Research evaluation

EVALUATION REPORT OF THE UNIT

RNMCD - Récepteurs nucléaires, maladies métaboliques et cardiovasculaires

UNDER THE SUPERVISION OF THE FOLLOWING ESTABLISHMENTS AND ORGANISMS:

Université de Lille,
Centre hospitalier régional et universitaire de Lille - CHRU Lille,
Institut national de la santé et de la recherche médicale - Inserm,
Institut Pasteur de Lille

EVALUATION CAMPAIGN 2024-2025
GROUP E

Rapport publié le 30/01/2025

High Council for evaluation of research and highter education

In the name of the expert committee :

Ingrid Jeanette Fleming, chairwoman 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:	Ms Ingrid Jeanette Fleming, Goethe University Frankfurt, Germany
Experts:	Ms Nuria Amigo, University Rovira i Virgili, Spain Mr Bertrand Liagre, université de Limoges (representative of the CNU) Ms Sophie Novault, Institut Pasteur, Paris (representative of the supporting personnel) Ms Emmanuelle Reboul, Aix-Marseille Université – Amu (representative of CSS Inserm) Mr Iannis Talianidis, Institute of Molecular Biology and Biotechnology, Greece

HCÉRES REPRESENTATIVE

Ms Francesca Palladino

REPRESENTATIVES OF SUPERVISING INSTITUTIONS AND BODIES

Mr Olivier Colot, Université de Lille
Mr Didier Bonneau, Institut Pasteur de Lille
Mr Frédéric Boiron, CHU de Lille
Ms Chantal Boulanger, Inserm

CHARACTERISATION OF THE UNIT

- Name: "Nuclear receptors, metabolic and cardiovascular diseases"
- Acronym: RNMCD
- Label and number: UMR1011
- Composition of the executive team: Mr Bart Staels, units' director

SCIENTIFIC PANELS OF THE UNIT

Scientific panels (in the Hcéres classification) by descending order of importance:
Panel 1 - SVE6: Human Physiology and Physiopathology, Ageing
Panel 2 - SVE3: Living Molecules, Integrative Biology (From Genes and Genomes to Systems), Cell and Development Biology for Animal Science
Panel 3 - SVE7: Prevention, Diagnosis and Treatment of Human Diseases
Panel 4 - SVE4: Immunity, Infection and Immunotherapy

THEMES OF THE UNIT

The teams of UMR1011 employ complementary molecular, cellular biology and integrated (patho)physiological approaches and technologies to address the mechanisms behind the metabolic and immunological alterations occurring in pathophysiological conditions related to metabolic dysfunction associated steatotic liver disease (MASLD) and diabetes, as well as the associated cardiovascular complications (atherosclerosis, heart failure, valvulopathies). A major research focus is on the identification of pharmacological targets and the regulatory role of nuclear receptors in pathophysiological processes. Research is distributed between five teams:

Team 1, "Inter-organ cross-talk in cardiometabolic diseases", studies the inter-organ crosstalk in cardiometabolic diseases, with a focus on the liver, heart and intestine, and the functions of nuclear receptors as therapeutic targets (PPARs, FXR, Rev-erbα, RORα) therein using animal models and human translational research approaches.
Team 2, "Heart disease, flow disturbances and haemostasis" studies the main pathways involved in blood flow impairments (left ventricle assistance device, Extracorporeal Membrane Oxygenation (ECMO)) and heart valve calcification, and their consequences on blood elements using different translational approaches/cohorts and animal models.
Team 3, "Immuno-metabolic cross-talk in obesity and its comorbidities" studies the mechanisms of cross regulation between the immune system and metabolism in physiological and pathological conditions with a focus on inflammatory and metabolic diseases as well as their cardiovascular complications.
Team 4, "Integrated molecular analysis of gene expression in liver diseases" investigates the mechanisms controlling gene expression in liver pathophysiology, aiming to unravel novel regulatory pathways and refine our knowledge of nuclear receptors as pharmacological targets.
Team 5, "Nuclear receptors in circadian biology", investigates the cellular and molecular mechanisms by which the biological clock affects metabolism and inflammation in several (patho)physiological contexts, and evaluates the use of the nuclear receptors and clock components Rev-erb and retinoic acid receptor-related orphan receptors (ROR) as therapeutic targets to prevent/treat pathophysiological conditions linked to clock disruption.

HISTORIC AND GEOGRAPHICAL LOCATION OF THE UNIT

The Unit "Nuclear Receptors, Metabolic and Cardiovascular Diseases - NRMCD" was created in January 2010 and recreated in 2020. It is located on two different sites i.e. the Campus of the Institut Pasteur de Lille and the Research Campus of the CHU de Lille, and the Faculties of Pharmacy and Medicine of the Université de Lille. This dual geographical location allows interactions with the local basic research and clinical communities.

RESEARCH ENVIRONMENT OF THE UNIT

UMR1011 is affiliated to the Faculties of Pharmacy and Medicine (now united as UFR3S faculty). It also has a secondary affiliation to the Faculty of Science and Technologies (FST), with an associate professor in the Department of Biology and the University institute of technology (IUT) and a professor in the department of biotechnology. The unit is also affiliated to the Lille Isite and several of its members participate in the Isite Hub Santé board.
Together with the UMR8199 and UMR1190, UMR1011 is a founding partner of the labex Egid that aims at federating research teams and promoting research projects on diabetes and its cardiovascular complications. The ANR labex Egid provided means to further develop the research projects and helped to create new laboratories, construct and install new animal facilities, an immune-phenotyping platform, etc. The ANR labex also facilitated the organisation of educational and scientific animation programs.

UMR1011 is fully integrated into the "Pôle de Compétitivité : Nutrition Santé Longévité", serving as a comprehensive hub for industrial, academic, and healthcare stakeholders interested in engaging in collaborative R&D endeavours. The unit is also part of the "Longevity Center" of the Institut Pasteur de Lille, which involves several nationally recognised units of the Institut Pasteur de Lille.
Members of the unit are involved in national and international consortia, such as transatlantic Leducq Foundation, and three RHU networks (leader and/or WP leader), as well as in various learned societies and networks (French and Benelux NR networks, NSFA, EAS...). UMR1011 members also co-organised several regular meetings (e.g. European MASLD Study Group meetings, Egid biannual International Symposia, annual Think Tank meeting, Egid Summer School...).
Members of the unit are also involved in numerous local and national structures. Examples include: one team leader is president of the "ethics committee for animal experimentation of the Nord-Pas de Calais Region (CEEA75)" and member of the Institut Pasteur de Lille animal and hospital campus SPF facilities steering committees. Other unit members are also members of CEEA75 or of the Ethics Committee for animal use in research (Cemea – Genfit). One team was a member of the Inserm CSS3 (2016-2021). One unit member is a member of the Université de Lille Health, Safety and Working Conditions Committee (CHSCT). Two unit members are experts in recruitment panels of the Université de Lille. One team leader is the national coordinator of the French reference centre for von Willebrand diseases and, since 2021 of the French Network for rare bleeding disorders (MHEMO). Several unit members are experts or members of scientific boards for charities, e.g., the Fédération Française de Cardiologie, l'Association Française Contre les Myopathies, la Fondation de France, Société Française d'Hémostase et de Thrombose, or for foreign structures, e.g., Welcome Trust, Medical Research Council, Fonds voor Wetenschappelijk Onderzoek, FNRS, SWF, International Society on Thrombosis and Haemostasis…
The unit's director founded Genfit SA in 1999, a Nasdaq listed biotechnology company. To date both the University de Lille and Institut Pasteur de Lille have valorised, as founding partners, their investment in Genfit for>€70,000,000, allowing the creation of the Fondation Université de Lille. The unit is developing a Laboratory de Recherche Commun with Genfit, which has already obtained a France Relance (>1M€) and a MEL-Isite industrial Chair grants. Several members of the unit have collaborations with private partners (Sanofi, Servier, Cisbio, Stago, Corwave, Abiomed, Puzzle Medical Devices Inc. …). Several valorisation projects driven by unit members have been performed in close collaboration with the SATT and Inserm Transfer valorisation structures.

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

Catégories de personnel	Effectifs
Professeurs et assimilés	14
Maîtres de conférences et assimilés	16
Directeurs de recherche et assimilés	5
Chargés de recherche et assimilés	1
Personnels d'appui à la recherche	26
Sous-total personnels permanents en activité	**62**
Enseignants-chercheurs et chercheurs non permanents et assimilés	2
Personnels d'appui non permanents	19
Post-doctorants	15
Doctorants	19
Sous-total personnels non permanents en activité	**55**
Total personnels	**117**

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
U LILLE	18	0	8
CHRU LILLE	12	0	9
Inserm	0	4	3
INST PASTEUR LILLE	0	1	6
AUTRES	0	1	0
Total personnels	**30**	**6**	**26**

GLOBAL ASSESSMENT

UMR 1011 "Nuclear Receptors, Metabolic and Cardiovascular Diseases" addresses clinically relevant topics in the field of metabolic liver disease and associated complications, with the goal of identifying pharmacological targets and the regulatory role of nuclear receptors in pathophysiological processes. Individual teams focus on related relevant basic and translational projects in an excellent research environment.
The unit has outstanding funding and resources. This is despite cuts in permanent technical staff that has significantly increased the routine workload of both remaining technical staff and researchers. The unit obtained prestigious grants e.g., on ERC advance grant, one ERC starting grant, ANR-funded Labex Egid and several ANR-funded programs (21 ANR AAP PRC, 1 JCJC, 1 France Relance) eleven of these coordinated by team members, for a total of 17,026 M€ at the national and 3,217 M€ at the international level.

Overall, the scientific output of the unit is excellent, and that of one team is outstanding, despite the fact that the contract coincided with the Covid 19 pandemic. Breakthrough discoveries include the demonstrations of acute reprogramming of the hepatocyte transcriptome after acute liver injury (Dubois. et al., Mol Sys Biol, 2020; Teams 1, 3, 4&5), that the transition from steatosis to Mash alters circulating and hepatic immune cell populations (Haas et al., Nat Metab, 2019; Teams 1.3&4), the demonstration that ECMO-associated shear forces induce thrombocytopenia due to faster clearance of GPIb(-negative platelets (Rauch et al. Circ Res, 2023; Teams 1&2), and the finding that Rev-erbα acts as as a crucial regulator of the circadian activity of the NLRP3 Inflammasome to reduce the severity of fulminant hepatitis in mice (Pourcet et al. 2018; Teams 1, 3, 4&5, Inserm highlights of 2018).

The unit has excellent international recognition. Members of the unit were recognised for their contribution to science in the form of prizes and awards including; member of the Royal Belgian Academy of Medicine; Myant Award Lecture, HEART UK; L'Oréal-Unesco for Women in Science prize.
International visibility is also strengthened by the unit's active involvement in national and international societies and committees and contributions to the organisation of national and international meetings (World Congress of Insulin Resistance, European Atherosclerosis Society, European Association of Cardiovascular Imaging).

A major weakness and handicap to the teams relying heavily on animal studies is the inoperative EOPS2-Egid animal facility. Efforts to resolve legal issues preventing work on the facility should be doubled to resolve the issues as quickly as possible.
Attractiveness of the unit is excellent. The unit has a documented record of promoting emerging scientists as exemplified by the generation of the new team 6 from team 1 members and the association of an ATIP-Avenir research project. The unit supports its research staff to obtain promotions with their respective employers and attract associate professors or professors from the University of Lille.
The unit has invested in essential equipment and the teams support technological platforms that are essential to the research of the unit as a whole. Overall, the unit has very good to excellent access to essential technologies.
The transfer activities of the unit are very good to excellent with seven patents submitted during the period 2018-2023. Connections with industry (Genfit, Sanofi, Servier, Cisbio, Evotech…) are very good and outreach to the general public is good to very good. One team has particularly strong interactions with industry and patient groups.

The planned trajectory of the unit is excellent. The themes listed, build on robust preliminary data, are innovative and well supported by secured funding. The collaborative aspects of many of the projects, notably in clinical research, are an important strength of the unit. The emergence of team 6 will bring added value to the consortium by investigating the metabolic factors driving MASLD progression and resolution. The science here is

also data heavy and reinforces the need for additional in-house bioinformatics/data analysis support for all the teams.

DETAILED EVALUATION OF THE UNIT

A - CONSIDERATION OF THE RECOMMENDATIONS IN THE PREVIOUS REPORT

UMR1011 was requested to ensure that the quantity and quality of publications, particularly those from PhD students, were more homogeneous across the different teams, looking for an improvement of the average level of the publications.
Recommendation #1: To organise a lab retreat for the entire unit that included scientific discussions and workshops for PhDs and postdocs as part of the program. Persons from the clinical support should be strongly encouraged to attend.
UMR1011 recruited an administrative assistant with expertise in human resource management who organised an annual lab retreat that included conferences and team-building activities. Additional activities including biweekly unit meetings, monthly journal clubs, general unit assembly, etc. were also implemented.

Recommendation #2 was that every scientist with HDR, or senior technician who may have more than two persons under his/her responsibilities should take part in mandatory leadership and/or team management courses, regularly organised by some governing bodies.
UMR1011 team leaders have taken team management courses from Inserm and/or FRM and several unit members have taken courses for PhD student mentoring.

Recommendation #3 was that yearly "entretien d'évaluation" should be extended to non-permanent staff.
UMR1011 has extended the practice to non-permanent staff from other governing bodies on a voluntary basis.

Recommendation #4 was that the unit have discussions with the university and its faculties to clarify the requirements for promotion of scientists, without overloading them with teaching duties.
The direction of UMR1011 participates in every career evolution and promotion meeting organised by the University, Inserm and IPL and forwards all information and recommendations for future career development to the unit members. The unit direction stimulates all the unit's eligible members to apply for IUF status.

Recommendation #5 was to encourage the unit to apply to the "contrat Interface" Inserm program in order to give research time for the clinicians. It was specifically recommended that the committee increase the bioinformatic team by one permanent staff member (team 4), as well as one permanent scientist, for fundamental science, in team 2. The unit was also recommended to define a strategy to reinforce team 3 or its immunology platform, as this topic was thought to potentially become important across all other teams.
UMR1011 direction confirmed it encourages every eligible clinician in the unit to apply to the "contrat Interface" Inserm program to increase their research time.
The unit hired an engineer to reinforce the metabolic immuno-phenotyping platform and Team 3 is recruiting a foreign scientist (through a Pasteur Institute International call) who will develop research projects in human immunology. A permanent position for a bioinformatician was not secured and the unit has relied on contractual staff to maintain and develop bioinformatics activities. The unit was able to hire a postdoctoral fellow and an engineer to consolidate their expertise.

B - EVALUATION AREAS

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

Assessment on the scientific objectives of the unit

The scientific objectives of the unit are in line with health priorities identified at both regional and (inter)national levels by focussing on elucidating the mechanisms behind the metabolic and immunological alterations occurring in pathophysiological conditions of the metabolic syndrome. All the teams within the unit address health-related topics from either a basic science trajectory or a clinical science trajectory, and in many cases both.

Assessment on the unit's resources

The unit has access to an impressive array of resources and technical platforms (metabolomics, RNA in situ hybridisation, biochemistry, histology, transcriptomic) that are run by the different teams. The unit also benefits from the immuno-phenotyping platform established within the Egid framework.
A bioinformatics pipeline has been implemented and the unit benefits from the high-performance computing cluster at Lille University
A clear major weakness is the incapacitation of the EOPS2-Egid animal facility, which has substantially compromised the progress of some projects.
The unit also suffers from a relatively low number of full-time researchers, numerous highly experienced personnel holding non-permanent positions, and several retiring or retired unit members that are unlikely to be replaced. All these issues impact on the global attractiveness as well as the effectiveness of the unit, despite its impressive international visibility (through publications and roles in international meetings and committees) and excellent science.

Assessment on the functioning of the unit

The unit has a clear and logical organisational structure and a director with a clear scientific vision.
Team and unit meetings take place regularly.

1/ The unit has set itself relevant scientific objectives.

Strengths and possibilities linked to the context

The scientific policy of UMR1011 considers and integrates the policy of its governing bodies and is strongly interconnected with the health priorities identified at both regional and (inter)national levels.
The research focus of the unit i.e., obesity, diabetes and hepatic pathologies, is timely and hugely relevant as these conditions are reaching epidemic proportions. The unit is actively engaged in understanding and combating cardiovascular complications of these conditions, one of the leading causes of mortality.
Activities range from fundamental research, deciphering cellular and molecular mechanisms involved in the pathophysiology of these disorders and during ageing, through to the identification of therapeutic targets, to translational activities.
The unit aims to implement the "Plan Stratégique Inserm 2025" on all its priorities and is particularly committed to the basic to the clinical research continuum policy of its governing bodies.

Weaknesses and risks linked to the context

The translational and multi-omics approaches that are the basis for many modern translational research projects are expensive and require highly trained personnel, which are both expensive and difficult to recruit. However, the unit has a relatively low number of full-time researchers and numerous highly skilled personnel on non-permanent positions.

The unit complains about an overwhelming administrative burden and bureaucracy at every level of its activities. Adhering to policies set by governing bodies is challenging, particularly in the light of significant budget and workforce reductions, and without adequate administrative & technical support.

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 healthy financial resources. Recurrent funding from governing bodies (Inserm, Université de Lille) accounted for 11% of the overall budget. Funding acquired through competitive calls accounted for 89% of the total unit resources during the evaluation period.
During the 2018-2023 evaluation period, the unit obtained funding from academic institutions, non-profit organisations and foundations both at the national (17,026 M€) and international (3,217 M€) levels.
Grants from local calls or institutions (1,061 M€) and industrial companies or valorisation activities (0.525 M€) also contributed to the unit resources.
Recurrent funding allocated by Inserm and Université de Lille as well as part of funding from Labex-Egid was used to foster novel projects (in particular transversal projects across several teams of the unit) with the goal of developing projects to the stage where they could apply for external funding.
Funding was adequate for the unit to maintain and replace equipment as well as to further develop its technical platforms.
The acquisition of new equipment was possible because of grant funding obtained by individual teams e.g., a mass spectrometer for metabolomics research, a Seahorse analyser, a Fibroscan, metabolic cages, a RNAscope device, a vibratome and a 10X Chromium Controller platform.

Weaknesses and risks linked to the context

The cessation of Labex-Egid funding will decrease the flexibility of investment in the next funding period.
The unit has a relatively low number of full-time researchers and numerous highly skilled personnel on non-permanent positions.
The lack of administrative/scientific support positions compromises the scientific focus of all of the teams.

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

The Unit is composed of six teams and 120 collaborators across two sites. The unit adheres to HR rules, and a management committee coordinates its various activities. The gender balance is 116 women to 87 men. Throughout the year, the unit organises governance and scientific events, including the Unit Council, General Assembly, scientific animation, lab retreat, and journal club. Annual individual evaluations are conducted for all staff, including volunteers. The unit implements a specific strategy for career development and promotion.

Health and safety, including psychosocial risks, are well managed through a QWL-PSR committee, while a designated prevention officer addresses biological risks, and new members receive mandatory training. To safeguard scientific assets, IT and networks are protected by multiple firewalls, antivirus software, web protection, and daily backups. The unit is committed to minimising the environmental impact of research by integrating sustainable development principles. It also coordinates several technical plateaus, such as biochemistry, histology, animal facility, cell culture, immuno-phenotyping, and single-cell Omics, to enhance scientific project support.

Weaknesses and risks linked to the context

Several unit members already retired or will retire, with little or no prospect of replacement. There are also difficulties in recruiting permanent technicians/engineers due to a shortage of available positions.
There were reported difficulties with the EOPS2-Egid animal facility due to Covid restrictions and infrastructure problems.

EVALUATION AREA 2: ATTRACTIVENESS

Assessment on the attractiveness of the unit

Attractiveness of the unit is excellent to outstanding. The unit has invested in essential equipment and the teams support technological platforms that are essential to the research of the unit as a whole. Overall, the unit has very good to excellent access to essential technologies. The healthy third-party funding situation of the unit also increases its attractiveness (despite the lack of permanent positions). The unit has a documented record of promoting emerging scientists as exemplified by the generation of the new team 6 from team 1 members and the association of an ATIP-Avenir research project. The unit supports its research staff to obtain promotions with their respective employers and attract associate professors or professors from the University of Lille. The attractiveness of the unit is underlined by its ability to attract third party funding (2 ERC grants and 11 ANR-funded programs coordinated by team members), prizes (e.g., L'Oréal-Unesco for Women in Science prize) and meeting invitations (Hearth UK, Faseb conference, Gordon research conference, Congress of the International Society of Thrombosis and Haemostasis, EASL).

1/ The unit has an attractive scientific reputation and is part of the European research area.

2/ The unit is attractive because for the quality of its staff support policy.

3/ The unit is attractive through its success in competitive calls for projects.

4/ The unit is attractive for the quality of its major equipment and technical skills.

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

UMR1011 is highly visible in the international area, with world leading researchers working on very relevant topics of clinical importance. Translational validation of the unit's research is achieved through close interaction with clinicians and (inter)national collaborations allowing studies on human cohorts and biobanks (ABOS in Egid, three RHU programs, 20 ANR projects, international consortia such as EU Miracle, Leducq LEAN). Unit members are recognised experts in their fields and are regular guests at international conferences, and active in the organisation of national (Nouvelle Société Française d'Athérosclérose, les Journées Francophones de Nutrition, Cardiac imaging program at the "Journées Francophones de Radiologie, Société Française de Cardiologie) and international (Joint Diabetes and Metabolism Research Symposium, World Congress of Insulin Resistance: Diabetes & Cardiovascular Disease, European Atherosclerosis Society, European Association of Cardiovascular Imaging 2020 & 2023, European Society of Cardiology, Society for Cardiovascular Magnetic Resonance, European Congress of Radiology) congresses.
The unit is attractive through its success in competitive calls for projects. Unit members participated in national and international individual and collaborative grants: one ERC starting grant (Metabo3DC, 2022-2027, 2,406 k€), one ERC advanced grant (Immunobile, 2016-2022), the Leducq Epigenetics of Atherosclerosis Network", LEAN, 2017-2022), in addition to numerous other grants including several ANR-funded programs (21 ANR AAP PRC+JC (372 k€) and a France Relance grant (700 k€), eleven of which coordinated by unit members.
Unit members actively participate in ERC jury panels, European scientific advisory boards, and scientific evaluation panels of various institutions (Atlas, Odense, DK; Novo Nordisk Foundation Center for Basic Metabolic Research, Medical Research Council of the UK Research and Innovation, UK). Unit members are experts or members of scientific boards for French charities funding research (FRM, Fédération Française de Cardiologie, l'Association Française Contre les Myopathies, la Fondation de France) and foreign grant agencies (Welcome Trust, Medical Research Council, FWO, FNRS, SWF, ISTH…)
Unit members have been nominated for prestigious awards (European correspondent of the National Academy of Pharmacy, Paris, France, 2024 Anitschkow Award of the European Atherosclerosis Society).

The unit recruited a human resources manager and has drawn up a human resources policy to ensure equal opportunities for training, internal mobility and career advancement. Specific measures have been implemented to improve the working environment including the establishment of a committee for "quality of life at work and psychosocial risks". The team leaders have taken team management courses from Inserm and/or

FRM, and several unit members have taken courses for PhD student mentoring. Project managers also participated in a training course organised by the unit entitled "prévenir et agir face aux situations de souffrance au travail" in 2024.

The unit has established several in-house technology platforms (biochemistry, histology, transcriptomics), a bioinformatics pipeline, an immuno-phenotyping platform within the European Egid framework, a metabolic platform within the EOPS2-Egid animal facility, and a high-resolution LC mass-spectrometry platform to develop small molecule metabolomics and metabolic flux analysis, making the site attractive to international talent. For example, the unit hosted 51 postdoctoral fellows, 49 PhD students and 57 M2 students from various backgrounds (scientific, bioinformatics, medical) and origins (Latvia, Belgium, Russia, Romania, Italy, Turkey, Japan among others) during the evaluation period.

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

Retaining appropriately qualified talent seems to be an issue – partly attributed to the lack of permanent positions, the lack of interest of students in pursuing an academic career, and difficulties in filling open positions for technical staff (low level of recruitment of Inserm/University researchers and technicians/engineers).
The unit lacks at least one full time bioinformatician on a permanent contract.
The unit has a low number of visiting scholars/scientists.
Construction errors and associated legal issues resulted in the closure (July 2022) of the new EOPS2-Egid animal facility on the HU Campus. This has proven to be a major restriction on all animal experimentation, particularly on metabolism and circadian rhythms. The current solution is impractical as the unit has been forced to use an animal facility (Phexmar) with limited equipment on the campus of another faculty far from both the IPL and University Hospital Campuses. This also required a costly and time-consuming second re-derivatisation of mouse lines. This situation had a major impact on the progress of some projects and requires a more workable solution.

EVALUATION AREA 3: SCIENTIFIC PRODUCTION

Assessment on the scientific production of the unit

The publication output of the RNMCD as a whole is excellent: 505 publications, including 6% reviews and 10% editorials/commentaries over the period. 34% of the total number of publications was published in strategic position. 27% of the papers (n=137) resulted from collaborations between teams within the unit. 37 publications (7%) were highly cited papers (Top 1%, Web of Science). 33% of articles were published in the top-level generalist (the Lancet, PNAS, Nat. Commun) and specialist journals (Nat Metab, Nat Cardiovasc Res, JACC, Circulation, Circ Res, J Hepatol, Cell, Cell Metab, etc.).

1/ The scientific production of the unit meets quality criteria.

2/ The unit's scientific production is proportionate to its research potential and properly shared out between its personnel.

3/ The scientific production of the unit complies with the principles of research integrity, ethics and open science. It complies with the directives applicable in this field.

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

In the period 2018-2023, RNMCD produced a total of 505 publications, including 84% original articles, and 16% reviews/letters/comments/editorials. Of these, 37 (7%) are highly cited papers. Several publications signed in strategic positions were published in high-profile journals (1 Nat Commun, 1 Nat Metabolism, 1 Nat Cardiovasc Res, 1 PNAS, 1 Lancet). Several other publications in high-profile journals resulted from collaborations (3 Nat Comm, 2 Nat Metab, 1 Science Immunol, 4 PNAS, 1 Lancet). The Unit is implementing a policy discouraging the dissemination of scientific results in "predatory" journals (i.e., MDPI). The committee felt that particular highlights and "breakthrough articles" were the demonstrations of acute reprogramming of the hepatocyte transcriptome

after acute liver injury (Dubois. et al., Mol Sys Biol, 2020; Teams 1, 3, 4&5), that the transition from steatosis to Mash alters circulating and hepatic immune cell populations (Haas et al., Nat Metab, 2019; Teams 1.3&4), the demonstration that ECMO-associated shear forces induce thrombocytopenia due to faster clearance of GPIba-negative platelets (Rauch et al. Circ Res, 2023; Teams 1&2), and the identification of Rev-erba as a crucial regulator of the impact of time-of-the-day surgical intervention on peri-operative myocardial injury in patients undergoing aortic valve replacement (Montaigne et al. Lancet, 2018; Teams 1.4&5). The finding that Rev-erbα acts as a crucial regulator of the circadian activity of the NLRP3 Inflammasome to reduce the severity of fulminant hepatitis in mice (Pourcet et al. 2018 Gastroenterology; Teams 1, 3, 4&5) was recognized as an Inserm highlight of 2018).

Production is mostly linked to the size of the teams, although some differences exist. Team 1 is the largest and most established team, published the highest number of articles and had the most extensive inter-team collaborative publications (136).

Policies to ensure that the Unit scientific production meets high standards of integrity and ethics are provided by asking all personnel to acknowledge their agreement and adherence to unit policies in this area. All members use electronic laboratory notebooks (Labguru administrated by Inserm).

All experiments are approved by the local ethics committee (Team 3 leader is president of the "ethics committee for animal experimentation of the Nord-Pas de Calais Region (CEEA75)" and a member of the Institut Pasteur de Lille animal and hospital campus SPF facilities steering committees) followed by a review by the Animal Use for Scientific Research office of the Minister of Higher Education and Research.
Clinical studies are conducted adequately (informed consent, protecting confidentiality, adhering to ethical guidelines and submitting procedures to adequate ethics committees).
All approved procedures can be consulted by project leaders on a secured folder on the Unit's intranet.

Each original scientific article and review undergoes several rounds of internal revision including rereading by the leading senior author and laboratory director prior to submission to a journal.
For authorship, the Unit applies the Aviesan recommendations for scientific publications in life sciences.

To promote open science, the final unformatted version of all manuscripts from the Unit is deposited in HAL. Direct links to the HAL records for each publication are available on the Unit's public website. Large datasets of -omics data are made available through specialised databases (Gene Expression Omnibus, Proteomics Identification Database; Zenodo, etc.). Source code and analysis scripts are either published with the article or made available through a specialised public database (Zenodo, Github, etc.).

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

Scientific output is disparate between teams, with some teams have fewer publications signed in strategic positions than others.
A cell or working group to raise awareness of scientific integrity has not been established in the unit.

EVALUATION AREA 4: CONTRIBUTION OF RESEARCH ACTIVITIES TO SOCIETY

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

The contribution of the unit as a whole to research activities to society is very good as unit members take part in events planned to disseminate knowledge with the general public e.g., La Fête de la Science, targeted at primary school children; Destination labo, for young students and Village des Sciences for the general public. Team 2 stands out for its excellent interactions with non-academic partners (Roche, Abiomed, Stago, BPI France, Corwave) to develop fundamental and translational knowledge and accelerate the development of new diagnostic tools and treatments for patients affected by cardiovascular and haemostasis diseases. The team leader is also coordinator of the MHEMO rare diseases French healthcare network.

1/ The unit stands out for the quality and the amount of its interactions with the non-academic world.

2/ The unit develops products for the cultural, economic and social world.

3/ The unit shares its knowledge with the general public and takes part in debates in society.

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

UMR1110 advances its translational research and technology transfer initiatives to foster new treatments and diagnostics, collaborating extensively with non-academic partners in areas such as liver pathologies, metabolic diseases, heart disease, diabetes, and blood flow disorders like Willebrand disease. These collaborations leverage clinical resources from CHU Lille, the Heart & Lung Institute (Team 1 and 2), the Haemostasis and Transfusion Department, the Center of Willebrand Disease, and the Department of Cardiology (Team 2).

Supporting these partnerships is a robust RHU network, including RHU Precinash, RHU WillAssitHeart, and RHU Tipitch, FHU Integra, and several PHRCs (three involving Team 2). The unit's non-academic collaborations span the development of innovative therapeutic strategies for liver diseases (Team 1), cardiovascular diseases (Team 2), and more. Notable industry partnerships include Sanofi, Servier, Cisbio, Stago, and Roche, with several teams securing private contracts and consulting activities, such as Team 2.

Tech transfer and translational science efforts have resulted in the filing of seven patents, one of which has been licensed for its therapeutic potential during the contract period. Several teams have actively pursued maturation projects, collaborating with Inserm Transfer and/or SATT Nord, leading to the licensing of certain technologies for their therapeutic potential.

The start-up Genfit SA was incubated by UMR1110, and Team 1 maintains a privileged partnership with Genfit SA, focusing on the N1S2+ biomarker and the valorisation project FolFA. Team 2 is involved in the Calipso project with the Corwave start-up, aiming to develop an innovative blood pump. Additionally, two teams, including Team 2, are engaged in PHRC projects and Phase 1/2 clinical trials.

The unit contributes to the Journée de la Science and its members frequently engage with regional, national, and international press, radio, and TV programs to discuss their research and global collaborations. The unit initiated various actions to connect with patient associations and non-specialised audiences. This includes organising visits and conferences with patient associations (e.g., AFH, French Association of Haemophilia) as well as hosting dedicated events for patients and their families to discuss advancements in treatments and therapeutic strategies.

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

The unit did not set up strong participatory research initiatives with patients, based on the incentive systems proposed by the University of Lille.

ANALYSIS OF THE UNIT'S TRAJECTORY

The unit's trajectory is in line with previous work and is based on solid preliminary data. The proposed themes will maintain the high scientific level of the teams, and will benefit from some guaranteed funding. The collaborative aspects of many projects, particularly in clinical research, are a major strength of the unit. The emergence of Team 6 will bring added value to the consortium by studying the metabolic factors that determine the progression and resolution of MASLD. This new team will undoubtedly contribute to the overall attractiveness of the unit and is an excellent candidate for further ERC funding.
The focus on interorgan crosstalk in cardiometabolic disease is timely as there is a growing recognition that changes in one organ directly regulate those in another, be it by the release of factors, extracellular vesicles or metabolites.
The unit has a focus on immune-inflammatory reactions and their contribution to cardiovascular disease and presumably "inflamm-aging". Here the focus on metabolism is also timely as improper metabolic control acts in concert with immune system alterations to precipitate disease progression.
The unit contains well-integrated clinical researchers, which has helped fine-tune its projects to integrate translational studies using clinical cohorts, to perform omics analyses to identify pathways and genes associated with disease progression. The necessary methodology to target novel actors in disease development e.g., in tissue-specific targeting in preclinical models is available.
The unit will continue to develop and use pharmacological tools to study the roles of potential targets in disease. They will continue their strong focus on nuclear receptors and expand this to the highly important area of environmental signals. The work on haematopoietic somatic mosaicism associated with cardiac diseases as well as the projects on circadian rhythms promise to generate highly novel data.

RECOMMENDATIONS TO THE UNIT

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

The committee identified several areas in which the unit should liaise with the host institutions and governing bodies to find workable solutions: (i) the lack of optimal animal facility access (ii) administrational overload and excessive bureaucracy (induced by lack of consensus in reporting, ordering, etc.), (iii) the burdening of scientists with routine tasks as a consequence of the lack of technical assistants, and (iv) the optimisation of teaching loads. The unit is encouraged to pool resources from the different teams to optimise administrative tasks. The unit is encouraged to consider sustainability when the products of scientific research are used or created i.e., develop specific measures to support Green science (e.g., reanalysis of large datasets for alternative usage, encourage public transport...). The unit is currently well organised, but should begin to make concrete plans about its future development/direction, given the retirement of the current director during the next contract. Team sizes are imbalanced and may benefit from the reorganisation and/or restructuring at the same time as maintaining the sustainable scale of unit. Inter team collaborations should be strengthened - especially between teams 2, 3, 4, 5 and 6 - as the vast majority of collaborative projects are with team 1. The unit is encouraged to increase integrated -omics approaches and not rely so heavily only on transcriptomics. The unit should focus more in developing the technological skills of its members, in particular in data analysis and basic bioinformatics. There is a clear need for at least one additional full time bioinformatician and for expansion of the unit's access to servers/data storage.

Recommendations regarding the Evaluation Area 2: Attractiveness

The committee commends the unit for its scientific attractiveness and recommends continued efforts in this direction. The unit (in particular Team 1) should improve intra-team communication to promote synergy between projects and improve information transfer to research staff. A welcome package could be provided to international scientists to help with bureaucracy, and a "buddy system" set up for new arrivals to promote mentoring for the first few months by a French-speaking peer. The unit should continue to maintain its involvement in technical platforms and expand its development to keep pace with technological developments. Top senior postdocs should be encouraged to apply for ERC grants to develop independent career within the unit. Lastly, the unit is encouraged to maintain contact with the university to rapidly resolve the stalemate situation regarding the repair of the animal facility.

Recommendations regarding Evaluation Area 3: Scientific Production

The use of BioRxiv for the pre-submission of the manuscript should be encouraged. The unit should also encourage teams to accept the open access option when publishing its papers. To decrease animal numbers, the unit should develop a strategy for making more widespread use of 3D models and increasing their complexity (number of cells, perfusion, etc.). The unit is encouraged to invest in computational biology, including AI and machine learning where appropriate. The unit should negotiate with the host institutions/governing bodies to obtain engineer/technician positions and thereby decrease the charge of routine tasks performed by research staff. Special attention should be paid to acknowledge ITAs in publications.

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

The committee recognises that not all the research teams have currently transferable projects/themes but patentability of ideas and contact with "Inserm transfer" and other organisations should be maintained/expanded. The unit should consider more active participation in conferences for general public (podcasts, YouTube channels...) and other social media platforms.

TEAM-BY-TEAM ASSESSMENT

Team 1: Inter-organ cross talk in cardiometabolic diseases

Name of the supervisor: Bart Staels

THEMES OF THE TEAM

Team 1 studies the inter-organ crosstalk in cardiometabolic diseases, with a focus on the liver, heart and intestine, and the functions of nuclear receptors as therapeutic targets (PPARs, FXR, Rev-erbα, RORα), using animal models and human translational research approaches.
The team is currently divided in four groups investigating: i) NASH (molecular mechanisms, potential biomarkers and therapeutic targets); ii) intestine and nuclear receptors (role in the pathophysiology of T2D and NASH); iii) bile acids (FXR and TGR5 receptor ligands connecting inter-organ signalling to control metabolic homoeostasis); iv) cardiac pathologies (impact of cardiac metabolism and immune cells).

CONSIDERATION OF THE RECOMMENDATIONS OF THE PREVIOUS REPORT

The team was encouraged to hire more full time (basic) scientists to further strengthen the research team. However, the emergence of Team 5 during the last contract, and of the future Team 6, will actually decrease the number of full-time scientists.

The Team was advised to send students abroad and to attract foreign researchers. Two students have been or are still hosted in international laboratories. Team 1 is also a member of the EU Horizon TMA MSCA Doctoral Network Miracle and joined the Graduate program "Precision health", which should fund international short-term stays for students. However, the imposition of a three-year PhD by the university partly hampers these efforts.

The third recommendation (considering microcirculatory aspects of atrial fibrillation in large animal models) has been addressed thanks to collaboration with Team 2, 3 and Egid.

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

Catégories de personnel	Effectifs
Professeurs et assimilés	6
Maîtres de conférences et assimilés	9
Directeurs de recherche et assimilés	1
Chargés de recherche et assimilés	0
Personnels d'appui à la recherche	4
Sous-total personnels permanents en activité	**20**
Enseignants-chercheurs et chercheurs non permanents et assimilés	1
Personnels d'appui non permanents	12
Post-doctorants	6
Doctorants	9
Sous-total personnels non permanents en activité	**28**
Total personnels	**48**

EVALUATION

Overall assessment of the team

The team is outstanding in the quantity and quality of scientific production: 243 original papers and 22 reviews, some of them in leading position in top-ranking generalist journals (1 Nat Comm, 1 Nat Metabolism, 1 Nat Cardiovasc Res, 1 PNAS, 1 Lancet). The team attractiveness is overall outstanding: two ERC grants and six other European funding as PI during the period, for a total of 2.743M€, five ANR coordinators, two AFEF, one FdF association/foundation grants; organisation of prestigious international meetings (World Congress of Insulin Resistance, European Atherosclerosis Society); participation in international scientific advisory boards (Atlas, Novo Nordic Foundation...). Links with industry are very strong: the team leader chairs the SAB of Genfit S A. Interaction with society is very good but could be strengthened.

Strengths and possibilities linked to the context

Team 1 is a multidisciplinary team including both basic and clinical researchers who contribute to a rich and transversal research with close links to industry. The team is responsible for the Biochemistry plateau of the unit, and coordinates histology and a radioactivity plateau, and Biosafety Level 2 laboratories. The developed themes are perfectly aligned with local priorities, as well as with those of Inserm and Institut Pasteur Lille.
Team 1 constitutes the backbone of the Unit, as demonstrated by the fact that it is included in all publications emerging from collaborations between unit teams.
The team has published 265 publications: 243 original papers and 22 reviews. Several articles in leading position are published in top-ranking generalist journals (1 Nat Comm, 1 Nat Metabolism, 1 Nat Cardiovasc Res, 1 PNAS, 1 Lancet) and many others in top journals of their specialities (J Hepathol, Metabolism, Gut…).
In particular, Team 1 showed that the time-of-the day of cardiac surgery impacts on both short- and long-term clinical outcomes including cardiovascular death, myocardial infarction and acute heart failure, with afternoon surgery providing preoperative myocardial protection (the Lancet 2018 - Hot paper). Team 1 members also showed that haematopoietic somatic mosaicism is frequent in candidates for aortic valve replacement. As this predisposes to a higher incidence of post-operative atrial fibrillation, patient screening may be useful in their personalised management (JACC 2023). Finally, Team 1 members showed that Roux-en-Y bypass induced an improvement of liver cholesterol homoeostasis as highlighted by hepatic transcriptomic signatures and plasma metabolite changes (Lalloyer at al. J Hepatic 2023).
Between 2018-2023, Team 1 has obtained third party funding for a total of 9,296 k€. Team 1 obtained eleven national grants (8 ANR, 5 as PI; 2 AFEF as PI; 1 Fondation de France as PI), six European (1 ERC Starting, 3 CPER as PI; 1 EFSD as PI; 1 REA as co-PI), seven association/foundation, two industry, three valorisation and one regional selective grants (Hauts de France Metabolonash).

The team has a clear international visibility: it actively participates in the organisation of national and international events (Joint Diabetes and Metabolism Research Symposium, World Congress of Insulin Resistance: Diabetes & Cardiovascular Disease, EAS, Egid summer school, NSFA annual congress, JFN Lille, etc.).
Team 1 members are also highly involved in research administration, by participating in international and national Scientific Advisory Boards (including Atlas, Novo Nordic Foundation, RHU Chopin) and grant agency panels, as well as in learned societies, committees and juries, including strategic committees of Faculties/Lille University. 2 members received prizes (Anitschkow Prize at EAS meeting, Alain Castaigne Prize at SFC meeting) during the period.
Team 1 has hosted 29 PhD students (4 foreign PhDs), seventeen postdocs (3 foreign fellows), and three ATER. Fourteen out of sixteen students who defended their PhD have at least one original paper as the first author.
The team has a clear link with the industry. The head of the team leads the SAB of Genfit S A. A joint research laboratory will be created in 2024 with the company.

Weaknesses and risks linked to the context

The team includes only one permanent researcher (who will move to team 6 for the next contract). Turnover and instability of expert non-permanent staff may lead to a loss of key technical competences. The location of the Team on three geographical positions (Institute Pasteur Lille, UFR3S Faculty Research Pole + CHU Hospital) makes team communication and cooperation difficult. The number of visiting scientists is low despite participation in international consortia and networks. The team holds several patents but none has been licensed. Limited interactions with society (no participatory research), mainly limited to event participation (i.e. Fête de la Science, Village des Sciences).

Analysis of the team's trajectory

The team project for the next mandate is in continuation of the previous project. The team will be organised in five research axes: i) FAT10 in Mash development; ii) Intestinal FXR in Mash and cardiometabolic disease development; iii) Intestinal REVERBα and intestinal metabolism; iv) Impact of Mash on atherosclerosis development; v) immune cardiac cells and heart-liver crosstalk. The themes are supported by robust preliminary data, are innovative, and funding have been secured. The collaborative aspect of the project, notably in clinical research, strengthen the proposal.
A new team (team 6) will also emerge from previous team 1. Team 6 will investigate the metabolic factors driving MASLD progression and resolution. In a first axis, the metabolic factors driving hepatic dendritic cell dysfunction in MASLD will be explored by determining the metabolic status of conventional dendritic cell (cDC) subpopulations, manipulating cDC metabolism and mapping hepatic DC microenvironment in Mash. In a second axis, the team will aim at understanding the cellular and functional heterogeneity of adipose tissue depots in the context of MASLD and T2DM. This will be done though a comprehensive characterisation of adipocytes subtypes in both mice and humans. Axis 1 research is funded though the ERC program Metabo3DC until 2027. Overall, this new team appears very promising.

RECOMMENDATIONS TO THE TEAM

The team should set up meetings with all team members at least four times a year to disseminate information and to promote interactions between the groups (even if not all people can join). Technical staff and PhD students participating in publications should be systematically cited as authors or in the acknowledgement sections of publications to promote their career development. The team should take advantage of participation in European networks to send students on targeted experiments in foreign laboratories, as part of defined collaborations, which should be possible over the three-year thesis period. It would also be interesting to set up participatory research initiatives with patients using the incentive systems proposed by the University of Lille.

Team 2: team 2 Heart disease, flow disturbances and haemostasis

Name of the supervisor: Sophie Susen et Eric Van Bell

THEMES OF THE TEAM

The main objective of team 2 "Heart disease, flow disturbances and haemostasis" is to investigate the cardiovascular disorders inducing alteration in the equilibrium between pulsatility and shear stress, which have been implicated in disease pathogenesis and are at the origin of many clinical complications (bleeding, stroke, pump thrombosis). The team has three research goals: 1) To understand and slow down mechanisms of the aortic valve calcification/stenosis and bioprosthesis degeneration, 2) To investigate the consequences of flow disturbances due to cardiac structural abnormalities or circulatory support on haemostasis, and 3) To investigate the pathophysiology and the impact of thrombotic and bleeding complications in this setting, with a special focus on intracerebral macro- and micro-bleeds.

CONSIDERATION OF THE RECOMMENDATIONS OF THE PREVIOUS REPORT

After the last evaluation, team 2 was encouraged to apply for international grants to further strengthen its international position.
The team submitted two letters of intent to the Leducq Foundation (unfortunately without success, a 3rd in preparation). The Team secured a European grant from the ERN Eurobloodnet (European Reference Network on haematological rare diseases) as a leader and an ERA-Net grant including French, German, and Taiwanese neurologists and haematologists.

The team was also encouraged to recruit full-time scientists (with protected research time, i.e. not overloaded with teaching activities) to further strengthen the research program by providing a stronger research backbone in the laboratory.
The team attracted four new PhDs, three postdocs and one engineer. A young associate professor is preparing to ask for a Chair at the Institut Universitaire de France and to obtain teaching exemption funding.
The Team was encouraged to recruit more international students, and to send postdocs/students abroad for a number of months.
The team hired a Brazilian postdoc and is in the process of recruiting a Chilean postdoc. It also encourages early career researchers to pursue opportunities abroad to gain international experience.

Team 2 was encouraged to implement steps to improve cross-talk between metabolic disturbances and haemostasis.
During the Covid period, team 2 focused on establishing a clinical cohort of patients with mild to severe Covid infection to study the metabolic/fibrotic status of the liver. This effort involved collaboration with two other teams within the unit. A new research project examining haemostasis defects in patients with MASLD (Metabolic Associated Steatotic Liver Disease) is being prepared.

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

Catégories de personnel	Effectifs
Professeurs et assimilés	8
Maîtres de conférences et assimilés	4
Directeurs de recherche et assimilés	0
Chargés de recherche et assimilés	1
Personnels d'appui à la recherche	10
Sous-total personnels permanents en activité	**23**
Enseignants-chercheurs et chercheurs non permanents et assimilés	0
Personnels d'appui non permanents	2
Post-doctorants	2
Doctorants	2
Sous-total personnels non permanents en activité	**6**
Total personnels	**29**

EVALUATION

Overall assessment of the team

The research standing of the team is excellent and they address clinically highly relevant topics. The level of funding is excellent (1 PIA, 3 ANR, 1 RHU, 2 PHRC-N…; Foundations Funding: I-SITE, AFH, SFH…; Industrial funding: Roche, Stago, Corwave.). The scientific productivity is very good to excellent with publications in leading positions in subspeciality journals (J Thromb Haemost, JACC Basic Transl Sci, Haemophilia) as well as in journals with an excellent international reputation (Circ Res, Circulation, 2x JACC). Team 2 members were also listed as co-authors in impactful journals (such as Eur Heart J, Am J Cardiol, Blood, Circulation). The interaction with the non-academic sector is exemplary. Transfer and attractiveness are excellent to outstanding. For example, team 2 developed original ex vivo circulatory loops aiming to study the impact of mechanical circulatory support on blood components. Society involvement is excellent (only team working with patient associations: the team leader is the national coordinator of the French reference centre for von Willebrand diseases and, since 2021 of the French Network for rare bleeding disorders), and the team established 10 partnerships as consultants or experts with industries including Roche, Biomarin, Takeda, Sanofi Novo-Nordisk, Pfizer and Sobi.

Strengths and possibilities linked to the context

Team 2 has a strong focus on translational research and close collaboration with clinical associates. Team members are recognised nationally and at the European level as experts in flow disturbances associated with structural cardiac defects and haemostasis, and in particular von Willebrand factor.
During the 2018-2023 period, Team 2 produced 274 original publications, with 52 original papers, 21 letters/editorial material, four guidelines and eleven reviews with team members in leading position in high-profile generalist journals (Nejm, the Lancet, Critical care) and top-ranked specialty journals (Circulation, JACC, Circulation research, Arterioscler Thromb Vasc Biol). Twenty-eight original articles, one letter and four reviews are collaborations with at least one other team from the unit.
Original translational approaches including dedicated cohorts, new animal models and in vitro models were developed by team 2 in close connection with the Department of Haemostasis and Transfusion at Lille University Hospital, the National Reference Centre for Willebrand disease, and the Department of cardiology. Team 2 also developed original ex vivo circulatory loops aiming to study the impact of mechanical circulatory support on blood components. These experimental models allow the use of different pumps that are implanted in the clinic.

To allow a more mechanistic approach they also developed microfluidic approaches allowing studying the impact of pulsatility on endothelial cells at high shear stresses.

The team established clinical trials and has access to several cohort of patients: von Willebrand disease (CRMW), Haemophilia (NCT06090201), Aortic stenosis (NCT03728049; NCT02972008), Ecmo (NCT03070912), LVAD patients (NCT02488525) for which they serve as principal investigators. These cohorts are highly phenotyped, including biology, genetics and imaging such as MRI. During the Covid period, team 2 participated in the creation of a cohort (NCT04327180) resulting in publications based on its own projects, as well as global collaborative projects.

The team secured a labex Egid, three PIA grants (including 1 RHU as WP leader) and a PIA "Plans de surveillance et de contrôle" (PSPC) with an industrial partner. This funding was used to cover salaries (4 postdocs, 1 project manager, 5 engineers, 2 technicians) and buy new equipment (microfluidic systems, live imaging microscopes, incubators, minus 80 freezers) and cover costs of consumables. Team members obtained three ANR, of which two as leader (Retinav 245 k€ and TWIST, 350 k€).

Team 2 organised four international scientific events during the last evaluation period e.g., International Society and Haemostasis (ISTH) congress organisation in 2023. A team member was chair of the French Society of Thrombosis and Haemostasis (2017 to 2020) and organisation of the related annual congress. Team members received over 60 invitations to speak at conferences (44% outside France e.g., ISTH, Gordon Research Conference (GRC) on Cell Biology of Megakaryocytes and Platelets (2022, Italy), and belong to the editorial board of journals (Hematology, Archives of Cardiovascular Diseases).

During the evaluation period, team 2 obtained two patents; one on the use of retinoic acid receptor agonists for reversing, preventing, or delaying calcification of aortic valve and the other on the new sequences humanised of Mab-508. It also obtained funding from industry (e.g. Corwave company, Roche). Since 2022 one team leader is coordinator of the MHEMO (Maladies Hemorragiques constitutionnelles) rare diseases French healthcare network. The team also has strong links to the French association of haemophilia (for patients).

Weaknesses and risks linked to the context

None of the patents filed to date have led to a licence.
No Cifre theses were obtained during the evaluation period.

Analysis of the team's trajectory

Team 2 will remain focused on its area of expertise in haemostasis and cardiology, with a particular focus on genome-wide screening strategies, bioinformatics analysis, and functional studies to identify new biomarkers and pharmacological approaches related to bleeding and cardiovascular diseases. They will pursue their research on haemostasis and the impact of altered shear stress and pulsatility resulting from structural heart valve disease and heart failure.
The themes and projects outlined address clear clinical questions and are based on solid scientific data. Research projects will be implemented in close collaboration with clinical and industrial partners.

RECOMMENDATIONS TO THE TEAM

More emphasis should be placed on proteomics and metabolomics analysis than on sequencing.
Participation in European and international projects (e.g., Leducq) should be increased.

Team 3: Immuno-metabolic cross-talk in obesity and its associated complications and comorbidities

Name of the supervisor: David Dombrowicz

THEMES OF THE TEAM

Team 3 studies the mechanisms of bidirectional crosstalk between the immuno-inflammatory system and metabolism, particularly in the context of "metabolic" diseases: obesity, type 2 diabetes (T2D), MASLD and their cardiovascular complications, and in "inflammatory" diseases such as psoriasis. Team 3 uses a variety of complementary approaches (preclinical mouse models, in vitro molecular studies, translational research) to focus on immune cells from different organs (liver, heart, adipose tissue) as well as in the blood, bone marrow and barrier organs such as the skin. Because achieving these objectives requires multidisciplinary skills and translational approaches, Team 3 closely interacts with other teams in the unit, enabling whole organism/systems biology approaches.

CONSIDERATION OF THE RECOMMENDATIONS OF THE PREVIOUS REPORT

The previous committee recommended that a special effort should be made to increase the number of original publications from the team in leading position. It was also recommended that particular attention should be paid to the output of PhD students and postdocs.
For the period 2018-2023, team 3 authored 47 publications including thirteen in leading positions. Ten of these thirteen publications were (co-) first authored by PhD students and/or post-docs, who also co-authored eight other publications. Original articles were published in very reputable journals (2 of them with editorial material).
It was recommended that the team leader follow a team management training course, which he completed in 2020. The team leader also underwent two specific individual coaching sessions validated by Inserm.
It was also recommended that the second line of research, entitled 'Impact of metabolic (dys) functions on immune cell function and response' be better developed, with a focus on adipose tissue, obesity and immune alteration of adipose tissue. This topic was better delineated, focusing on the impact of CD metabolism on psoriasis. This was evaluated very positively by an international SAB, leading to labelling as an "Institut Pasteur de Lille team" and labelling and funding as a "FRM team".

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	1
Chargés de recherche et assimilés	0
Personnels d'appui à la recherche	3
Sous-total personnels permanents en activité	**4**
Enseignants-chercheurs et chercheurs non permanents et assimilés	0
Personnels d'appui non permanents	1
Post-doctorants	2
Doctorants	0
Sous-total personnels non permanents en activité	**3**
Total personnels	**7**

EVALUATION

Overall assessment of the team

Research activity and scientific output are outstanding given the number of permanent staff in the team (1 DR, 3 ITA). Its scientific output is excellent to outstanding, with articles in leading positions in high impact journals (Cell, Cell Metab, Gastroenterology). The team is outstanding at raising funds (1. National Psoriasis Foundation, USA; 1 Francophone Fondation for Research on Diabetes; 1 Leducq Foundation as a partner, one ANR as a PI and four as partner, three PIA grants, two regional CPER grants, two FRM grants with a prestigious "Equipe labellisée"). The collaboration with industry and interaction with society are good (1 valorisation contract and 1 collaboration with Genfit).

Strengths and possibilities linked to the context

The team investigates the mechanisms of cross regulation between the immune system and metabolism in the context of inflammatory diseases such as psoriasis. Team members also study metabolic diseases such as obesity, diabetes, MASLD and their complications in collaboration with complementary teams within the unit, including teams 1 and 4. They have established strong collaborations at the national and international levels (C3M Nice, Department of Pathology and Immunology of Washington University...). The team is outstanding at raising funding: one National Psoriasis Foundation, USA, 38 k€; one Francophone Fondation for Research on Diabetes, 300 k€; one Leducq Foundation as a partner, 100 k€; one ANR as a PI (310 k€) and four as partner, three PIA grants (Labex Egid 1 000 k€), 2 regional CPER grants (total 30 k€), 2 FRM grants (Equipe labelisée, total 400 k€).
There is a functioning connection with industry with one contract (development of 3D liver organoids with HCS pharma) and a collaboration with Genfit.
Team 3 has set up and manages the metabolic immuno-phenotyping platform of the laboratory and a platform for investigation of lung function at the Institut Pasteur Lille. The team has produced excellent to outstanding publications in leading positions on PPAR and inflammatory pathologies (J Hepatol 2019), bile acid receptors (Sci Rep 2020, J Hepathol 2023), immunometabolism (J Int Obesity 2021, Nutrients 2020), psoriasis (J Invest Dermatol 2019, Cell 2019), immune populations associated with NASH (Nat Metal 2019). In a landmark paper, team 3 showed that the fine-tuning of innate immunity depends on the optimisation of metabolic demands and the minimisation of UPR (unfolded protein response) induced by the production of mitochondrial reactive oxygen species (Cell 2019 in leading position). Team 3 also reproduced the evolution from simple steatosis to NASH in a mouse model of diet-induced NASH that resulted in liver transcriptomic and immune signatures comparable to those observed in patients (Nat Metab 2019 in leading position).
Former doctoral and postdoctoral fellows have been hired/promoted as PU-PH, professors or assistant professors in foreign countries, or work as scientist at NIH or in an agribusiness company.
The team leader has a major involvement in the ethics of animal experimentation (chair of the Ethics Committee for Animal Experimentation Nord - Pas de Calais, CEEA75).
Team 3 leader is member of a Common research laboratory (LRC) with the biotech company Genfit.

Weaknesses and risks linked to the context

The team is small, with only one full-time researcher. Several team members have left or retired with no prospect of replacing them. Although the team received international funding for its research, the PI does not belong to any international networks and the team's international visibility may be limited.

Analysis of the team's trajectory

In the next mandate, the team will develop a project centred around three axes in line with previous work. Axe 1 will evaluate the contribution of the hexosamine biosynthetic pathway to the function of cDC subsets and their role in psoriasis. Axe 2 will study whether the immune-metabolic alterations in Mash can promote cardiac remodelling and subsequent comorbidities. Axe 3 will characterize the hepatic DCs and T lymphocyte interactions in the context of steatosis to Mash transition.
Considering the ability of Team 3 to raise funds and thus to hire non-permanent staff, the project appears feasible. Aside from the already established collaboration with team 1, it is not clear what additional interactions will be developed or strengthened with other teams in the unit. Given the small size of the team, the application for an Inserm professorship who will closely collaborate with the team, and for an Inserm CRCN application, are an important part of the future strategy,

RECOMMENDATIONS TO THE TEAM

The team needs to strengthen its core permanent staff, and increase the number of PIs. Additional solutions should be considered if the planned recruitment strategies fail.
Greater involvement in structuring activities (networks, working groups, ITNs or other instruments) is recommended, particularly at the international level, in order to raise the team's profile.

Team 4: Integrated molecular analysis of gene expression in liver diseases

Name of the supervisor: Philippe Lefebvre

THEMES OF THE TEAM

The team studies molecular aspects of the pathogenesis of liver diseases, focusing on nuclear receptors and transcriptional defects arising from their inactivation/malfunction, in order to understand how these lead to MASLD and its progression to liver fibrosis. In particular, the team studies transcriptional networks regulating important gene families involved in metabolic diseases.

CONSIDERATION OF THE RECOMMENDATIONS OF THE PREVIOUS REPORT

Team 4 was encouraged to maintain its high-level fundamental production while reinforcing the clinically oriented research. During the last contract, the team published both fundamental and clinically oriented work, in particular, it uncovered altered transcriptional regulatory programs occurring in dysfunctional fibrotic livers. The team also mined human transcriptomic data from patients with MAFLD to define sex- and time-of-day-specific gene expression alterations.
It was recommended that team 4 recruit an experienced full time bioinformatician and maintain attractiveness for future PhD students. The team was unable to secure this permanent position, but was able to recruit a postdoctoral fellow and an engineer.

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	2
Chargés de recherche et assimilés	0
Personnels d'appui à la recherche	3
Sous-total personnels permanents en activité	**5**
Enseignants-chercheurs et chercheurs non permanents et assimilés	0
Personnels d'appui non permanents	2
Post-doctorants	5
Doctorants	2
Sous-total personnels non permanents en activité	**9**
Total personnels	**14**

EVALUATION

Overall assessment of the team

The team addresses important, timely and clinically relevant research topics. Most of the projects are at the frontier of research in the field of transcriptional regulation of hepatocyte identity and metabolic liver disease. The scientific output of the team during the period was outstanding: 33 original papers in peer-reviewed journals (15 of which in leading position) and 6 reviews, many of them in top-ranked journals (Nature Comm., Mol. Syst. Biol, J. Hepatol. Hepatology, PNAS). The Team has an outstanding funding record: total of 4,131 k€, including fourteen grants with team members as project leader, i.e., 2 ANR, RHU, CPER, Egid, FRM-certified team. The Team has a good international reputation in the field shown by the thirteen invited presentations in international workshops (e.g., EMBO Nuclear Receptor Workshop), conferences, editorial duties in scientific journals (e.g., Cells) and numerous collaborations. The team's outreach to the general public is excellent: organisation of school visits, yearly "Fête de la Science", contributions to the productions of videos (for diabeto.net) and articles in institutional journals and the local newspapers. The team has a close collaboration with the industrial partner Genfit.

Strengths and possibilities linked to the context

The team has a well-defined research strategy for addressing timely questions in liver biology. It has made important contributions to our current understanding of the transcriptional regulatory networks operating in hepatocytes, which define hepatocyte identity. Disruption of this transcription factor network has been linked to the pathogenesis of Mash and liver cancer, a finding that is considered as a conceptional breakthrough (Dubois et al., Mol Syst Biol, 2020; Vandel et al., hepatology, 2021). Components of this network have been shown by the team to include nuclear receptors, which opens possibilities for pharmaceutical targeting. Other important scientific contributions during the period include the discovery of the role of nuclear receptor FXR in gluconeogenesis, the role of Reverbα/OGT interaction in insulin signalling and the sex-specific and circadian transcriptomes in MASLD cohorts (PNAS 2018, J. Hep 2018; Hepatology 2021; J Mol Endo 2023). In addition, the team has discovered BNC2 as an important regulator of pro-fibrotic gene expression in hepatic stellate cells. This latter finding engenders much subsequent work that is expected to illuminate novel pathways involved in stellate cell activation and their transdifferentiation to myofibroblastoid cells.
The team published 33 original papers (15 of which in the leading position) and six reviews. Publications appeared in high-profile journals including Nat Commun, Mol Syst Biol, EMBO Rep, PNAS. Team members have also contributed to additional high-profile impact studies in Nat Metab, J Hepatol, Cell Rep, Lancet and Gastroenterology.
Scientific output is proportional to team size, and all postdocs had at least one 1st author paper during the period.

During the assessment period, the team had an outstanding funding record. Team members obtained eighteen research grants and fellowships from competitive resources including three ANR and one EU program and four industrial grants for a total of 4,131 M€. Team members coordinated seven grants (2 CPER, 2 ANR, 3 FRM) and were WP leaders in six (i.e. 1 ANR, RHU, CPER, Egid, FRM-certified team).
Team members were invited to present their work in thirteen scientific workshops and meetings (including (EMBO Nuclear receptor and biological networks; Nuclear Receptor Research Network meeting; EpiBesançon, EASD-study groups Egir and NAFLD; Epigenetics international meeting; third European Fatty Liver Conference; 25th International Symposium on Glycoconjugates), and the invitations for writing commissioned review articles in the journals Cells, Epigenomics, Transcription and Gut). The Team organised the ninth French Nuclear Receptor Meeting in 2019. The Team has also fostered several important collaborations with French and European labs in the framework of different funding programs such as ANR and MSCA, and also a close collaboration with the industrial partner Genfit.

Weaknesses and risks linked to the context

Most of the Team's activities heavily rely on computational biology, but the team depends exclusively on postdoctoral fellows for bio-informatic analyses. The lack of a fully functional animal facility is a major handicap as the team relies heavily on mouse studies.

Analysis of the team's trajectory

For the next mandate, the team will pursue its projects in a highly competitive research area. The team's future research strategy is logical and forward-looking, with a continued focus on challenging questions in an area

where team members have a strong background. The main topics that will be covered include the study of molecular mechanisms involved in the development of hepatocyte identity, and further studies of hepatic stellate cell activation and liver fibrosis development, which will be investigated from the angle of transcriptional control. The different projects are closely interrelated. Importantly, the team efforts will not only clearly contribute to advancing our understanding of liver disease mechanisms, but also provide clues for new drug development. The collaboration with Genfit is very fruitful regarding exploitation of the scientific results.

RECOMMENDATIONS TO THE TEAM

As mentioned in the previous report, a priority remains to establish a permanent bioinformatician position. Given the high demand for the use of computational tools in biology, especially in the coming decade where AI is expected to transform biomedical research, we recommend at least one such position to be established in the team. This is especially relevant for this team, which has a very strong record in Systems Biology field.
The committee encourages the team to continue with the current research strategy addressing challenging questions in the areas where the team is strong.
The committee also recommends further strengthening the team activities in the direction of translational research and enhance efforts to improve valorisation of the research results.

Team 5: Nuclear Receptors in circadian biology

Name of the supervisor: Hélène Duez

THEMES OF THE TEAM

The main research interest of the team is the circadian regulation of metabolic and inflammation-related pathways. Specific aims during the assessment period included 1) gaining a better understanding of how the circadian clock operates in muscle cells and how it is altered during muscle regeneration following injury, and 2) unravelling the role of the circadian clock in the vascular epithelium and the potential defects associated with the development of atherosclerosis. These activities were extended to a mechanistic understanding of Rev-Erb function and the exploration of whether Rev-Erb or ROR ligands can have a potential therapeutic use in pathological conditions associated with defective circadian clock operation.

CONSIDERATION OF THE RECOMMENDATIONS OF THE PREVIOUS REPORT

Recommendations from the previous panel were only partially addressed.

The team improved its organisation, expanded in size, and gained international visibility. Collaborations with clinicians were developed, facilitating access to human samples.

Direct collaborations with industry were not developed during the evaluation period.

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

Catégories de personnel	Effectifs
Professeurs et assimilés	0
Maîtres de conférences et assimilés	2
Directeurs de recherche et assimilés	1
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	1
Personnels d'appui non permanents	1
Post-doctorants	0
Doctorants	6
Sous-total personnels non permanents en activité	**8**
Total personnels	**13**

EVALUATION

Overall assessment of the team

The scientific production is excellent: seven articles in leading position in high-profile specialised (Gastroenterology) and more generalist (Cell Rep.) journals, and 27 in collaboration with high-profile journals such as Nature Commun, Lancet, PNAS.
Attractiveness is excellent: the team has gained a high reputation in the circadian regulation field and was invited to 34 international meetings (Fourth Conference of the Canadian Society for Chronobiology, 2018, and EASL SLD Summit, 2023). The team obtained the label "Team of the Institut Pasteur de Lille".
The team has excellent funding: five Feder (European)/CPER grants as PI, three ANR (1 as PI) and a FRM label, for a total of 4.7 M€
The Team expanded by five additional PhD students, three postdocs and three engineers during the last contract.
The societal impact is very good, with a documented interaction with society: invitations by national medias, including radio and television (1h-radio broadcast dedicated to science for the general public, and "État de santé")

Strengths and possibilities linked to the context

The team is addressing challenging questions in the highly competitive field of circadian gene regulation and its importance for the proper operation of biological pathways involved in muscle regeneration and the regulation of NLRP3 inflammasome function.
The team has made important contributions in our understanding of how Rev-Erba controls pro-inflammatory cytokine secretion by macrophages, which established the concept of circadian immune regulation (Gastroenterology 2018). These new findings have potential clinical impact on major diseases like atherosclerosis, Duchenne Syndrome or obesity.
The Team has developed de novo, or established the use of state-of-the-art technologies, like vascular wall immune phenotyping, scRNA-sequencing, smFISH with RNA-scope, metabolic- and immuno-phenotyping, 3D organ culture systems and various imaging techniques, which place them in the position to perform research at the frontier of their field.
A powerful protocol to alter circadian clock has been established and validated (PNAS 2019), which enables the execution of reliable functional assays. In addition, other, advanced computational tools have been developed for quantitative evaluation of immunofluorescent images in muscle tissue sections (Skeletal Muscle 2018, 2023) and mathematical models for predictions of circadian regulation in the liver (PNAS 2019).

During the assessment period, 34 original papers, nine invited reviews and one editorial article were published. Seven original papers were signed in the leading position (Gastroenterology, JCI Insight, Cell Reports). Eighteen others were published in collaboration in high-profile journals such as, PNAS, Lancet, Cell Reports, Cell. Nat Cardiovascular Res., Mol Syst Biol. The team has also established excellent collaborations with other teams within the Unit.
The distribution of the scientific production between team members is appropriately balanced.
The Team was highly successful in fundraising during the period: five Feder/CPER and one ANR as PI and a FRM label, for a total of 4.7 M€

Attractiveness shown by 34 invitations to international meetings (''Rev-erb⟨ in circadian immunity', Fourth Conference of the Canadian Society for Chronobiology, Montreal, 2018; and 'Circadian clock in MASLD: pre-clinical data.' EASL SLD Summit, Prague, 2023), and the team was labelled by Institut Pasteur Lille in 2023. The team has a documented interaction with society: invitations by national media, including radio and television (1 h-radio broadcast dedicated to science for the general public, and "État de santé"). The Team has filed a patent related to circadian rhythm alteration and is in the process of drafting a second one.

Weaknesses and risks linked to the context

Funding is mostly restricted to French research funding programs or charities..
Efforts for exploitation of research findings is proved by the patent application but it is not clear what strategy will be followed for future utilisation of the protected IP on circadian rhythm alteration.

Analysis of the team's trajectory

The different specific projects pursued by the team are logical extensions of previous research. They are well designed and highly promising. They focus on challenging questions related to muscle regeneration, inflammasome pathways, adipose tissue development mechanisms and liver metabolism. The projects are interrelated, given the common theme of understanding the role of circadian regulation of the processes. The tools developed will be useful in addressing the variety of the questions across the different projects on different tissues and processes. The team had interesting findings about the roles of Pax7 progenitors in brown adipose cell differentiation as well as the crosstalk of Rev-erb with other nuclear receptors involved in liver metabolic homoeostasis. These activities fit very well with the research efforts of the other teams of the Unit. Substantial efforts will be invested—in studying the role of circadian clock alterations in vascular calcification and the development of atherosclerosis. A clear and logical research plan is presented, which is promising and is expected to illuminate some challenging questions. The relevant mouse and cellular models and state-of-the-art instrumentation are available, along with the expertise in important technologies required for these projects.

RECOMMENDATIONS TO THE TEAM

The team should strive to increase its international visibility and impact by actively participating in collaborative European Union (EU) research programs. Engagement in these initiatives can provide valuable opportunities for funding, networking, and exposure, ultimately enhancing the facility's profile within the global research community.
The team's current focus is primarily on experimental models. To strengthen translational relevance, it would be beneficial to consolidate strategic partnerships with clinical research groups. This approach could expand research into human models, allowing the team to apply findings directly to clinical contexts, such as human tissue recovery processes. In particular, exploring the role of circadian rhythms in tissue recovery could offer significant insights into time-dependent physiological responses, ultimately informing clinical practices in tissue repair and regenerative medicine.

CONDUCT OF THE INTERVIEWS

Dates

Start: 30 octobre 2024 à 13h00

End : 31 octobre 2024 à 18h00

Interview conducted : on-distance

INTERVIEW SCHEDULE

Agenda

Day 1

1 p.m.-1:30 p.m. closed door meeting of committee

link #2 open to all

1:30 p.m.-1:40 p.m. presentation of the committee

1:40 p.m.-2:20 p.m. Presentation by the director, open to all the Unit
(20 minutes presentation, 20 minutes questions) Ingrid,

team presentations (30 min each), open to all
15 min presentation (past activities and trajectory), 15 min questions

2:20 p.m.-2:50 p.m. **Team 1** Bart STAELS; Inter-organ cross talk in cardiometabolic diseases

2:50 p.m.-3:20 p.m. **Team 2** Sophie SUSEN; Heart disease, flow disturbances and haemostasis
3:20 p.m.-3:50 p.m. committee debrief (link #1)

3:50 p.m.-4:20 p.m. **Team 3** David DOMBROWICZ; Immuno-metabolic cross-talk in obesity and its associated complications and comorbidities

4:20 p.m.-4:50 p.m. **Team 4** Jérôme Eeckhoute; Integrated molecular analysis of gene expression in liver diseases

4:50 p.m.-5:20 p.m. **Team 5** Hélène DUEZ; Nuclear Receptors in circadian biology

5:20 p.m.-5:40 p.m. **Team 6** Joel HAAS/Delphine EBERLE (emergent team); Liver and adipose tissue physiomics in metabolic disease
10 min. presentation project, 10 min questions

5:40 p.m.-6:30 p.m. committee debrief of the day (link #1)

End of all sessions

Day 2 Thursday October 31

8:30 a.m.-9 a.m. committee debrief
9 a.m.-9:40 a.m. closed door meeting for committee to meet individually with PIs

9:40 a.m.-10:10 a.m. Discussion with docs and postdocs

10:10 a.m.-10:40 a.m. Discussion with permanent research scientists (other than PIs)

10:40 a.m.-11:10 a.m. Discussion with support staff (technical and administrative personnel) (on invitation)

11:10 a.m.-11:40 a.m. committee debriefing prepare questions

11:40 a.m.-12:10 p.m. Meeting with the managing bodies
Olivier COLOT, Université de Lille
Didier BONNEAU, Institut Pasteur de Lille

Frédéric BOIRON, CHU de Lille
Chantal BOULANGER, Inserm IT PMN

12:10 p.m.-12:40 p.m. Closed door meeting of committee (in presence of the HCERES scientific advisor

12:40 p.m.-1:10 p.m. Discussion with the directors

1:10 p.m.-4 p.m. Final debriefing, finalize report

PARTICULAR POINT TO BE MENTIONED

N/A

GENERAL OBSERVATIONS OF THE SUPERVISORS

RÉPUBLIQUE FRANÇAISE
Liberté
Égalité
Fraternité

Université de Lille

valorisation

Les vice-présidents recherche de l'Université de Lille

à

- Département d'Evaluation de la Recherche

Objet : Courrier d'observation de portée générale Université Lille DER-PUR260024874

Chère, Cher collègue

L'université de Lille tient tout d'abord à remercier le comité de visite HCERES pour l'attention qu'il a portée au travail mené par l'unité RNMCD - Récepteurs nucléaires, maladies cardiovasculaires et diabète - et pour la qualité de l'évaluation qu'il a produite.

Le comité de visite a été l'occasion, pour les membres de l'Unité de Recherche et pour l'Université, d'approfondir certaines questions et de répondre aux interrogations des experts, dans un esprit constructif dont il faut se féliciter.

Les recommandations émises dans le rapport d'évaluation seront précieuses pour l'unité pour le déploiement de son projet lors du prochain contrat.

Vous trouverez ci-joint un relevé des erreurs factuelles à corriger en vue du rapport définitif.

Nous vous prions de croire, chère collègue, cher collègue, à l'expression de notre considération distinguée.

Pour le Président et par délégation,
Les Vice-Présidents Recherche de l'Université de Lille

Olivier Colot

Sandrine Chassagnard

Direction générale déléguée
Recherche et valorisation
Direction d'Appui à la Recherche

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