Research evaluation

FINAL RESUME ON THE RESEARCH UNIT

GlycoMEV - Glycobiology and plant extracellular matrix

UNDER THE SUPERVISION OF THE FOLLOWING INSTITUTIONS AND RESEARCH BODIES:

Université de Rouen

EVALUATION CAMPAIGN 2020-2021

GROUP B

Report published on November, 17 2021

High Council for evaluation of research and higher education

In the name of Hcéres[1]:	In the name of the experts committee[2]:
Mr Thierry Coulhon, President	Mr Alan Marchant, Chairman of the committee

Under the decree No.2014-1365 dated 14 November 2014,
[1] The president of Hcéres "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 experts committee". (Article 11, paragraph 2).

Tables in this document were filled with certified data submitted by the supervising body on behalf of the unit.

UNIT PRESENTATION

Unit name:
Glycobiology and plant extracellular matrix
Unit acronym:
GlycoMEV
Current label and N°:
EA 4358
ID RNSR:
200918431Z
Application type:
Renewal
Head of the unit (2020-2021):
Mr Jean-Claude Mollet
Project leader (2021-2025):
Mr Jean-Claude Mollet
Number of teams and/or themes:
3

EXPERTS COMMITTEE MEMBERS

Chair:	Mr Alan Marchant, University of Southampton, United Kingdom
Experts:	Mr Vincent Burlat, Université Paul Sabatier, Toulouse (representative of CNU) Mr Christophe D'hulst, Université de Lille (Vice-Président) Mr Herman Hofte, INRAE, Versailles Mr Emmanuel Maes, CNRS, Villeneuve-d'Ascq (supporting personnel) Ms Claire Remacle, University of Liege, Belgium

HCÉRES REPRESENTATIVE

Mr Steven Ball

REPRESENTATIVE OF SUPERVISING INSTITUTIONS AND BODIES

Mr Vincent Richard, Université de Rouen

INTRODUCTION

HISTORY AND GEOGRAPHICAL LOCATION OF THE UNIT

The Glycobiology and Plant Extracellular Matrix (GlycoMEV) research unit is located on the University of Rouen Mont St Aignan campus. It was formed in 2008 following the decision of the CNRS to withdraw support to plant science laboratories in the Haute-Normandie region. In 2017 the unit moved to a new building on the campus CURIB (Centre Universitaire de Recherche et d'Innovation en Biologie) with increased space together with the cell imaging and proteomics platforms, thus facilitating improved collaboration. In addition, GlycoMEV has access to greenhouses located one kilometer from the campus which are shared with the UniLaSalle, providing a facility for plant growth including dedicated space for transgenic plants and experiments involving plant-pathogen interactions.

RESEARCH ECOSYSTEM

The GlycoMEV research ecosystem has profoundly changed during the preceding period because of two major events: the fusion of two administrative regions to create the single région "Normandy" and the integration of the "University of Rouen Normandy" into the ComUE "Normandy University". To cope with this new environment, GlycoMEV joined the RIN (Norman Interest Network) and the SFR NORVEGE (FED4277). The laboratory became member of the Tremplin Carnot Institute "I2C" (Innovation Chimie Carnot) in 2017 and of the graduate school of research (EUR) "XL Chem" in 2019.

In 2017, GlycoMEV moved to a brand new building on the campus of the University of Rouen Normandy, providing ample laboratory space.

GlycoMEV has also actively participated in setting up and running two technical platforms: "PRIMACEN" for cell imaging and "PISSARO" for proteomic analysis. Both platforms are localized within the same building as GlycoMEV and are nationally recognized and financially supported by the GIS "IBiSA".

HCÉRES NOMENCLATURE AND THEMATICS OF THE UNIT

SVE Sciences du vivant et environnement
SVE1-1, SVE1-3, SVE2-1

MANAGEMENT TEAM

Head of unit: Mr Jean-Claude Mollet

Deputy Head of unit: Ms Muriel Bardor

UNIT WORKFORCE

Active staff	**Number 06/01/2020**	**Number 01/01/2022**
Full professors and similar positions	4	4
Assistant professors and similar positions	12	14
Full time research directors (Directeurs de recherche) and similar positions	0	0
Full time research associates (Chargés de recherche) and similar positions	0	0
Other scientists (“Conservateurs, cadres scientifiques des EPIC, fondations, industries, etc.")	0	0
High school teachers	1	1
Supporting personnel (ITAs, BIATSSs and others, notably of EPICs)	6.2	6.4
Permanent staff	**23.2**	**25.4**
Non-permanent professors and associate professors, including emeritus	0	

Non-permanent full time scientists, including emeritus, post-docs (except PhD students)	3	
PhD Students	6	
Non-permanent supporting personnel	3	
Non-permanent staff	**12**	
Total	**35.2**	

GLOBAL ASSESSMENT OF THE UNIT

GlycoMEV carries out research in the area of plant glycobiology and is organized in three topics which demonstrate an excellent degree of collaboration between them. The first topic "Root Extracellular Trap" proposed as a defense mechanism against soil pathogens is a novel area largely developed within the unit and has potential for future impact in the area of agriculture. The topic has reached high level of international recognition. The second topic utilizes novel Click-Chemistry labelling and chemical-based techniques in pollen tubes to study and manipulate the cellular and subcellular localization of pectin cell wall components. The topic reached slightly lower levels of international recognition. The third topic is using unicellular algae to study the molecular mechanisms of N-glycosylation and has displayed excellent interactions with external national and international partners. Interesting work that has the potential to be of high impact is being done using algae to express human monoclonal antibodies. Among the three research themes, this topic reached the highest levels of international recognition.

The GlycoMEV has a strong publication record in the period 2015-2020 with respect to both the number (81, 61 % as leader authors and 30 % from international collaborations) and quality of outputs in journals with a strong reputation (*Plant Journal, Plant Physiology and Plant Cell Environment*). However, there is potential to aspire to publish papers in higher reputation journals.

There is a good distribution of national and international funding sources providing resilience against changes. Total funding to GlycoMEV in the period 2015-2020 showed a substantial increase compared to 2010-2015 (5.170 vs 3.053 M€). However, funding from the national ANR source is low with just one grant in the five-year period (success rate of the unit of 4 %) which appears to be less than expected given the quality and the originality of the research as well as the national and international reputation of GlycoMEV. This international recognition is in particular illustrated by invitations to prestigious conferences (International Cell Wall Conference XIV (Greece) and XV (Cambridge), Gordon Conference USA).

GlycoMEV has developed strong interactions with the non-academic world in part because some of the research carried out in the unit is of economic interest with pharmaceutical companies (Medicago, Agilent, Samabriva, AlbaJuna therapeutics), agribusiness companies (CMI Roullier, Agrauxine by Lesaffre, Astredhor, RD3PT, Terre de Lin, Algaia), and cosmetics companies (Uriage, SILAB, BioEurope Solabia). GlycoMEV also created the start-up company AlgaTHERA (using algae to express human monoclonal antibodies) and the LabCom "Seasides". One could expect thus further development of commercial outputs and patents arising from these interactions. Clearly, the topic on algae checks all boxes of excellence.

The training through research is excellent as illustrated by the training of ten Master 1, twelve Master 2, three engineers' internships and 28 PhDs including 21 PhDs defended during the contract with a mean PhD duration of 3.5 years and a number of publications/PhD of 2.6. However, the mentoring capacity of the unit has room to be improved and the unit may pay attention to the drop in PhD students.

The training and support provided to all staff is excellent and this has created an excellent working environment. The five-year plan is largely a consolidation of existing programs and there is scope for further vision to be expressed. These plans propose mostly the continuation of solid research but often lack new approaches and ideas to remain at the forefront of rapidly evolving research fields. Concerns about staffing at all levels may limit the potential progress of GlycoMEV.

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