BPPS - Biologie et pharmacologie des plaquettes sanguines : hémostases, thrombose, transfusion

Rapport Hcéres

HCERES

High Council for the Evaluation of Research and Higher Education

Department of Research Evaluation

report on research unit:

Biology and pharmacology of blood platelets: haemostasis, thrombosis, transfusion

Under the supervision of the following institutions and research bodies:

Université de Strasbourg

Institut National de la Santé et de la Recherche Médicale – INSERM

Établissement Français du Sang – EFS

Evaluation Campaign 2016-2017 (Group C)

HCERES

High Council for the Evaluation of Research and Higher Education

Department of Research Evaluation

In the name of HCERES,[1]

Michel Cosnard, president

In the name of the experts committee,[2]

Yotis Senis, chairman of the committee

Under the decree N°.2014-1365 dated 14 november 2014,

[1] The president of HCERES "countersigns the evaluation reports set up by the experts committees and signed by their chairman." (Article 8, paragraph 5)

[2] The evaluation reports "are signed by the chairman of the expert committee". (Article 11, paragraph 2)

Evaluation report

This report is the sole result of evaluation by the expert committee, the composition of which is specified below.

The assessments contained herein are the expression of an independent and collegial reviewing by the committee.

Unit name:	Biology and pharmacology of blood platelets: haemostasis, thrombosis, transfusion
Unit acronym:	
Label requested:	UMR
Current number:	949
Name of Director (2016-2017):	Mr Christian GACHET
Name of Project Leader (2018-2022):	Mr Christian GACHET

Expert committee members

Chair:	Mr Yotis SENIS, University of Birmingham
Experts:	Mr Ramaroson ANDRIANTSITOHAINA, Université d'Angers (representative of INSERM)
	Ms Pascale GAUSSEM, Université Paris Descartes, INSERM
	Ms Nathalie JOUY, Université de Lille, INSERM (representative of supporting personnel)
	Ms Marie-Caroline LE BOUSSE-KERDILES, Université Paris-Sud, INSERM
Scientific delegate representing the HCERES:	Ms Florence PINET
Representatives of supervising institutions and bodies:	Ms Catherine FLORENTZ, Université de Strasbourg
	Ms Marie-Ange LUC, INSERM
	Mr Pierre TIEBERGHIEN, EFS
Head of Doctoral School:	Ms Catherine SCHUSTER, Doctoral School n°414, " Life and Health"

1 • Introduction

History and geographical location of the unit

The INSERM U 949 located in "l'Établissement Français du Sang" (EFS) Alsace-Lorraine-Champagne-Ardenne (ALCA) and directed by Mr Christian GACHET was created on 1st January 2009, as the successor to the U 311 previously created by Mr Jean-Pierre CAZENAVE in 1986. U 311 was recreated in 1999 and directed by Mr Christian GACHET since 2002. The group is composed of two complementary and interactive teams: team 1, entitled "Biology and pharmacology of blood platelets" under the direction of Mr Christian GACHET; and team 2, entitled "Biology of thrombopoiesis" under the direction of Mr François LANZA. Research undertaken at this unit is both multi- and inter-disciplinary in nature and includes cutting-edge thrombosis and haemostasis laboratories, platelet production laboratory, animal facility and electron microscopy platform. Work is carried out in collaboration with the University of Strasbourg, University Hospital of Strasbourg and EFS.

Management team

Over the course of the contract, Mr Christian GACHET was the director of the research unit and was appointed director of EFS-Alsace in 2013.

HCERES nomenclature

SVE5 Physiologie, Physiopathologie, Cardiologie, Pharmacologie, Endocrinologie, Cancer, Technologies Médicales

SVE2 Biologie Cellulaire, Imagerie, Biologie Moléculaire, Biochimie, Génomique, Biologie Systémique, Développement, Biologie Structurale

Scientific domains

The general research aims of the unit are to develop a better understanding of the molecular and cellular mechanisms controlling platelet production and function, mainly in the context of thrombosis and haemostasis, although there is an increasing drive to investigate the roles of platelets in other pathophysiological processes, including inflammation and cancer, and to improve transfusion safety of blood products. The primary areas of investigation are inter-related and a major part of the work is devoted to transfusion research and medicine.

Unit workforce

Unit workforce	Number on 30/06/2016	Number on 01/01/2018
N1: Permanent professors and similar positions	0	0
N2: Permanent researchers from Institutions and similar positions	14.5	15
N3: Other permanent staff (technicians and administrative personnel)	14	14
N4: Other researchers (Postdoctoral students, visitors, etc.)	3	
N5: Emeritus	0	
N6: Other contractual staff (technicians and administrative personnel)	5	
N7: PhD students	5	
TOTAL N1 to N7	**41.5**	
Qualified research supervisors (HDR) or similar positions	6	

Unit record	From 01/01/2011 to 30/06/2016
PhD theses defended	7
Postdoctoral scientists having spent at least 12 months in the unit	7
Number of Research Supervisor Qualifications (HDR) obtained during the period	2

2 • Assessment of the unit

Global assessment of the unit

The overarching research objectives of UMR-949 are to better understand the cellular and molecular mechanisms regulating platelet production and function, and to improve transfusion safety of blood products. To achieve these objectives, the group is divided into two teams with distinct and overlapping research interests. The main scientific interests of team 1 are: (i) to determine the molecular mechanisms regulating platelet function, mainly in the context of thrombosis and haemostasis, but also in inflammation and cancer; (ii) to identify and validate novel anti-thrombotic drug targets found in platelets; and (iii) to devise safer ways of preparing blood products for transfusion into patients. The main scientific objectives of team 2 are: (i) to elucidate how platelet progenitors called MegaKaryocytes (MKs) develop; (ii) to determine the cellular and molecular mechanisms controlling proplatelet formation and platelet production; and (iii) to devise new and improved ways of culturing MKs outside of the body in order to produce platelets in sufficient quantity and activity that they can subsequently be transfused into patients, thus improving patient safety. There is added value in the two teams working together as evidenced by the number of shared outputs, which should continue.

Since the last evaluation in 2012, outputs of the unit as a whole, scientifically, academically and translationally have been outstanding. The unit has published several landmark studies in leading clinical-scientific journals in the fields of cardiovascular and experimental medicine, thrombosis and haemostasis, and transfusion medicine. The success and esteem with which the unit is regarded is evidenced by numerous invited and selected presentations at both national and international meetings and conferences, hosting of national and international meetings, as well as hosting of leading scientists and trainees from around the world.