation factors and cancer. The future team will be headed by Mr Claude NÉGRIER; expertise for research on the physiology and pathophysiology of coagulation is provided by Ms Yesim DARGAUD; expertise on links between coagulation and cancer is provided by Mr Habib BOUKERCHE. For the next five-year contract the title of the team will be "Hemostasis, inflammation, and Cancer". Two more research teams will spin-off from the EA 4174: The team "Pulmonary and Circulatory Aggression in Sepsis" headed by Mr Bernard ALLAOUCHICHE and the team "Pathophysiology of injury-induced immunosuppression" headed by Mr Guillaume MONNERET.

The research team is located within the Faculty of Medicine RTH Laennec Lyon and is housed on the 3<sup>rd</sup> floor of building B of UFR Lyon-Est Laennec. The surface area available to the research-team comprises 635 m<sup>2</sup>, which includes two L2 laboratories for tissue culture. It has access to an animal facility (of the "Institut Fédératif de Recherche", IFR200) in the same building. It has close links with various departments of the University hospital (CHU) of Lyon. Mr Claude NÉGRIER and Ms Yesim DARGAUD are both affiliated to the unit of clinical hemostasis of the University cardiology hospital Louis Pradel. The team has also access to the core genomics facility of the latter hospital.

### Management team

There is no formal management committee for the team. Decisions are being made by the team-director based on consensus among the various team-members. All permanent researchers, administrative, research technicians and engineers and PhD students meet at least once every year and more frequently if required.

### HCERES nomenclature

SVE1\_LS4 Physiology, pathophysiology, medical systems biology

## Unit workforce

Unit workforce	Number as at 30/06/2014	Number as at 01/01/2016
<b>N1:</b> Permanent professors and similar positions	14	3
<b>N2:</b> Permanent researchers from Institutions and similar positions	1	1
<b>N3:</b> Other permanent staff (without research duties)	14	4
<b>N4:</b> Other professors (Emeritus Professor, on-contract Professor, etc.)	4	3
<b>N5:</b> Other researchers (Emeritus Research Director, Postdoctoral students, visitors, etc.)	1	1
<b>N6:</b> Other contractual staff (without research duties)		1
<b>TOTAL N1 to N6</b>	<b>34</b>	<b>13</b>

Unit workforce	Number as at 30/06/2014	Number as at 01/01/2016
Doctoral students	12	
Theses defended	5	
Postdoctoral students having spent at least 12 months in the unit		
Number of Research Supervisor Qualifications (HDR) taken	2	
Qualified research supervisors (with an HDR) or similar positions	11	4

## 2 • Overall assessment of the unit

### Global assessment of the unit

The team has a long-lasting experience in the field of thrombosis and hemostasis, in particular in the area of clinically-oriented research related to the X-linked bleeding disorders hemophilia A and B. The scientific output in clinical research on hemophilia is of the highest level. Investigators from the team participate in numerous clinical trials involving patients with hemophilia A and B. Their international reputation in the area of clinical haemophilia is excellent. Their well-established clinical profile is well-complemented by laboratory studies that focus on genetic analysis of patients, improved diagnostic assays to monitor patients with bleeding disorders, and design and development of novel therapeutic approaches for hemophilia. The potential synergy between clinical and translational research in hemophilia provides a very strong asset of the team. The research of this team on the interplay between coagulation and cancer provides an interesting opportunity to further broaden its research-portfolio in a clinically relevant area. Developing sufficient critical mass for this novel line of research and further integration with current lines of research on

thrombosis and hemostasis provides an interesting challenge for the future. Altogether, the team is expected to further secure and extend its profile of excellence in the field of thrombosis and hemostasis.

### Strengths and opportunities in relation to the context

The total scientific production over the past five years is impressive. The impact factors of some of the publications involving clinical trials in hemophilia are extremely high (>20).

The team has a dominant position in France with respect to clinical activities in inherited bleeding disorders. It coordinates a national reference center on bleeding disorders.

The research on clinical hemophilia of this team is internationally at the forefront.

The academic reputation of the team is emphasized by regular invitations of key members at international conferences such as the World Federation of Hemophilia, the American Society of Hematology and the International Society of Thrombosis and Hemostasis.

The team has strong interactions with industry and attracts a lot of external funding from the private sector.

The team is actively involved in training of PhD students.

The team's clinical profile is nicely complemented by innovative genomic approaches for studying patients with hemostatic disorders.

The ambition profile of the team is high, aiming for development of novel therapeutic approaches for hemophilia.

There are good funding possibilities for the line of research on the link between cancer and hemostasis.

### Weaknesses and threats related to the context

The strength of the team is its ability to acquire grants from industry, the team appears to be less active with respect to other funding opportunities such as ANR and EU-funding.

The high impact papers on clinical trials in hemophilia reflect the authority of the team leader and some members of the team in this area but most of these studies do not result from research performed at the team.

The studies on the relationship between hemostasis and cancer provide a potential opportunity for further scientific development and innovation of the team. Presently, the critical mass available for this line of research appears to be limited and this topic appears not to be very well-integrated with other ongoing activities of the team.

The number of PhD students working in the team is currently 12. Mentoring of PhD students, especially with respect to their future career, can be further improved. Currently, no postdocs are working in the team. In view of the ambitions of the team (development of novel therapeutics for hemophilia and of genomic approaches for bleeding disorders & cancer and hemostasis), input from relatively experienced post-doctoral researchers would help to increase critical mass for these different lines of research. This will be particularly beneficial for the theme "cancer & hemostasis".

### Recommendations

Access to clinical samples is well-ensured by the close links of the team with the hospital. Further integration of clinical and laboratory research on hemostatic disorders for instance by applying advanced genomic technologies is needed to further increase the impact of the translational laboratory studies of the team.

The level of ambition of the team is very high. Diversity of research portfolio provides a challenge for the team. The line of clinical research in hemophilia is very well-developed. In view of the available

resources, focusing on a more selected number of topics preferably with a clear link to clinical research of the team will help to further position the team in the area of hemostasis (and cancer). Alternative, strategic efforts to acquire more synergy between the different lines of research will probably help.

Currently mainly PhD students employed; recruitment of foreign postdocs will help to further strengthen international academic reputation. Mentoring of PhD students needs to be further improved.