Research evaluation

EVALUATION REPORT OF THE UNIT

HEMATIM - Hématopoïèse et Immunologie

UNDER THE SUPERVISION OF THE FOLLOWING ESTABLISHMENTS AND ORGANISMS:

Université de Picardie Jules Verne

EVALUATION CAMPAIGN 2024-2025

GROUP E

Rapport publié le 18/03/2025

Haut Conseil de l'évaluation de la recherche et de l'enseignement supérieur

In the name of the expert committee :

Mr. Bertrand Arnulf, chairman of the committee

For the Hcéres :

Stéphane Le Bouler, acting president

In accordance with articles R. 114-15 and R. 114-10 of the Research Code, the evaluation reports drawn up by the expert committees are signed by the chairmen of these committees and countersigned by the president of Hcéres.

To make the document easier to read, the names used in this report to designate functions, professions or responsibilities (expert, researcher, teacher-researcher, professor, lecturer, engineer, technician, director, doctoral student, etc.) are used in a generic sense and have a neutral value.

This report is the result of the unit's evaluation by the expert committee, the composition of which is specified below. The appreciations it contains are the expression of the independent and collegial deliberation of this committee. The numbers in this report are the certified exact data extracted from the deposited files by the supervising body on behalf of the unit.

MEMBERS OF THE EXPERT COMMITTEE

Chairperson:	Mr. Bertrand Arnulf, Hôpital St Louis, Paris
Experts:	Ms Patricia Aguilar-Martinez, Centre hospitalier universitaire de Montpellier - CHU Montpellier (representative of the CNU) Ms Susan Chan, Institut national de la santé et de la recherche médicale – Inserm, Illkirch

HCÉRES REPRESENTATIVE

Marie José Stasia

REPRESENTATIVES OF SUPERVISING INSTITUTIONS AND BODIES

Mr. Denis Postel, Université Picardie Jules Verne
Ms Anne Langellier, CHU Amiens

CHARACTERISATION OF THE UNIT

- Name: Hématologie et Immunologie
- Acronym: Hematim
- Label and number: UR4666
- Composition of the executive team: Mr. Loïc Gaçon, Unit Director, Mr; Laurent Metzinger, Deputy Director

SCIENTIFIC PANELS OF THE UNIT

SVE3

THEMES OF THE UNIT

Hematim is a young research unit focused on the study of genetic, cellular and molecular mechanisms involved in differentiation processes and human diseases, with a central spine on blood and immune system.

HISTORIC AND GEOGRAPHICAL LOCATION OF THE UNIT

The unit was created in 2018, during the last Hcéres evaluation, under the direction of the actual director and is located in 'Centre Universitaire de Recherche en Santé' (CURS) building on the Hospital at Amiens. A profound restructuration of the previous unit has been performed due to new research thematic implantation in the link between historical interests in haematology and immunology.
Three main axes have been identified: Normal and pathological erythropoiesis (Team 1 ERYT), that was not present in the previous unit, Normal and pathological lymphopoiesis (Team 2, Transforc LP), Micro and Ln coding RNA and chronic renal failure including anaemia. In addition, an 'emerging' team has been identified at the end of 2022 (Team 4: Cardiomic) headed by two PI coming from the genetic department headed by the director of Hematim and the cardiology department. This last team will, of course, not be evaluated as the others.

RESEARCH ENVIRONMENT OF THE UNIT

The unit is located in the CHU near clinical departments and technical platforms including molecular analysis, sequencing and imaging. Department of genetic and cellular therapy is improving this environment.

UNIT WORKFORCE: in physical persons at 31/12/2023

Catégories de personnel	Effectifs
Professeurs et assimilés	6
Maîtres de conférences et assimilés	4
Directeurs de recherche et assimilés	0
Chargés de recherche et assimilés	0
Personnels d'appui à la recherche	6
Sous-total personnels permanents en activité	**16**
Enseignants-chercheurs et chercheurs non permanents et assimilés	2
Personnels d'appui non permanents	1
Post-doctorants	0
Doctorants	10
Sous-total personnels non permanents en activité	**13**
Total personnels	**29**

DISTRIBUTION OF THE UNIT'S PERMANENTS BY EMPLOYER: in physical persons at 31/12/2023. Non-tutorship employers are grouped under the heading 'others'.

Nom de l'employeur	EC	C	PAR
UPJV	8	0	3
AUTRES	2	0	3
Total personnels	**10**	**0**	**6**

GLOBAL ASSESSMENT

The Hematim unit is composed of three teams and an additional emerging team. Research axes of this full university unit are haematopoiesis including normal and pathological erythropoiesis (ERYT1), B cell and plasma cell disorder (Transforc), immune checkpoint in solid tumours and microRNA in renal failure and erythrocytosis and genomic of cardiopathies (Cardiomic). During the period of evaluation, the organisation of the unit was excellent with a good atmosphere and an appreciated dynamism of the director.
The assessement of the unit was overall very good to excellent, depending on each type of evaluation regarding organisation, attractiveness, scientifique production and social contribution.
Attractiveness in terms of recruitment (18 PhD thesis during the evaluation period), collaborations and funding (3 ANR including one as leader) was very good to excellent, mostly supported by Team1.
Scientific production was very good to excellent despite some heterogeneity between the different teams, team 1 being the most dynamic team that publishes the most in terms of quality and quantity.
Contribution of the unit at the social level is not really developed and should be taken in account since the unit has the ability to do it.
Main strengths are the quality of the leader, the quality of equipment and platforms allowing collaboration with the hospital and the new trajectory with the emerging dynamic team Cardiomic.
Main weaknesses are the lack of a full-time researcher and postdoctoral fellows with a majority of 'hospitalo-universitaire' (HU) members to work every day in the lab, the heterogeneity of the themes of research and a limited number of grants for some teams and projects.

DETAILED EVALUATION OF THE UNIT

A - CONSIDERATION OF THE RECOMMENDATIONS IN THE PREVIOUS REPORT

This point is difficult to evaluate because the unit was restructured during the previous Hcéres evaluation.

'To maintain focusing his activities on not more than two research programs until he achieves his structuration.' Recommendations regarding the new director has been taken into account.

'The unit needs to clarify its strategy for postdoc recruitment, and to attract more basic science PhD students. The team should attract students and recruit postdocs, which is mandatory for research achievements.' Recommendations about recruitment strategy still need to be considered in all the unit especially team 2 and 3. However, the recent attachment of the emergent team 4 is in line recommendation about technical platforms research projects.

B - EVALUATION AREAS

EVALUATION AREA 1: PROFILE, RESOURCES AND ORGANISATION OF THE UNIT

Assessment on the scientific objectives of the unit

Scientific objectives of the unit are focused on normal and pathological haematopoiesis, tumour immunology and recently cardiogenetics. These objectives are in adequacy with unit organisation consisting of four different teams ERYT1, ARIE, Transforc and the emerging Cardiomic.

Assessment on the unit's resources

Substantial funding (844 K€) has been obtained from national institutions such as the ANR (4 of which one as a sponsor, i.e. 475 K€), the Fondation de France (170 K€), an industrial contract with the Brothier and Erypharm pharmaceutical laboratories (265 K€), and the HDF Region (181 K€). A significant proportion of funding is provided by contracts offered by charities (261 K€) and by calls for tender from CHUAP (79 K€), DGHOS (244 K€) and GIRCI Emergence (40 K€). The UPJV supports the unit to the tune of 18 K€ per year.
Attractiveness is very good to excellent, with 17 PhDs supervised during the period (including 11 in the ERYT team). This contrasts with a few full-time technicians, engineers and full-time researchers in the unit.

Assessment on the functioning of the unit

Location of the unit allows interaction both with clinical departments and technical platforms. The director of the unit plays a major role in perceived the general good atmosphere and balance between different teams, despite team ERYT1 being the most dynamic. Therefore, the organisation of the unit is excellent, mostly due to human and scientific dynamism of the unit director.

1/ The unit has set itself relevant scientific objectives.

Strengths and possibilities linked to the context

Location of the unit allows interaction both with clinical departments and technical platforms. Proximity of members of the unit, university, hospital and platforms is a real strength. Each team of the unit have a weekly

lab meeting. General lab meeting occurs every three or four months. Administrative resources are shared between different teams.

Weaknesses and risks linked to the context

A potential limitation is the number of HU (14 HU members) contrasting with full-time PAR, scientific students and researchers.
A substantial part of funding (5%) is required for platform maintenance.

2/ The unit has resources that are suited to its activity profile and research environment and mobilises them.

Strengths and possibilities linked to the context

The unit has a national (Institut Carnot Opale) and international reputation, with participation in international networks (European consortium CRICK). Some PIs are invited to prestigious international congresses (American Society of Haematology Annual and European Hematology Association meetings).
Strengths are the quality of the team leader and the success of the ERYT team development. This project is very well organised and remarkable work has been done. It may lead to a real advance in that field with a great potential of medical valorisation.
In addition, the technical support and platform are very important. Clinical departments are also very important in a translational program. Again, the expertise of the research axes is also very important. The resources are very good to excellent in terms of funding (844 K€) and recruitment of HU (14).

Weaknesses and risks linked to the context

Weaknesses are the imbalance between HU, H and researcher and the poor number of 'research' PhD and postdocs in the lab with an uncertain quality of teaching for students.
Despite participation in large funding (844K€ for the period), grants may also be limiting in the whole unit, except for ERYT team (imbalance between teams).
The lack of interaction and collaboration between teams may also be limiting.

3/ The unit's practices comply with the rules and directives laid down by its supervisory bodies in terms of human resources management, safety, environment, ethical protocols and protection of data and scientific heritage.

Strengths and possibilities linked to the context

In terms of scientific heritage, the unit comes from the high quality of past research in haematology and immunology. The recent axe on erythropoiesis has been very well developed by the leader of team 1, which is the director of the unit. No signal for defects in safety rules in the general functioning of the unit has been detected.

Weaknesses and risks linked to the context

The imbalance between HU and researchers make that few members are present permanently in the lab and may impair the project development.

EVALUATION AREA 2: ATTRACTIVENESS

Assessment on the attractiveness of the unit

The unit has developed collaboration and is involved in regional, national and European grants and network especially for the ERYT team but also national institute CARNOT OPALE for team 2 and European consort for team 3 (CRICK). The attractiveness of the unit is very good to excellent despite some heterogeneity between the teams. Main unit director and team leaders have responsibilities in national societies and cooperative groups. Unit Members are regularly involved in oral communications in national and international congresses.

Strengths and possibilities linked to the context for the four references above

The unit has a very good staff support policy: nine members have an HDR. Sixteen PhD theses have been or are currently ongoing during the evaluation period and two have been cancelled. Four research engineers, two PH and one MCU-PH joined the unit between 2018 and 2023. During the evaluation period, nine students have obtained their PhD, two obtained their HDR. Two postdocs have been granted.

The unit has a European collaboration.

Weaknesses and risks linked to the context for the four references above

The unit has European collaboration but not as a leader. There is an imbalance between the teams of the unit, team ERYT1 being the most active in terms of resources, attractiveness and scientific production.

EVALUATION AREA 3: SCIENTIFIC PRODUCTION

Assessment on the scientific production of the unit

The level of scientific production has been evaluated very good to excellent, again with respect to a substantial heterogeneity among the different teams. It is a direct reflection of the Chuap/UPJV dual affiliation of the majority of our teaching and research staff. It combines fundamental and translational research with historically strong clinical research in Haematology and Immunology. The total number of publications is 362, and has been rising steadily since 2019. 46% of the publications were signed as first, second, penultimate or last author, and for which 39 are published in leading journals in the haematology speciality (Blood, Am J Hematol, Blood Adv, Haematologica...). The other publications reflect work carried out as part of multi-centre trials promoted by institutions or industry, in which Chuap is the investigating centre and not the sponsor. The distinction of 'scientific' publications from 'clinical' ones is not so easy regarding the translational axes of the unit.

Strengths and possibilities linked to the context for the three references above

Strengths are the quality of the team leader and the success of the ERYT team development.

The project is very well organised and remarkable work has been done in this unit. It may lead to a real advance in that field with a great potential of medical valorisation.

Contribution of the emerging team 4 Cardiomic is already visible and will certainly help to participate in this high level of scientific production.

Weaknesses and risks linked to the context for the three references above

One of the weaknesses is the imbalance between HU, H and researcher and the poor number of 'research' PhDs and postdocs in the lab with an uncertain quality of teaching for students.
Despite participation in large funding, grants may also be limiting in the whole unit, except for ERYT team.
The lack of interaction and collaboration with all teams may also be limiting including the way of funding distribution.

EVALUATION AREA 4: CONTRIBUTION OF RESEARCH ACTIVITIES TO SOCIETY

Assessment on the inclusion of the unit's research in society

The unit has few activities with links to society, as this activity is considered very good. The ARY team does take part in the Fête de la Sciences, whose PI is the founding president of the Association pour la Sensibilisation au Don de Moelle Osseuse (ASDMO). Otherwise, little activity is noted in terms of patents and popularisation. It should be noted that the ERYT team is financially supported by two pharmaceutical companies, Brothier and Erypharm.

Strengths and possibilities linked to the context for the three references above

The unit has the opportunity and an effective program to incorporate students having a HU career. The unit has developed a collaboration with national and international centres.
Proximity with clinical physicians provides an opportunity to build cohorts and translational research.

Weaknesses and risks linked to the context for the three references above

The members of the unit should consider valorisation of the results. For example, some results obtained in team 1 (ERYT1) but also in team 3 (ARIE) could have led to identification of prognostic factors or other.
Transmission of the results toward patient's associations and/or large public should also be considered.
The very good results obtained in the team1 and the lead of a competence centre for hereditary cardiopathies (team 4) may also help to develop those social competence.

ANALYSIS OF THE UNIT'S TRAJECTORY

All teams of the future project have limited axes of research and look adapted to both scientific history of the unit and the environment.
Team 1 will continue the remarkable work performed since 2018 focused on normal erythropoiesis and the role of Piezo 1. This team will study both acquired and inherited sideroblastic anaemia.
Team 2 will be focused on plasma cell, myeloma, Waldenstrom Macroglobulinaemia, microenvironment and cancer immunotherapy.
Team 3 will be focused on Ln coding RNA and chronic renal failure and graft alloreactivity, and team 4 will analyse genomic and rare disease cardiomyopathy.
Some axes are subject to high competition (microenvironment in B cell malignancies).
The interaction between the teams of the unit seems modest in terms of projects but they will certainly develop appropriated and shared technical tools and common platforms.
Again, given the HU profile of the unit it will be difficult to achieve correctly all the research programs without recruiting more full-time researchers and/or postdocs.

RECOMMENDATIONS TO THE UNIT

Recommendations regarding the Evaluation Area 1: Profile, Resources and Organisation of the Unit

There is a need for new tenured researcher in this unit mainly made of HU.
Parity in terms of the team's leader and responsibilities should also be taken into account in the future.
Given the thematic diversity of the unit and the limited number of full-time researchers or postdocs, it could also be useful to focus research subjects on the main axes of the unit.

Recommendations regarding the Evaluation Area 2: Attractiveness

Members at the head of each team should have a strategy to recruit researchers such as a postdoc to ensure suitability in research programs and people standing permanently in the lab.
The valorisation of scientific production including patents could also be important to improve the unit's attractiveness.

Recommendations regarding Evaluation Area 3: Scientific Production

Ensure a good balance between fundamental and clinical scientific production.
Scientific review, national and international collaborations could help improve the quality of production, especially for teams 2–4.

Recommendations regarding Evaluation Area 4: Contribution of Research Activities to Society

It will be helpful to enhance the contribution of the unit's research within the society, including patient's support groups, ludic scientific events or review for popularisation.

TEAM-BY-TEAM OR THEME ASSESSMENT

Team 1: ERYT

Name of the supervisor: Mr. Loïc Garçon and Ms. Lydie Da Costa

THEMES OF THE TEAM

Team 1, named 'Normal and pathological erythropoiesis, acronym (ERYT), has four main axes: 1/Piezo1 and erythropoiesis, 2/GPX4, ferroptosis and erythropoiesis, 3/HDAC6 and erythropoiesis, 4/Diamond-Blackfan Anemia. The team was created in 2017 (at the same time as the Hematim Unit).

CONSIDERATION OF THE RECOMMENDATIONS OF THE PREVIOUS REPORT

This is the first retroactive evaluation for this specific team (1) and its new team leader. The previous evaluation of the Unit Hematim recommended that once the future director of the team has structured his activities in Amiens, he should limit involvement in no more than two research programs until the structuration is achieved. This recommendation has been taken into account as team leader is responsible for axis 1 (Piezo1), while the other axes have been developed either in collaboration with or exclusively by other team members.

WORKFORCE OF THE TEAM: in physical persons at 31/12/2023

Catégories de personnel	Effectifs
Professeurs et assimilés	2
Maîtres de conférences et assimilés	2
Directeurs de recherche et assimilés	0
Chargés de recherche et assimilés	0
Personnels d'appui à la recherche	4
Sous-total personnels permanents en activité	**8**
Enseignants-chercheurs et chercheurs non permanents et assimilés	1
Personnels d'appui non permanents	1
Post-doctorants	0
Doctorants	7
Sous-total personnels non permanents en activité	**9**
Total personnels	**17**

EVALUATION

Overall assessment of the team

The visibility of the team was very good, with presentations at both, international (8) and national (8) conferences (notably ASH educational program, EHA) and two scientific reviews in top-ranked journals of the speciality. Scientific production was excellent, with at least seven papers published in renowned journals (Blood, Am J Haematology). Training was very good to excellent relative to the size of the team, with twelve PhD students trained (5 PhDs sustained, 5 in progress, 2 abandoned for personal reasons), with first author papers. Funding was significant, including participation in three ANRS. As for other teams of the unit, the main constraint to expand the research activity was the time dedicated to research for all the permanent staff, who held primarily hospital and university positions. However, despite these constraints, the overall assets look quite impressive.

Strengths and possibilities linked to the context

Team 1's strength stems from the expertise of the team leaders who are both nationally and internationally recognised experts in their respective fields (stomatocytosis and Blackfan Diamond anaemia). This scientific expertise is further reinforced by the crosslink between clinical and care research activities. Other team members are pursuing similar avenues of expertise in the other themes of the team. As with other Hematim teams, the reports emphasised the ongoing connections between the unit and hospital departments (geographical, technological and thematic). This proximity also provides access to a range of high-tech instruments available through the hospital settings (imaging, cell sorting, high-throughput sequencing).
It is noteworthy that team 1 is involved in three ANRs as partners (Riboeurope, Ropkip) or leader (Epiox), which demonstrates their ability to secure high-quality research grants.
The team has also demonstrated its attractiveness for the period evaluated (9 PhD students, 5 theses) despite a limited number of HDRs in the unit.
During the evaluation time period, the team has produced several high-level publications. Examples of publications in journals leaders in the field:
Blood. 2020 Aug 6;136 (6):698–714; Blood. May 26;139 (21):3111–3126, 2022; N Engl J Med. Jun 21. 2023
The team has also published important reviews, such as: Blood, Sep10;136 (11):1262–1273, 2020; Am J Hematol. 2021 Aug 1;96(8):1017–1026.
Team members were invited speaker, in some prestigious international and national conferences. For example, one co-leader of the team was invited as a speaker at the Gordon Conference Red Cell, the EHA and ASH congresses and various French conferences. The team leader and director of the unit was invited as a speaker at the ERCS and EHA congresses and at various French conferences.
Team members (leader) have also scientific responsibilities. For example, the team leader is the General Secretary of the French Society of Haematology (2018–2021) and the President of the French Red Blood Cell and Iron Club (2021).

Weaknesses and risks linked to the context

The team's challenges are primarily due to its current composition, which includes a limited number of permanent staff members. Consequently, the team's scientific output is primarily derived from the work of numerous students, predominantly at the PhD and M2 levels. This necessitates meticulous supervision. It is challenging for an unlabelled unit of this size to respond to large-scale calls for proposals. Furthermore, as with the other teams within the unit, research time is constrained by hospital activity for HUs.
It is worth noting that despite the challenges the unit has faced in terms of personnel and funding. It has demonstrated its ability to produce high-quality publications and oversee a significant number of students and PhD candidates.

Analysis of the team's trajectory

This team continues on the theme of normal and pathological erythropoiesis. It will focus on the mechanisms associated with dyserythropoiesis whether constitutional (xerocytosis, sideroblastic anaemias) or acquired (myelodysplastic syndromes). Axis 1: Piezo1 and erythropoiesis, axis 2: erythropoiesis in congenital and acquired sideroblastic anaemia.
In terms of staff members, one of the co-leaders of the team will leave the unit (change of academic assignment) and a future PUPH, HDR will arrive. Despite this departure, the team will be strengthened by two new HDRs: one PU-PH (nominated in 2025) and a HU who will pass his HDR in 2024. Concerning the team members, one obstacle is the number of PAR, (only 1 IR), which is not sufficient in view of the resource of researchers.
Funding for the different axis is already obtained.
Overall, the team trajectory seems to be adapted to the team's expertise and human resources.

RECOMMENDATIONS TO THE TEAM

The committee encourages the team to to attract statutory researchers and/or recruit engineers.
Moreover, whenever possible, to try to make more links between the different team axes.

Team 2: Transforc-BP

Name of the supervisors: Mr. Jean-Pierre Marolleau, Ms. Brigitte Gubler and Mr. Vincent Goeb

THEMES OF THE TEAM

Team 2, named 'Mécanismes cellulaires et moléculaires de la transformation des cellules B 'Transforc-BP' is focused on translational research to identify new therapeutic targets in haematological malignancies and immune disorder. This team has 3 main axes: 1/Ascorbic acid and CLL, 2/Homotypic interactions in CLL 3/in vitro lymphoid differentiation model. The team was restructured in 2016 and 2018 and appears now as integration of the previous 'Immunology' and 'malignant haematology' as team 2 in the Hematim Unit.

CONSIDERATION OF THE RECOMMENDATIONS OF THE PREVIOUS REPORT

Many of the recommendations following previous evaluation of the Unit Hematim addressed subjects that have been discarded in the new one. The team is now focused on a more restricted theme of research.

WORKFORCE OF THE TEAM: in physical persons at 31/12/2023

Catégories de personnel	Effectifs
Professeurs et assimilés	3
Maîtres de conférences et assimilés	0
Directeurs de recherche et assimilés	0
Chargés de recherche et assimilés	0
Personnels d'appui à la recherche	2
Sous-total personnels permanents en activité	**5**
Enseignants-chercheurs et chercheurs non permanents et assimilés	0
Personnels d'appui non permanents	0
Post-doctorants	0
Doctorants	1
Sous-total personnels non permanents en activité	**1**
Total personnels	**6**

EVALUATION

Overall assessment of the team

This team Transforc has a very good to excellent visibility since many experts in the field as leader. A very good to excellent scientific production has been noted despite an imbalance between clinical and research paper. Full-time researcher, postdocs are lacking in contrast to the HU members. The main constraint to expand the research activity was the time dedicated to research for all the permanent staff, who held primarily hospital and university positions. Funding was moderate with 252K euros obtained in the past five years. Some new orientations are submitted to competition and robust collaborations are needed to succeed.

Strengths and possibilities linked to the context

Team 2's strength is the national and international recognised expertise of the team leaders in their respective fields (plasma cell malignancies, Waldenström macroglobulinaemia and immunology). The diversity of capacities and interaction between the research team and the clinical department (Haematology, Immunology) and the already set up technical platforms are very good points.
In this line some national and international collaborations have been performed with IGR, Inserm U1170, Villejuif; IGR, CNRS UMR9019, Villejuif; AP-HP, Inserm U1138, Paris; and the NYULH, NYC.
Members of team 2 obtained some research grants (including Fondation de France (2018–2020).
A large clinical and scientific production was observed in the 2018–2023 period.
The team has published a huge number of clinical papers (65) including ten in collaboration with other teams of the unit. Regarding scientific publications, sixteen were produced by the team during the evaluated period including seven with team members in first or last author in excellent international journals and twelve in collaboration with the other teams of the unit.
Team members were involved in four teaching books and/or reviews.
Team members were invited speaker, in some prestigious international (EHA and ASH congresses and various French conferences).

The team has received one PhD students between 2017–2023; one thesis (but 1 ongoing); four Masters 2.; eight M1s. Students have made publications.
One of the leaders of the team is an expert for Ligue Contre le Cancer and regional funding organisms (GIRCI-Est) They got some national and regional research contracts: one national grant (FDF) and three regional grants (CHU, GIRCI) were obtained for a total funding of 240 K€.
Valorisation (contracts with the industry, activities for the public) does not appear clearly in the document.

Weaknesses and risks linked to the context

In line with the other teams within the unit, there is not so much full-time researcher and research time is constrained by hospital activity for HUs.
Up to now there was little academic coaching of students and postdocs by the university, in contrast to the CHU. Some new axes are very competitive one (microenvironment studies).

Analysis of the team's trajectory

A number of previous axes have been discarded. The team is now focused on plasma cell differentiation, multiple myeloma and Waldentström macroglobulinaemia with specific immunologic axes regarding bispecific antibodies and autoimmune complications of ICI. Given the expertise in those fields, the team trajectory seems to be adapted to the team's expertise. However, some projects are very competitive, including microenvironment studies.
Regarding human resources, there are four staff HU members including the three leaders of the team but few researchers among the members of the team (2 technicians, 1 PhD engineer, 1 PhD student). Those ambitious projects need to be present at the research laboratory level.
Funding of past projects have been performed but represents very few for the evaluated period.
It does not appear clearly for the future team starting now.

RECOMMENDATIONS TO THE TEAM

The committee proposes to anticipate a weakness for the future and retirement of two leaders of this team. A clear strategy for new recruitment should be performed.
The committee suggests that the team try to pay attention to the world competition, especially for some thematic (microenvironment studies). This should be anticipated by the search for national and international collaboration and for new collaboration including for funding.
The committee encourages the team to consider a better adequation between funding and project ambition.
An effort of communication for a social impact of research should be performed (popularisation publications, patients' association).

Team 3: ARIE

Name of the supervisor: Mr Laurent Metzinger and Mr. Nicolas Guillaume

THEMES OF THE TEAM

The team studies two topics: 1) the potential use of noncoding RNAs as markers of chronic renal failure; and 2) the role of humoral alloreactivity in kidney transplantation.

CONSIDERATION OF THE RECOMMENDATIONS OF THE PREVIOUS REPORT

In the previous report, the project of this team was to study the role of natural killer cells in haematopoietic stem cell transplantation. The recommendation was that flow cytometry as a technique was not sufficient to generate mechanistic insights, and that a full-time postdoc was needed to work on the project.

This project seems to have been dropped.

WORKFORCE OF THE TEAM: in physical persons at 31/12/2023

Catégories de personnel	Effectifs
Professeurs et assimilés	1
Maîtres de conférences et assimilés	2
Directeurs de recherche et assimilés	0
Chargés de recherche et assimilés	0
Personnels d'appui à la recherche	0
Sous-total personnels permanents en activité	**3**
Enseignants-chercheurs et chercheurs non permanents et assimilés	0
Personnels d'appui non permanents	0
Post-doctorants	0
Doctorants	1
Sous-total personnels non permanents en activité	**1**
Total personnels	**4**

EVALUATION

Overall assessment of the team

The team was good to very good in visibility, with presentations in national (4) and international conferences, and an editorship in PloS One. Scientific production was very good, with seven papers published in speciality journals (Bone, Int J Mol Sci, Cell Signal, Front Med, HLA, Mol Immunol, Transpl Immunol). Training was very good to excellent, with three PhD students trained, all with first author papers. Funding was modest, with ~75K euros obtained from local sources. One of the team leaders was the founding president of l'Association pour la Sensibilisation au Don de Moelle Osseuse (ASDMO).

Strengths and possibilities linked to the context

The team's projects were semi-independent. The first axis was directed by the first team leader, and looked at the potential of micro- and lncRNAs as biomarkers, and perhaps future therapeutic targets, in chronic kidney

disease. The second axis was directed by the second team leader, and addressed the mechanisms behind donor-specific antibodies (DSA) of the patient against donor HLA proteins of kidney grafts after transplantation.

The team is composed of three professors/assistant professors, where one has permission to perform full-time research without teaching and/or hospital responsibilities. One technical engineer arrived in 2023. There have been one-two PhD students at a time during the evaluation period.

Visibility was good to very good. The first team leader was invited to international conferences and was an organiser of the Pharmaceutics conference (2022 and 2023), a partner of a European consortium (CRICK) on chronic kidney disease, and editor at PLOS One. The second team leader was part of the French HLA network, and has given talks around France (4) and in Rabat (1).

Training was very good to excellent. The team trained three PhD students with a 4th one ongoing. All three former students published as the first author. Impressively, three of the four students were awarded competitive PhD fellowships which attested to their solid training by the team.

Scientific production was very good, particularly with the difficulty in obtaining funding although the team secured a 10k€ fund from the Société Française de Néphrologie, Dialyse et Transplantation. The team published seven papers in speciality journals (Bone, Int J Mol Sci, Cell Signal, Front Med, HLA, Mol Immunol, Transpl Immunol), with another paper in press (HLA 2024), as well as one review (Int J Mol Sci). Team members were also co-authors of a paper published on behalf of the European Uremic Toxin Work Group-EUTox (Sci Rep).

Non-academic activities were very good. The team gave general public talks to schools (3) and charities. The second team leader was the founding president of "l'Association pour la Sensibilisation au Don de Moelle Osseuse (ASDMO)".

Weaknesses and risks linked to the context

Funding was modest. The team secured ~75K euros for the current period from the Amiens Hospital (PHRC), the French Society of Histocompatibility and Immunogenicity (SFHI), and industry exploratory grants (Vifor Pharma, Zurich).

Analysis of the team's trajectory

The team has proposed an ambitious continuation of the current projects, to study: 1) the role of lncRNAs in anaemia associated with chronic kidney disease; 2) the role of extracellular vesicles produced by the endothelium as vectors of graft rejection. These projects will use in vitro and in vivo approaches, patient samples, cellular and molecular studies.

To be feasible, the team will have to significantly increase funding and manpower.

RECOMMENDATIONS TO THE TEAM

To increase the chances of funding, the team may consider targeting even more patient associations and research networks, as the larger ANR type of funding seems out of reach at this time. The committee also encourage the team to consider reorienting its projects toward the principal themes of the unit in order to increase intra-unit collaborations and funding chances.

Team 4: CardiomicS

Name of the supervisor: Mr. Kubala and Mr. G. Jedraszak

THEMES OF THE TEAM

Emerging team coming from the reorganisation of the genetic department fused with cytogenetic department under the lead of the unit director and is focused on rare genomic disease with cardiac expression. The project was started in 2018 and two major axes are presented:
Axe 1: 'génomique des maladies génétiques rares à expression cardiaque et musculaire': CARD-SEQ led by a MCU-PH – génétique, a MCU-PH - cardiologue, and a PU-PH - cardiologue. Research is based on 'reverse genotyping' and genomic approach. Axe 2: Post genomic of cardiac diseases: Transcard led by a MCU-PH.

CONSIDERATION OF THE RECOMMENDATIONS OF THE PREVIOUS REPORT

Since Cardiomic team is an emerging part of the unit it was not present during the previous report.

WORKFORCE OF THE TEAM: in physical persons at 31/12/2023

Catégories de personnel	Effectifs
Professeurs et assimilés	0
Maîtres de conférences et assimilés	0
Directeurs de recherche et assimilés	0
Chargés de recherche et assimilés	0
Personnels d'appui à la recherche	0
Sous-total personnels permanents en activité	**0**
Enseignants-chercheurs et chercheurs non permanents et assimilés	1
Personnels d'appui non permanents	0
Post-doctorants	0
Doctorants	1
Sous-total personnels non permanents en activité	**2**
Total personnels	**2**

EVALUATION

Overall assessment of the team

As an emerging team Cardiomic is difficult to be evaluated as the other teams of the unit. However, organisation of the team appears good to very good despite the imbalance between HUs and full-time researchers. Attractiveness is good with two Master 2 and one PhD thesis performed and two PhDs ongoing. Scientific production appears also very good: projects were started in 2018 and eight publications have been already performed between 2021 and 2024. Few contributions of research activity on social events have been performed until now but have to be increased.

Strengths and possibilities linked to the context

A major strength is the availability of technical platform for genomic analysis and the proximity of genetic department of the hospital. Clinical cohort of patients and rare disease competence centre for rare

cardiological diseases is also important. The leader of the team is an expert in genetic cardiac disease. A total of 260 K€ of grants have been obtained since the beginning of the project.

Weaknesses and risks linked to the context

As noted previously there are few full-time researchers and engineers contrasting with a large number of HUs also having clinical activities. In addition, axes of research are very competitive and far from the main topic of the unit. Genomic and post genomic analysis are source of a huge volume of data requiring a robust bio informatic department.

Analysis of the team's trajectory

The trajectory of the team seems to be well organised. It will be structured around the two main axes; axis 1 on rare cardiomyopathy and a future HU (to be recruited) will explore a second axis which is the links between cardiac muscle damage and peripheral muscle damage, a recent emerging link in the literature concerning these rare diseases.
Team members will take advantage of the genomic platform already shared with the other team of the Hematim Unit.
Previous publications and strong scientific interest of the research projects will certainly lead to grant availability.

RECOMMENDATIONS TO THE TEAM

As in other teams of the unit, the committee encourages the team to perform a strategy to recruit a full-time researcher and postdocs.

The committee suggests that the projects of research be focused on original thematic able to reinforce the attractiveness of the team and compatible with the general topic of the unit.

A link with the everyday living of the unit will also enrich unit's organisation.

CONDUCT OF THE INTERVIEWS

Date

Start: 10 octobre 2024 à 08h00

End: 10 octobre 2024 à 17h30

Interview conducted : online

INTERVIEW SCHEDULE

8:00 - 8:15 Testing Zoom connections

8:15 - 8:30 Closed session Expert Committee (EC) – Scientific Officer (SO)

Assessment of the Unit, Scientific Plenary session

8:30 - 8:40 Presentation of the EC to the staff members by SO

8:40 - 9:15 Presentation of the unit by Loïc Garçon (25 + 10 min questions)
Attending: EC, SO, all the unit members

Presentation of the teams

9:15 - 9:45 Érythropoïèse Normale et Pathologique ERYT Team – Loïc Garçon
(15 min presentation + 10 min questions)
Attending: Team members, EC, SO, director of the Unit
+5′ private discussion with the PI; attending: EC+SO

9:45 - 10:15 Mécanismes cellulaires et moléculaires de la transformation des cellules B et des plasmocytes TRANSFORC team – H. Ghamlouch and J. P. Marolleau
(15 min presentation + 10 min questions)
Attending: Team members, EC, SO, director of Unit
+5′ private discussion with the PI; attending: EC+SO

10:15-10:45 ARN non codants, Immunologie et Erythropoïèse ARIE team – L. Metzinger
(15 min presentation + 10 min questions)
Attending: Team members, EC, SO, director of Unit
+5′ private discussion with the PI; attending: EC+SO

10:45-11:05 Génétique des cardiopathies congénitales CARDIOMICS team – M. Kubala and G. Jedraszak
(10 min presentation + 5 min questions)
Attending: Team members, EC, SO, director of Unit
+5′ private discussion with the PI; attending: EC+SO

11:05-11:45 Break – Closed session with EC and SO

11:45-12:15 Closed session with researchers and professors
Attending: Researchers except group leaders, EC, SO

12:15-1:30 p.m. Lunch Break

1:30 p.m.-2 p.m. Closed session with thesis students and postdocs
Attending: PhD students and postdocs, EC, SO

2 p.m.-2:45 p.m. Closed session with technical and administrative personnel
Attending: Technicians, Engineers, Administrative staff, EC, SO

2:45 p.m.-3:30 p.m. Break – Closed session with EC and SO

3:30 p.m.–16:00 Closed session with the representatives of supervising bodies
Attending: expert committee, representatives of Institutions, SO

4 p.m. – 4:30 p.m. Closed session with the head of the unit
Attending: Unit Direction, expert committee, SO

4:30 p.m.–17:30 Meeting of the Committee – Finalization of the report (closed hearing)

PARTICULAR POINT TO BE MENTIONED

N/A

GENERAL OBSERVATIONS OF THE SUPERVISOR

UNIVERSITÉ de Picardie Jules Verne

Amiens, le 7 février 2025

Monsieur le Président

HCERES
2 Rue Albert Einstein
75013 PARIS

Direction de la Recherche
1, Chemin du Thil
80025 AMIENS Cedex 1
☎ 03-22-82-74-55
e-mail : drv@u-picardie.fr

Objet : Réponse officielle évaluation HEMATIM

Vos Réf : **DER-PUR260025007 - HEMATIM - Hématopoïèse et immunologie**

Monsieur le Président,

Je tiens tout d'abord au nom de l'Université de Picardie Jules Verne et en particulier au nom du Directeur et des membres de l'unité de recherche **HEMATIM - Hématopoïèse et immunologie** à vous remercier pour la qualité du rapport d'évaluation ainsi que pour les échanges constructifs que nous avons pu avoir avec le comité lors de la visite du 10 octobre 2024.

En réponse aux points d'amélioration soulignés par le comité, le Directeur et les membres de l'unité souhaitent apporter les informations complémentaires suivantes :

Les 3 enseignants-chercheurs de l'équipe 3 assurent tous un service d'enseignement statutaire, aucun d'entre eux n'est autorisé à effectuer un temps plein pour de la recherche.

Je vous prie d'agréer, Monsieur le Président, l'expression de mes sincères salutations.

Le Président de l'Université de Picardie Jules Verne

UNIVERSITÉ DE PICARDIE JULES VERNE – RÉPUBLIQUE FRANÇAISE – AMIENS

Denis POSTEL

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19 rue Poissonnière
75002 Paris, France
+33 1 89 97 44 00