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# Gènes HLA - Autoanticorps et microchimérisme dans la polyarthrite rhumatoïde et la sclérodermie

Rapport Hcéres

► **To cite this version:**

Rapport d'évaluation d'une entité de recherche. Gènes HLA - Autoanticorps et microchimérisme dans la polyarthrite rhumatoïde et la sclérodermie. 2017, Aix-Marseille université - AMU, Institut national de la santé et de la recherche médicale - INSERM. hceres-02030229

**HAL Id: hceres-02030229**

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Submitted on 20 Feb 2019

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# HCERES

High Council for the Evaluation of Research  
and Higher Education

Department of Research Evaluation

report on research unit:

Auto-Immune Arthritis

ARA

under the supervision of  
the following institutions:

Aix-Marseille Université

Institut National de la Santé Et de la Recherche  
Médicale - Inserm

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,<sup>1</sup>*

Michel Cosnard, president

*In the name of the experts committee,<sup>2</sup>*

Cem Gabay, chairman of the committee

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Under the decree N<sup>o</sup>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 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: Auto-Immune Arthritis

Unit acronym: ARA

Label requested: UMR

Current number: UMR\_S1097

Name of Director  
(2016-2017): Mr Jean ROUDIER

Name of Project Leader  
(2018-2022): Mr Jean ROUDIER

## Expert committee members

Chair: Mr Cem GABAY, Division of Rheumatology, Department of Internal Medicine Specialties, University Hospitals of Geneva, Geneva, Switzerland,

Experts: Ms Ariane BERDAL, Université Paris-Diderot (representative of the CSS INSERM)  
Ms Karine BERNARDEAU, Université de Nantes (representative of supporting personnel)  
Mr Marie-Christophe BOISSIER, Inserm (representative of the CNU)  
Mr Guy SERRE, Inserm, Hôpital Purpan, CHU de Toulouse

Scientific delegate representing the HCERES:  
Mr Kamel BENLAGHA

Representatives of supervising institutions and bodies:  
Mr Raymond BAZIN, Inserm  
Ms Aurélie PHILIPPE, Inserm  
Mr Marc SENTIS, AMU

Head of Doctoral School:  
Mr Philippe NAQUET, Doctoral School n° 52, « Sciences de la vie et de la santé »

## 1 • Introduction

### History and geographical location of the unit

The "autoimmune arthritis" research unit, currently INSERM UMRs 1097, was created at Medical Faculty La Timone in 1991 by Mr Jean ROUDIER to study the mechanisms leading to autoimmune arthritis such as rheumatoid arthritis (RA). The research unit had a long standing collaboration with the Rheumatology unit located at the Hospital La Conception, a clinical center specialized in the diagnosis and treatment of inflammatory arthritis led by Mr Jean ROUDIER. The Rheumatology unit is now settled at Sainte Marguerite Hospital and the "autoimmune arthritis" research unit at the nearby Luminy campus. When created, the laboratory was first labelled as university "Jeune Équipe" (1991). It then obtained INSERM unit status and funding (1998-2003: INSERM CRI/EMI 9904, 2004-2011: INSERM UMRs 639, 2012-2017: INSERM UMRs 1097).

### Management team

The research unit is headed by Mr Jean ROUDIER.

### HCERES nomenclature

SVE1\_LS6 Immunologie SVE1\_LS4 Physiopathologie.

### Scientific domains

Immunology and Rheumatology: Currently the research unit is working on two different projects on the mechanisms of autoimmune diseases, including (i) the association between genetic risk factors (HLA-DR alleles) and the development of autoantibodies in RA, and (ii) the role of foeto-maternal microchimerism in the development of autoimmune diseases.

Unit workforce

Unit workforce	Number on 30/06/2016	Number on 01/01/2018
N1: Permanent professors and similar positions	1 (0.3 FTE)	1 (0.3 FTE)
N2: Permanent researchers from Institutions and similar positions	5 (3.3 FTE))	5 (3.3 FTE)
N3: Other permanent staff (technicians and administrative personnel)	3	3
N4: Other researchers (Postdoctoral students, visitors, etc.)	1	
N5: Emeritus	0	
N6: Other contractual staff (technicians and administrative personnel)	0	
N7: PhD students	1	
<b>TOTAL N1 to N7</b>	<b>11(8.6 FTE)</b>	
Qualified research supervisors (HDR) or similar positions	5	

Unit record	From 01/01/2010 to 30/06/2016
PhD theses defended	4
Postdoctoral scientists having spent at least 12 months in the unit	2
Number of Research Supervisor Qualifications (HDR) obtained during the period	1

## 2 • Assessment of the unit

### Global assessment of the unit

The research unit is an excellent example of translational research with strong interactions between the Rheumatology clinical unit and the laboratory. It is noteworthy that the association between HLA-DR alleles and the development of autoantibodies are explored by the team since more than 20 years, the director of the unit being considered as a world expert in this field. The research is mostly focused in understanding the mechanisms leading to autoimmunity, more specifically, the association between genetic factors and autoantibody development and in the role of microchimerisms in autoimmunity. With a primary interest in rheumatoid arthritis, they have progressively also extended their research interests to other inflammatory pathological conditions such as scleroderma and systemic lupus erythematosus. The overall research questions focus on the association between the development of autoantibodies (including anti-citrullinated protein antibodies) and immunogenetic factors (HLA-DR alleles) in rheumatoid arthritis (RA), the detection of novel autoantibodies in RA and other autoimmune diseases, and the role of foetal-maternal microchimerism in the development of autoimmune diseases. The unit has published several original articles in Journals with a broad readership as well as leading Journal of the speciality such as *Ann Rheum Dis* and *Arthritis Rheumatol* during the last five years. As a reflection of its productivity in the field, the unit's director and his colleagues have been invited to give lectures in national and international meetings or institutions. The research activity of the unit led to communications in different lay Journals and medias. The discovery of novel autoantibodies led to patents, some of which have been licensed to commercial companies such as BIORAD for the development of diagnostic assays. The unit participates also to the training of young scientists and physicians.

The location of the research unit in *Luminy* nearby the clinical Rheumatology unit is excellent and has provided a unique access to clinical samples leading to cutting-edge translational research. In particular, the unit has been able to establish a large biobank including genomic DNA and serum samples from patients with RA and other rheumatic diseases that were well characterized by the clinical staff. The high quality of the clinical phenotyping of these patients strongly supports the quality of the biological findings. The research unit has different facilities including for cell cultures, biochemistry and molecular biology techniques, as well as a peptide production unit. The associated researcher and the "Établissement Français du Sang" provides free access to expensive HLA-DR allele annotation for paired RA and control individuals, facilitating projects on large human cohorts. The researchers have also access to core facilities in the site of *Luminy* such as the flow cytometry and animal facilities. The latter is located in the same building as the unit.

The size of the unit is relatively small and members work on different projects that are not completely related, although an effort has been made to link some projects together. The academic interactions between the unit and other research groups working in Immunology is limited. This point is a potential weakness for the training of PhD students and post-docs.