Evaluation of Research

EVALUATION REPORT ON THE UNIT:

BGE - Laboratoire de biosciences et bioingénierie pour la santé

UNDER THE SUPERVISION OF INSTITUTIONS ANS RESEARCH BODIES:

Université Grenoble Alpes - UGA
Institut national de la santé et de la recherche médicale - Inserm
Commissariat à l'énergie atomique et aux énergies alternatives - CEA

EVALUATION CAMPAIGN 2025-2026
GROUP A

Report published on February, 05 2026

High Council for the evaluation of research and higher education

On behalf of the committee of experts:

Pascal Barbry, Chairman of the committee

For Hcéres:

Coralie Chevallier, President of Hcéres

In accordance with articles R. 114-15 and R. 114-10 8° of the Research Code, evaluation reports drawn up by the committees of experts are signed by the chairpersons of these committees and countersigned by the president of Hcéres.

To facilitate the reading of the document, the terms used in this report to designate functions, occupations or responsibilities (expert, researcher, teacher researcher, professor, lecturer, engineer, technician, director, doctoral student, etc.) are generic and gender neutral.

This report is the outcome of an evaluation by a committee of experts the composition of which is specified below. The assessments it contains are an expression of the independent and collegial deliberation of the committee. The data within it are the certified accurate data extracted from the application forms submitted by the supervising bodies on behalf of the unit.

This version of the report is public under the provisions of article 114 – 23 of the Research Code. Sections of the report considered confidential, and responses to points of attention from supervisors are not included in it.

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M. Philippe Roux : Vice-président Recherche.
M. Jean-François Poisson : directeur du pôle Chimie Biologie Santé

UNIT CHARACTERISATION

- Name: Biosciences et bioingénierie pour la santé
- Acronym: BGE
- Label and number: UA13
- Number of teams: 3
- Composition of the executive team: Ms Marie-Odile Fauvarque, Director of the Unit; Ms Myriam Ferro, Deputy-Director of the unit and Director of the UAR 2048 ProFI

SCIENTIFIC PANELS OF THE UNIT

Panel 1
SVE3: Living Molecules, Integrative Biology (From Genes and Genomes to Systems), Cell and Development Biology for Animal Science
Panel 2
SVE7: Prevention, Diagnosis and Treatment of Human Diseases
Panel 3
SVE4: Immunity, Infection and Immunotherapy
Panel 4
SVE6: Human Physiology and Physiopathology, Ageing
Panel 5
SVE5: Neurosciences and Nervous System Disorders

THEMES OF THE UNIT

The long-term goal of BGE is to advance biomedical knowledge and shape personalized medicine strategies. To that end, it develops cell and tissue engineering approaches to create new diagnostic tools and biotherapies. The work accomplished during the last contract has elucidated novel molecular and cellular mechanisms involved in diabetes, cancers, and rare diseases. These developments benefit from a large multidisciplinary expertise spanning from large-scale biology and data analysis to cell biology and engineering, resulting in new analytical methods in high-throughput and high-content approaches (proteomics, functional genomics, molecular screening, bioinformatics).

HISTORIC AND GEOGRAPHICAL LOCATION OF THE UNIT

BGE was created in 2011 as a research entity of the Institut de Recherche en Technologies et Sciences pour le Vivant (iRTSV; Institute of Research into Life-Sciences and associated Technology), on the site of CEA-Grenoble as the BGE-U1038 unit (Biologie à Grande Échelle), led by Dr. J Garin (2011–2015) and then by Dr. X. Gidrol (2016–2020). Historically, BGE resulted from an association of several groups working on proteomics, computational biology, nanobiotechnnology, signaling, Drosophila innate immunity, and pharmacological screening. From 2021 to 2022, these three teams integrated the BioSanté unit project (U1292), which resulted from the merge of two previous units (U1036 and U1038) along with a research team from INP Grenoble. BioSanté was directed by Dr. C. Picart. In 2022, an institutional steering committee with representatives of UGA, Inserm, CEA, and CNRS, reorganized the BioSanté unit, resulting in the creation of BGE UA13 in January 2023, composed of three research teams Biomics, Edyp and Gen&Chem, under the direction of Dr. M-O. Fauvarque.

BGE comprised 86 staff members, including 56 permanent investigators and 2 administrative staff in December 2024. The unit is affiliated to three institutional bodies: CEA, Inserm and University Grenoble Alpes, with CEA being the main provider of permanent positions (74%, followed by 16% from CNRS, 14% from Inserm, and 6% by UGA). An important characteristic of the laboratory is its tight links with active platforms in proteomics, cellular microfluidics and pharmacology. Multidisciplinary approaches development in genomics, proteomics, imaging and medium throughput screening assays are central to the activity of the unit, and sets it apart within the French scientific landscape. Biomics and Edyp are located in two adjacent buildings at the CEA center (Institut de recherche de Grenoble, Irig), respectively. These buildings also host collaborators from the LPCV laboratory (Laboratoire de Physiologie Cellulaire et Végétale, Irig) and from DTIS (Département des Technologies pour l'innovation et la santé, Leti). Gen&Chem is located in Building C3, approximately a 15-minute walk or a 5-minute ride by bike or Twizy—both available free of charge on site.

UNIT RESEARCH ENVIRONMENT

The unit is well integrated in local, national, and international research ecosystems, as leader or partner of four France 2030 PEPR programs and several local PIA-funded initiatives (e.g., EUR CBH, Labex Gral and Gimed, CDPs). The four PEPR programs in the France 2030 initiative are: (i) Bioproduction and Biotherapies, Targeted Priority Project BioSkin (ii) MedooC, Piloting member and Targeted Priority Project Magic (with Xavier Gidrol acting as the general coordinator of this PEPR) (iii) Numerical Health, Action Digphat (Pharmacological Twins) (iv) Cell-ID, Strategic Priority 1, Action 3 (Single-cell Proteomics).
The unit is a founding member of two national research infrastructures: ProFi, handled by CNRS Biology and ChemBioFrance by CNRS Chemistry. Both memberships have been central for developing cutting-edge technologies, and foster collaborations far beyond the unit. ProFi is now an UAR unit since 2025, directed by Myriam Ferro, member of Edyp and deputy-director of the BGE unit. Christophe Bruley and Yohann Couté, group leaders of Edyp, are members of ProFi steering committee. M-O. Fauvarque was member of the executive board of ChemBioFrance until 2024.
At the international level, the unit belongs to European networks and societies (Proteocure Cost-Action, Katy and Canvas research infrastructure action and twinning projects, EuPA in proteomics, Eurostar, Euroocs).
There are several industrial partnerships and the unit develops clinical collaborations with Chuga (Centre Hospitalier Grenoble Alpes).

UNIT WORKFORCE: IN PHYSICAL PEOPLE AS OF 31/12/2024

Catégories de personnel	**Effectifs**
Professeurs et assimilés	1
Maitres de conférences et assimilés	1
Directeurs de recherche et assimilés	4
Chargés de recherche et assimilés	4
Cadre scientifique CEA	33
Personnels d'appui à la recherche	9
Non cadre scientifique CEA	4
Cadre administratif CEA	0
Non cadre administratif CEA	1
Sous-total personnels permanents en activité	**57**
Enseignants-chercheurs et chercheurs non permanents et assimilés	0
Cadre scientifique CEA non permanent	0
Personnels non permanents d'appui à la recherche	5
Non cadre scientifique CEA non permanent	2
Cadre administratif CEA non permanent	0
Non cadre administratif CEA non permanent	0
Post-doctorants	4
Doctorants	15
Sous-total personnels non permanents en activité	**26**
Total personnels	**83**

BREAKDOWN OF THE UNIT'S PERMANENT STAFF BY EMPLOYER: IN PHYSICAL PEOPLE AS OF 31/12/2024. NON-SUPERVISING EMPLOYERS ARE GROUPED ON THE HEADING "OTHERS".

Nom de l'employeur	EC	C	PAR
UGA	2	0	1
CEA	0	33	5
Inserm	0	2	6
Autres	0	6	2
Total personnels	**2**	**41**	**14**

GLOBAL ASSESSMENT

The unit has made several excellent scientific contributions that are described below. It was also excellent in term of grant acquisition, and it plays a central role in several consortia. The development of innovative bioanalytical tools and instrumentation benefits of strong links with the CEA-Leti, and this unique configuration in France allowed several breakthroughs, such as the characterization of biomedical structures of very high mass, or the creation for cell and tissue engineering of miniaturized devices combining microfluidics and living cells in organs and organoids on a chip (O&OoC). BGE investigators also worked on proteomic methodologies for the analysis of non-canonical histone modifications, and developed AI-driven predictive models in pharmacogenomics. The BGE unit hosts two nationally recognized platforms: the Edyp-Service proteomics platform embedded in Edyp team, part of the national research infrastructure ProFi, and the CMBA (Screening for Bioactive Molecules) platform, integrated into the ChemBioFrance national infrastructure. These platforms are operated by dedicated research engineers and technicians whose expertise supports not only routine use but also method development and innovation aligned with instrument evolution.

The unit's scientific achievements are excellent. Scientific production is represented by few High-impact publications in leading position (2 Nature Commun, 1 NAR, 1 Genome biology, 1 PNAS, 1 Nature Microbiology) and more in collaborations (11 Scientific Reports, 9 Nature Commun, 8 Journal of Proteome Research, 4 Nucleic Acids Research, 5 eLife, 5 PNAS).

Central roles played in project organization such as the PEPR Medooc further illustrate the visibility of the unit. The general organization of the unit is excellent, and the governance is well appreciated at the same time by the governing bodies and the staff.

The unit's resources are excellent, supported many different competitive fundings, one time obtained at a European level (Feder, instrumentation, 512 k€), five times as partners of Europe 2020 grants (total 2M€), 25 ANR, seven as leaders (total 3.6 M€), five PEPR (4 as leader, total 6M€).
Training is represented by 21 defended theses, and eleven postdoctoral contracts. This could be strengthened based on the fact that there is 25 HDR in the unit.
The unit has also organized international events, such as the European Congress of the European Organ-on-Chip Society and the International Conference of Deans of French-speaking Pharmacy Faculties.

The Interactions with the cultural, and socioeconomic world are very good to excellent. BGE collaborated with private companies (exp: Clarins to decipher cellular response mechanisms after photo-pollution, and Biotherm/L'Oréal to investigate epidermal regeneration and stem cell functionality). The unit obtained two Cifre fellowships, developed a spin-off, Genel, and is very active in popular sciences with several interventions in national media (Le Monde, France Culture, etc) and is excellent in participating in social debates.

Overall, assessment of the Unit is excellent.

DETAILS OF THE EVALUATION OF THE UNIT

A - CONSIDERATION OF THE RECOMMENDATIONS IN THE PREVIOUS REPORT

These are recommendations for the whole unit Biosanté (composed of 8 teams including the actual BGE teams) and the answers are specific for the three teams that constitute BGE unit.

1/ Several teams publish many small articles but lack highly visible and highly cited publications, which should be a focus. Common discussions and challenges at both the unit and team leader levels should help raise the overall standard.

Regarding the scientific production of Biomics, Edyp and Gen&Chem, the previous Hcéres report did not make any such remark or specific recommendations for improvement. The publication record of each of the three teams was rated positively

2/Some teams may also improve their output by increasing focus and internal collaboration.

This recommendation does not seem to concern either of one of the three BGE teams. Indeed, in the previous Hcéres evaluation report it was quoted: - Biomics: "The team has an outstanding scientific output" -Edyp: Recommendations on scientific production and activities: "No specific recommendations are to be made. In fact, the committee recommends the team to continue its outstanding work. - Gen&Chem: Internal collaborations have been reinforced with the Edyp and Biomics team on several research projects.

3/ The internal life appears satisfactory for most members, and some initiatives (retreats, internal master's grants, common meetings, newcomer day, etc.) are well thought out. However, more actions are needed at the unit level to strengthen cohesion.

This recommendation concerned the BioSanté unit with 8 teams coming from three units. Concerning BGE UA13 unit, since its creation in January 2023, the following actions have been implemented to foster a vibrant internal culture and bolster unit cohesion. The Unit Council (CU) meets three times a year, General Assemblies and Off-Site BGE Days take place one or two times a year to encourage discussions and cohesion between all BGE members, introduction of a student/young doctoral student event, which was held in 2023 and 2024 and was very successful, The Irig Health Department (of which BGE is one of two involved units) organizes half-day events where PhD students can give short presentations or seminars, doctoral students have been encouraged to present their work at events in Grenoble (thematic clubs, Labex Gral, etc.) as well as at national and international conferences, BGE meetings, which gather all BGE members, are organized once a month and include scientific presentations and information about unit life, following the general assembly in January 2025, and in response to suggestions and needs expressed by BGE members, working groups have been set up for engineers, researchers, and students (PhD and Master's level) with the dual objective of improving mutual understanding (who is doing what and where) and fostering scientific discussions from which potential collaborations could emerge.

4/ A concern is the prevalence of very short postdoc contracts (often 1-year), which are unattractive and stressful for researchers.

Answer: In BGE UA13, between 2019 and 2024, there were eleven postdoctoral contracts (see table below). Five of these contracts are of ~ one year and only one was below one year. We tend to avoid these short-term contracts and, for some of them, try to extend them, according to institutional rules. Notably, one former post-doctoral fellow was hired as a CEA researcher within the unit.

5/ Another point is ensuring that, despite multiple supervising bodies, all members have equal access to training and career development.

Answer: The BGE unit adopts a human resources policy that is firmly committed to non-discriminatory practices, regardless of institutional affiliation, gender, gender identity, sexual orientation, disability, or ethnicity, in all aspects of professional development. The unit ensures equal access to training opportunities, internal mobility and career progression, thereby fostering an inclusive and supportive work environment. The unit implements policies to reduce biases in recruitment and promotions, such as ensuring diversity on all committees and decision-making bodies within our institutions (CEA, Inserm, UGA).

6/ the unit should prepare for the open data era (electronic notebooks, organized and accessible data).

answer: Even though this recommendation concerns the BioSanté unit, BGE is committed to promoting open data and Fair principles, ensuring widespread accessibility of research outputs, especially via open repository dedicated to the publications (ex-HAL), data (ex ProteomExchange for proteomics data) or software (GitHub).

7/ As with internal life, efforts should be made to stimulate contact and cooperation between unit members, especially those previously belonging to different units. The committee is confident that the new Direction is fully aware of this.

Answer: Even though this recommendation concerns the BioSanté unit, which comprises eight teams from three different units, we are fully aware that efforts must be made to integrate newcomers into unit life and current projects. This integration has already occurred, as new unit members arrived when BGE was re-created in 2023. The same situation is currently occurring with the arrival of people from Arnaud Millet's team in September 2025. To facilitate their integration, several actions have been taken: 1) They were invited to the general assembly in January 2025, where they started to meet BGE members, especially during team-building activities. 2) They have been invited to all BGE monthly meetings since January 2025; 3) Discussions about the offices and laboratories they will be allocated started in December 2024.

8/ A scientific advisory board should be established promptly to guide the unit's project, increase visibility, support technology transfer strategies, and strengthen clinical and translational research. A deputy director should also be nominated to assist the director. Finally, the situation of the three new (ex-IMAP) teams should be carefully considered, as it may weaken the unit.

Answer: These recommendations relate to the BioSanté unit while not BGE unit. Indeed, regarding BGE UA13 1, a SAB was established and conducted a two-day visit on 5th of December 2024, with the aim of guiding the BGE project. The SAB's recommendations were considered when preparing the current Hcéres evaluation. A deputy-director has been appointed from the start of the unit creation and is proposed for the future BGE project. She was also the vice director of BGE U1038.

The situation regarding the three new ex-Imac teams is not relevant to BGE and no longer exists.

B - EVALUATION AREAS

When considering the references set in the research units' evaluation guidelines, the committee will see to it that outstanding elements that relate to the strengths and weaknesses of the unit are pinpointed. Each assessment must be backed up with observable facts, namely from elements submitted in the portfolio. The committee assesses whether the unit's performance is consistent with its profile of activities. Information in boxes is summarily drafted based upon evaluative elements described in the subsections on the strengths and weaknesses.

EVALUATION AREA 1: THE UNIT'S SCIENTIFIC OBJECTIVES, ORGANIZATION AND RESOURCES

Assessment of the unit's scientific objectives, organization and resources

The unit has excellent scientific objectives and organized accordingly to reach them. It develops cell and tissue engineering approaches to create new diagnostic tools and biotherapies. The work accomplished during the last contract has elucidated novel molecular and cellular mechanisms involved in diabetes, cancers, and rare diseases. The unit's resources are excellent, supported many different competitive fundings, one time obtained at a European level (Feder, instrumentation, 512 k€), 5 times as partners of Europe 2020 grants (total 2M€), 25 ANR, 7 as leaders (total 3.6 M€), 5 PEPR (4 as leader, total 6M€). Premises, equipment and technical skills are very good to excellent (The BGE unit hosts two nationally recognized platforms: the Edyp-Service proteomics platform embedded in Edyp team, part of the national research infrastructure ProFi, and the CMBA (Screening for Bioactive Molecules) platform, integrated into the ChemBioFrance national infrastructure. The unit's practices to comply with the rules and guidelines set by its supervisory bodies in terms of human resources management, safety, environment and data protection as well as scientific assets are fully appropriate and considered as outstanding.

1/ The unit has set itself relevant scientific objectives and is organized accordingly.

2/ The unit has resources adapted to its scientific objectives, profile of activities and research environment and mobilizes them.

3/ The unit has premises, equipment and technical skills adapted to its scientific policy and research objects.

4/ The unit's practices comply with the rules and guidelines set by its supervisory bodies in terms of human resources management, safety, environment and data protection as well as scientific assets.

Context-related strengths and opportunities for the four references above

The long-term goal of BGE is to advance biomedical knowledge and shape personalized medicine strategies. To that end, it develops cell and tissue engineering approaches to create new diagnostic tools and biotherapies. The work accomplished during the last contract has elucidated novel molecular and cellular mechanisms involved in diabetes, cancers, and rare diseases. These developments benefit from a large multidisciplinary expertise spanning from large-scale biology and data analysis to cell biology and engineering, resulting in new analytical methods in high-throughput and high-content approaches (proteomics, functional genomics, molecular screening, bioinformatics). Active collaboration with the nearby Leti allows the creation on unique lab-on-a-chip devices with diverse applications in mass spectrometry and cell biology. This work is complemented by the development of pharmacogenomics approaches. The acquired expertise allows the production of organoids, and organoids-on-chip systems to more closely mimic the physiological reality of normal and pathological tissues. Applying it to patient-derived cells may result in "patient avatars", on which it could become possible to evaluate personalized treatments and assess new drug candidates.
Institutional funding is relatively modest (UGA, 10k€/year + Inserm, 105-110 k€). The unit obtained different competitive grants (1 European grant as leader (Feder, instrumentation, 512 k€), partners in five Europe 2020 grants (total 2M€), 25 ANR, 7 as leaders (total 3.6 M€), five PEPR (4 as leader, total 6M€). The CEA supported the unit with ten doctoral fellowships. Funding from the platform services are around 800 K€. The fundings obtained plays a key role for supporting the unit's scientific activities. Overall, these resources are correctly adapted to support the unit's scientific objectives, correctly shared between teams and they are properly articulated with the research environment.
The BGE unit hosts two nationally recognized platforms: the Edyp-Service proteomics platform embedded in Edyp team, part of the national research infrastructure ProFi, and the CMBA (Screening for Bioactive Molecules) platform, integrated into the ChemBioFrance national infrastructure. These platforms are operated by dedicated research engineers and technicians whose expertise supports not only routine use but also method development and innovation aligned with instrument evolution.
In addition to its own technological platforms, the BGE unit also benefits from several core facilities hosted within the Irig institute :1/ advanced imaging technologies through the µLife platform, where the Biomics team contributes actively to user training and the sharing of instrumentation. 2/ ISBG biophysics and structural biology platform (Institut de Biologie Structurale, IBS), for high-end equipment and expertise in structural analysis.3/ animal housing facilities (Irig)
The unit's practices to comply with the rules and guidelines set by its supervisory bodies in terms of human resources management, safety, environment and data protection as well as scientific assets are fully appropriate, and the staff is well sensitized to the different issues raised in term of human resources, environment and data protection.

Context-related weaknesses and risks for the four references above

Several members of the staff have mentioned the issue of having the unit split between two distinct locations separated by a 5-10-minute walk, and the discussion with the CEA representatives clearly pointed out that this situation will not be changed soon.
Few European grants but balanced by the ability to mobilize national resources
An ageing unit, which needs to anticipate departures in order not to lose expertise and workforce.

EVALUATION AREA 2: THE UNIT'S SCIENTIFIC RESULTS, IMPACT AND ATTRACTIVENESS

Assessment of the unit's scientific results, impact and attractiveness

The unit's scientific achievements are excellent and research activities of the unit result in excellent scientific production. The unit published 265 articles in peer-reviewed journals in 2019-2024 among which 73 (27.5%) are published as first, last and/or corresponding authors (PDC). These publications appear both in generalist journals and in specialized journals aligned with BGE's key research areas. The articles include 12 International Journal of Molecular Sciences, 11 Scientific Reports, 10 Nature Communications (2 in PDC), 8 Journal of Proteome Research, 6 Nucleic Acids Research (only one in PDC), 5 eLife (not in PDC), 5 PNAS (1 in PDC). Participation of the unit in the coordination and management of its community is very good to excellent. The unit organized scientific events, such as the 2022 edition of the conference of the European Organ-on-Chip Society. 21 PhD students defended their thesis, with all having at least one article published or in progress. Eighteen PhD students obtained at least 1 publication during their thesis, with 15 as first author. There were 11 postdoctoral contracts. Five of these contracts are for ~ 1 year and only one was below 1 year. One former post-doctoral fellow was hired as a CEA researcher within the unit. The unit's scientific integrity is excellent, as the general ethics and efforts to develop open science, in agreement with the policies of its institutional bodies.

1/ The unit is recognized for its scientific achievements that meet quality criteria.

2/ The research activities of the unit result in quality scientific production.

3/ The unit participates in the coordination and management of its community.

4/ The unit's scientific production respects the principles of scientific integrity, ethics and open science. It complies with the guidelines applicable in this field.

Context-related strengths and opportunities for the four references above

Two important outputs of the unit are : (1) members published in Nature Communications (2024) a method to perform cell and tissue engineering using microfluidics, organs and organoids on a chip (O&OoC) in miniaturized devices that contain substructures of living organs in a controlled microenvironment, and which can reproduce some aspects of the architecture, dynamics and functions of the organ, or even of several organs connected to each other, with the possibility to control in real time the different functions. This new generation of O&OoC based on patient-derived cells and tissue precursors as organoids, can recapitulate organ physiology, and combine it with advanced "on-chip" monitoring capabilities; (2) proteomic methodologies were developed for the analysis of both classical and non-canonical histone modifications (e.g., lysine crotonylations) (NAR, 2020). They open the floor to determine the functional roles of these recently discovered acylations. Elucidation of the cellular functions bear by these non-canonical histone marks can lead to important scientific outputs.
The unit published 265 articles in peer-reviewed journals in 2019-2024 among which 73 (27.5%) are published as first, last and/or corresponding authors (PDC). The "PDC" articles reflect the research activity of BGE members. These publications appear both in generalist journals and in specialized journals aligned with BGE's key research areas. The articles include twelve International eight Journal of Proteome Research, 6 Nucleic Acids Research (only one in PDC), 5 eLife (not in PDC), 5 PNAS (not in PDC).
The unit organized scientific events, such as the 2022 edition of the conference of the European Organ-on-Chip Society. Several members of the unit serve as editors in Molecular and Cellular Proteomics, International Journal of Mass Spectrometry, Genome Biology, BMC Bioinformatics, Frontiers in Oncology, International Journal of Molecular Sciences. They are also regular reviewers for high-impact scientific journals (Nature Communications, iScience, NAR, PNAS). A large amount of BGE scientists, both researchers and ITAs, serve as reviewers for high-impact scientific journals (Nature Communications, iScience, NAR, PNAS). The unit maintains active participation in local, national, European, and international research networks (ITMO -Technologie pour la santé; Evaluator ERC Advance Grant; Scientific Advisory Board of « l'Institut Paoli Calmettes » Marseille; national scientific committee, Fondation Arc; European Network Gastrointestinal Cancers; Vice Dean of the pharmacy faculty).
Twenty-one PhD students defended their thesis, with all having at least one article published or in progress. Eighteen PhD students obtained at least one publication during their thesis, with fifteen as first author. The others signed in high rank in a high visibility journal (iScience, IEEE Access, TIBS) or have papers in preparation. On average, each PhD student was associated to 3,3 publications.
Between 2019 and 2024, there were eleven postdoctoral contracts. Five of these contracts are of ~ one year and only one was below 1 year. One former post-doctoral fellow was hired as a CEA researcher within the unit.

Scientific integrity and open science strategy follow supervisory bodies rules. The careful supervision of junior researchers and regular reviews of manuscripts, scientific strategies and experimental designs is offered in lab meetings. Regular encouragement to complete online training on research integrity (offered by the CEA) is provided to all staff during BGE meetings. In addition, all PhD students follow a dedicated training program on research integrity and ethics at UGA.

Context-related weaknesses and risks for the four references above

Short term post docs positions (among 11, 5 for one-year contract and one below one year)
There are few European grants, though balanced by the ability to mobilize national resources, and these international grants need to be increased. Each group needs also to secure enough PhD students, since there is at the current time a low ratio of PhD/HDR in the unit.
Few generalist papers in leading positions (2 Nat Commun)

EVALUATION AREA 3: INCLUSION OF RESEARCH ACTIVITIES IN SOCIETY

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

The Interactions with the cultural, and socioeconomic world are very good to excellent. BGE collaborated with private companies (exp: Clarins to decipher cellular response mechanisms after photo-pollution, and Biotherm/L'Oréal to investigate epidermal regeneration and stem cell functionality). The unit obtained two Cifre fellowship, developed a spin-off, Genel, and is very active in popular sciences with several interventions in national media (Le Monde, France Culture, etc) and is excellent in participating in social debates such as the Cosmethics program about actions at the intersection between beauty and health program (Cosmethics), and the MyWayToHealth program about the patient's trajectory to health.

1/ The unit stands out for the quality of its interactions with the cultural, and socioeconomic world.

2/ The unit develops products and services for the cultural, socioeconomic world.

3/ The unit shares its knowledge with the public and participates in social debates.

Context-related strengths and opportunities for the three references above

The academic work is well articulated with collaboration with private companies, illustrated by long standing collaborations. Genomics established collaboration with Genel, a spin-off from Biomics (Cifre PhD fellowship), with Clarins to decipher cellular response mechanisms after photo-pollution, and Biotherm/L'Oréal to investigate epidermal regeneration and stem cell functionality, with a European collaborative network involving four small and medium-sized enterprises: TrueMass (Netherlands), Fossiliontech (Spain), SpectroSwiss (Switzerland), and Coave Therapeutics (France). A Cifre PhD thesis is funded by a fellowship from Adlin Science. Gen &Chem collaborated with Nvidia to evaluate their GPU-accelerated bioinformatics toolkit, Clara Parabricks, for the processing of genomic and transcriptomic data, collaborates on Edelris S.A. proprietary compound library (>500,000 compounds), for the identification of USP8 chemical binders, collaborates with Almac Discovery to characterize the activity of DUB inhibitors on calcium signaling.
In total, there were 6 Industrial partnerships involving all 3 teams, resulting in 2 PhD thesis (Cifre) for Biomics and Edyp, and there were three Prematuration projects (OrgDrop, with Biomics, Spatium, with Gen&Chem, and BAC-Phy, with Edyp). There were also six translational projects, including four by the new head of Biomics.
BGE is very active in popular sciences with several interventions listed in the report in national media (Le Monde, France Culture, etc) (excellent).
Cross-Disciplinary Programmes (CDP) at Université Grenoble Alpes (UGA) integrate multiple disciplines, including the hard sciences and the humanities and social sciences (SHS). BGE is involved in the actions at the intersection between beauty and health (Cosmethics), related to the project of Biomics in skin disease research with the development of vascularized and pigmented skin organoids.
MyWayToHealth is about the patient's trajectory to health, and it is aligned with Edyp's expertise in tracking specific biomarkers in patient-derived biological samples. CMBA's capability to assess the pharmaceutical

potential of insect meal fractions using HTS and HCS strategies is mobilized in the context of an inter-disciplinary project called Punaises, analyzing insect consumption acceptance and benefits.

Context-related weaknesses and risks for the three references above

None

ANALYSIS OF THE UNIT'S TRAJECTORY

The positioning of the unit at the interface between biotechnological developments and biology is original and important to maintain. It is relevant for all institutional bodies (CEA, with the strong existing articulation with LETI, INSERM, with the perspectives in personalized medicine, and the University, through the developing collaborations with clinicians). The multidisciplinary organization of the teams puts together strong expertise in biology, biochemistry, analytical sciences and data science. This diversity fosters innovation in each of its pillars of activity and perfectly position the team for handling ambitious integrative projects. The high commitment of the whole staff has been clearly stressed, and the governance appears to have created a strong and cohesive spirit.

As many French units, BGE appears as an ageing unit, which need to anticipate departures in order not to lose expertise and workforce. This question can be particularly sensitive with regard to the platforms that perform their activity for a larger community located outside the unit. A significant part of the scientific output of the unit relies on expensive instruments with a high maintenance cost, and it is unclear how this budget will be secured.

Biomics is undergoing a profound reorganization, which has been anticipated by the future leadership. The renewed focus on pancreatic diseases will serve as a key step in this transition, enabling him to take the lead while building on the expertise developed during the previous mandate.
Edyp has developed extensive expertise in biology, biochemistry, analytical sciences, and data science, enabling major advances in biomarker discovery and methodological innovation. The focusing of its future research on idiopathic pulmonary fibrosis IPF, comes after recruitment of a CEA researcher. Combining advanced proteomic methods with innovative biological models and computational analysis to decipher the molecular, cellular, and tissue-level mechanisms of fibrosis is sound and this project is of outmost interest. Considering the very high competition in that field now, a definition of a limited number of clear and accessible objectives seems mandatory. In parallel, the emergence of the MetaNucleoMics team in the future unit will allow to develop the strong expertise of the team in epigenomics.

Over the years, the Gen&Chem team has established its expertise in ubiquitination, identifying critical deubiquitinating enzymes (DUBs) and DUB inhibitors, revealing their essential roles in immune regulation, intracellular signalling, trafficking, cell proliferation, neuronal activity, oncogenic pathways, and rare diseases (Incontinentia pigmenti and Cushing's disease). Since January 2023, with the arrival of a new CEA researcher, the team has expanded its expertise into pharmacogenomics through the bioinformatics integration of –omics and clinical data to predict patient responses to cancer treatments. An addition recruitment further strengthens the team's computational capabilities, enabling the use of pharmacogenomics approaches in predictive pharmacology and the application of generative AI for designing therapeutic peptides or compounds based on large-scale experimental data. Since 2023, the arrival of a co-team leader reinforces an organization integrating wet and dry lab.

RECOMMENDATIONS TO THE UNIT

RECOMMENDATIONS REGARDING THE EVALUATION AREA 1: SCIENTIFIC OBJECTIVES, ORGANIZATION AND RESOURCES OF THE UNIT

It became apparent to the committee that the groups are organized more as silos than as a single global entity, and it is suggested that work be done to build bridges between the groups. One solution could take the form of enhanced numbers of co-supervision of a few students between several teams, on a shared theme. The emergence of new projects in the next contract probably offers an opportunity to launch such an initiative. This could be encouraged by a working document from management that would indicate the way forward to fostering this cohesion and promoting exchanges.
Building strong relationships with clinicians is another very demanding task that must be addressed by each team. The laboratory's expertise in processing multidimensional biological data or developing special cell cultures is certainly of great interest to many talented young clinicians. Relationships with clinicians would certainly benefit in the long term from the creation of special relationships between young clinicians to be welcome into the unit during a master's or doctoral program, who would then continue their interactions.
Recruitment of postdoctoral fellows is important to develop novel fields and acquire expertise. The low number of postdocs needs to be addressed, and their number has to increase.
The discussion with the students revealed that they were mostly presenting their results at the level of the team.". A stronger exposure of the students in front of the whole unit would be worth considering. It would help them to conceptualize better their project and train them to present it in front of a more diverse audience. This could take the form of an annual presentation under the form of a seminar.
One aspect that was discussed at several occasions during the audit was the different access to the formations, due to the many institutional bodies that are represented. It might be useful to draw up a summary document describing the various options available depending on each employee's status, which would certainly help to address some of the concerns that have been raised.
The BGE unit provides significant national and international visibility for Grenoble-Alpes University. However, concerns remain regarding the very limited number of teaching and research staff (currently one professor and one associate professor). Increasing university-supported human resources would help foster promising academic careers and strengthen the unit's development, in line with the high scientific quality of the unit.

RECOMMENDATIONS REGARDING THE EVALUATION AREA 2: THE UNIT'S SCIENTIFIC RESULTS, IMPACT AND ATTRACTIVENESS

The scientific production is very good to excellent for the 3 teams, but the production is rather in specialized high rank journals for all 3 groups. There is therefore room for improvement, and each team needs to think carefully about how to achieve this. All teams have been very successful in national funding, which allowed the renewal of cutting-edge instrumentation, despite high cost and rapid technological evolution. A longer-term strategy needs to be implemented, to allow the arrival of the next instruments. A possible perspective might be to further develop international funding, for instance by contributing more to European projects. The developing collaborations with key labs in Netherlands and elsewhere are probably going into that direction and were positively appreciated. It is also noted that some participations to national and European research networks (DigPhat, Katy, Canvas, Proteocure) have already provided privileged access to cutting-edge scientific advancements.

This is of particular note for Biomics as a team member departure was holding most of its profile (Orchid, EurooCS, Med-ooC, etc). An explicit strategy for how Biomics will remain visible in the international community needs to be defined.
With idiopathic pulmonary fibrosis IPF established as a flagship program, Edyp team focus on an end-to-end pipeline from discovery to clinical utility, while limiting other disease projects to a few high-priority indications. Key priorities include securing longitudinal human samples, implementing robust biomarker verification workflows, and strengthening computational and proteomic platforms. Clear key performance indicators and risk mitigation strategies are essential to guide progress of this project in a very competitive field.
The Gen&Chem team should continue to make profit of the strong connection with the CMBA platform and to develop connections between wet and dry lab projects, notably thanks to the newly recruited bioinformaticians, and to implement joint projects. Strategies to develop links with clinicians should be considered. With 3 new PIs who have recently joined the Team, an increase in the number of PhD students is expected, which should help the Team to increase its scientific production, particularly as first, last and/or corresponding author.

RECOMMENDATIONS REGARDING EVALUATION AREA 3: INCLUSION OF RESEARCH ACTIVITIES IN SOCIETY

Strong opportunities are provided by the existing connections with the department of technology for health (CEA). They clearly need to be maintained, and even further developed. This can create opportunities for potential economic exploitation through the creation of start-ups in line with « Bench to bedside » projects in close partnership with Inserm. Some new opportunities can be offered by recent new recruitments, which can foster closer links with clinicians (e.g. lung pathologies, studies of nuclear complexes in transcription, pharmacogenomics and AI-driven therapeutic peptides design).

Biomics (and the future Imac2) have also excellent opportunities for developing public-private partnerships and translational research. The two Cifre theses (Biomics, Edyp) illustrates the good capacity to interact with the non-academic sector, and this effort should continue. This aspect should be reinforced in all groups, as it may also help by accessing competitive public-private grants.
Other aspects of research activities in society are already well treated and will not be discussed here.

TEAM-BY-TEAM

Team 1: Biomics - Biomicrotechnology and functional genomics

Name of the supervisor: Mr. Xavier Gidrol, with Mr. Eric Sulpice as Deputy-Director

THEMES OF THE TEAM

The team studies pancreas- and skin-related diseases, with a particular focus on pancreatic cancer, diabetes and its complications such as skin ulcers, and skin cancers including Xeroderma pigmentosum. Their research relies on advanced cellular and tissue models such as organoids and organ-on-chip systems, which they use to generate pancreas, skin, and blood vessel organoids. These models aim to find applications in clinical diagnostics, predictive and regenerative medicine, and in studying how cells respond to their microenvironment under both healthy and diseased conditions. In parallel, the team also develops therapeutic siRNAs.

CONSIDERATION OF THE RECOMMENDATIONS IN THE PREVIOUS REPORT

Three recommendations were made: to maintain the high level of scientific production as in the previous mandate, to strengthen organization and team life, and to refine the scientific strategy and projects.
Between 2019 and 2024, the team maintained high publication standards, producing 50 papers, including articles in top journals and highly cited works. Collaborations with CEA/Leti/DTIS were reinforced, notably through the Magic project within PEPR Med-ooC, and a new partnership with Sanofi on organoids-on-chip has been established. Together with CEA/Leti/DTIS, the team is also developing innovative tools such as the "Be-Cool Machine" for large-scale Matrigel microbead production, with potential for a start-up.
The team maintained strong cohesion and worked to reduce research dispersion by focusing primarily on pancreatic diseases. While skin diseases were also investigated, the future project will concentrate more on the pancreas. From 2019 to 2024, 43 young researchers were mentored, and interactions with the three historical BGE teams remained active, resulting in joint publications.
Biomics' scientific strategy is consistent with its historical strengths, with an increasing emphasis on pancreatic diseases. At the same time, a new group dedicated to skin diseases and personalized medicine will be created within the Imac team by January 2027. This reorganization will reduce dispersion while fostering collaboration and transversal projects within the unit.

TEAM WORKFORCE: IN PHYSICAL PEOPLE AS OF 31/12/2024

Catégories de personnel	Effectifs
Professeurs et assimilés	1
Maitres de conférences et assimilés	1
Directeurs de recherche et assimilés	1
Chargés de recherche et assimilés	2
Cadre scientifique CEA	11
Personnels d'appui à la recherche	1
Non cadre scientifique CEA	2
Cadre administratif CEA	0
Non cadre administratif CEA	0
Sous-total personnels permanents en activité	**19**
Enseignants-chercheurs et chercheurs non permanents et assimilés	0
Cadre scientifique CEA non permanent	0
Personnels non permanents d'appui à la recherche	1
Non cadre scientifique CEA non permanent	0
Cadre administratif CEA non permanent	0
Non cadre administratif CEA non permanent	0
Post-doctorants	4
Doctorants	5
Sous-total personnels non permanents en activité	**10**
Total personnels	**29**

EVALUATION OF THE TEAM

Overall assessment of the team

The team has performed remarkably well, both scientifically and organizationally. Its research has gained international visibility, notably through the organization of major scientific events such as the European Congress of the European Organ-on-Chip Society and the International Conference of Deans of French-speaking Pharmacy Faculties. This visibility has been further strengthened by high-impact publications [Nature Comm] and international collaborations [annual meeting of EurooCS].
At the same time, the team has built a solid organizational structure to ensure its long-term success. It has nominated a successor, thereby securing leadership continuity, and has strategically focused its research on pancreatic pathologies, a field with significant clinical relevance. The transfer of team leadership to an external Inserm researcher has been conducted in an organized mannerand demonstrates strong strategic consistency with BGE's long-term objectives.
The group has also been deeply committed to training the next generation of scientists, supervising from 2019 to 2024 fourteen PhD students and seven postdoctoral researchers. In parallel, it has developed innovative organ-on-chip models with direct therapeutic applications—for example, pancreas-on-chip systems for diabetes research: the team have demonstrated that islets and blood vesselelorganoids (BVOs) in co-culture lead to fusion and improved insulin secretion over time, suggesting a new therapeutic approach for pancreatic islet transplantation and type 1 diabetes modelling (bioRxiv 2024).
Overall, the team has demonstrated outstanding achievements, combining internationally recognized scientific contributions with strong organizational development.

Context-related strengths and opportunities

The Biomics team has developed an internationally recognized organ-on-chip model, which has been highlighted in a very important publication as a last author in *Nature Communications* (2024) showing the capacity to generate functional vascularized organoids-on-chip, and presented at the EurooCS European Organ-on-Chip Meeting. This expertise enables worldwide collaborations, particularly with Leiden University, and provides valuable platforms for testing innovative treatments using organ-on-chip and microfluidic platforms, especially in tumor and skin models.
The team has made a strong scientific impact, publishing 49 original papers, 30 of which list Biomics members as PDC authors, fourteen reviews or book chapters, and six clinical papers (Ex; Nat Comm 2024, Plos Comput Biol 2023, J Crohns Colitis. 2022). Building on its expertise, the team has secured significant funding from national sources including ANR (ANR PEPR, 2 M€ leader), two Idex (UGA IDEX 250 k€ as leaders), and CEA, from international sources including H2020 European contracts (H2020 900 k€, as partner), and from industrial partners such as L'Oréal and Biotherm totalling 5M€. In addition, the team has trained twelve PhD students, whose theses were defended between 2019 and 2024, seven postdoctoral researchers, two contract researchers (CDD), seventeen master's students (M2), and four bachelor's students (L3). PhD students and post-doc participated to publications as first authors (7 publications) or coauthors (8 publications). Post doc participated in two publications as first authors and 1 as a coauthor. The team's activities have also enabled the recruitment of permanent CEA researchers, including Flora Clément and Emily Tubbs in 2022.
Team members were invited to or organized major scientific events, including the annual conference of the European Organ-on-Chip Society, the CidPharmaMef 2022 (International Conference of Deans of French-speaking Pharmacy Faculties), the Somm Symposium on Monocytes and Macrophages in Lyon, and the joint Macrophage of Grenoble and Lyon Club (MoGly) meeting.
Members of the Biomics team have received prestigious awards, including the Prix Espoir Isère contre le cancer awarded in 2023, the Grand Prix de l'Université Libanaise awarded in 2017 and 2024, and the Chevalier des Palmes Académiques awarded in 2019. Team members have contributed to numerous scientific committees and governance roles, including co-director of ITMO - Technologie pour la Santé, steering committee member of GDR Organoïdes, evaluator for ERC Advanced Grants, jury member for Inserm Chairs, member of the Scientific Advisory Board of Institut Paoli Calmettes in Marseille, member of the scientific council of the Ateliers Inserm, member of the scientific steering committee of Canceropole Lyon Auvergne Rhône-Alpes (Clara), and member of the Committee on Biomedical and Public Health Research (CRBSP) at Grenoble Alpes University Hospital.
In addition, the team holds editorial responsibilities, serving on the editorial boards of Frontiers in Oncology and International Journal of Molecular Sciences.
The team have major medical and industrial opportunities, including collaborations with clinicians at the Institut d'Investigacions Biòmediques August Pi i Sunyer (IdiBaps) in Barcelona, discussions with Chuga and IHU nfini in Nancy regarding the possibility of performing clinical trials with siRNA, and partnerships with industrial partners

such as Clarins and Biotherm/L'Oréal. The team has fostered technology transfer and industrial valorization through the creation of spin-offs such as Genel and OrgDrop, demonstrating the team's capacity for translating laboratory research into innovation.
The work of the Biomics team has also received broad media coverage, appearing in *Science & Vie*, *France Culture* (La Science CQFD), *Le Monde* (Science & Médecine, March 2024), and in hearings at the Assemblée Nationale and the Sénat. Coverage also includes *La Gazette du Laboratoire* (N°290, October 2022), *Le Quotidien du Médecin* (Hebdo 9955, September 2022), and *L'Usine Nouvelle* (June 2022).

Context-related weaknesses and risks

A potential risk lies in the large number of models developed by different groups within the team. However, the next mandate will adopt a more focused approach on pancreatic pathologies, which should mitigate this issue. Another risk is the planned retirement of the actual team leader. Nevertheless, internal discussions and coordination with supervising bodies will help ensure continuity, and his continued involvement with the team is expected to further reduce this risk. The administrative burden of leading a team through this time of transition will be significant. Since the upcoming team leader, is a mid-career PI, there is a risk that this burden would interfere with him building a strong international profile in his research domains. An explicit strategy for effective management would be useful.

ANALYSIS OF THE TEAM'S TRAJECTORY

The team is undergoing a profound reorganization, which has been anticipated by the future leadership. The renewed focus on pancreatic diseases will serve as a key step in this transition, enabling him to take the lead while building on the expertise developed during the previous mandate.

RECOMMENDATIONS TO THE TEAM

The recommendations for the next mandate are consistent with those previously made. Maintaining high-level publications, reducing the risk of dispersion, and focusing on pancreatic diseases remain priorities. Given the team's strong translational potential, developing collaborations with clinicians in Grenoble, as well as nationally and internationally, will be essential. The leadership of Arnaud Millet, as an MD/PhD, will play a key role in strengthening these clinical ties. To support the goal of bringing new drugs to the clinic, the creation of spin-offs and stronger partnerships with pharmaceutical and cosmetic industries will also be important. In addition, the development and application of 'microphysiological systems and organ(oids)-on-chip (MPS/OOC) is central to the future research strategy as outlined in the self-assessment.
Given that it is mostly the team leader retiring who holds a strong (inter)national profile (Orchid, EurooCS, Med-ooC, etc) in this domain, it would be important to define an explicit strategy for how Biomics will remain visible in the international community of MPS R&D. This will be essential for the team to capitalize on opportunities for public-private partnerships and translational research in MPS/OoC.
The oral presentation indicated that the transition of responsibilities is well defined and aligned with BGE's future.

Two researchers, including a former member of the Biomics team, will join forces to establish a new research team named Imac2 with additional collaborators. They will serve as co-leaders of this team which represents an evolution of the previous Imac team led by the other member, a recognized expert in adrenocortical and renal tumors who will join the BGE unit project from an external unit in January 2027.s. The creation of Imac2 is intended to enhance synergies by combining the new member expertise in cancer research, biomarker discovery, and innovative therapeutic strategies with the Biomics member's expertise in skin diseases and organoid technologies.This strategic reorganization is fully aligned with BGE's future development objectives and aims to reinforce collaborative research by capitalizing on the complementary strengths of the two leaders and their collaborators..

Team 2: Edyp: Etude de la dynamique des proteines

Name of supervisors: Christophe Bruley and Yohann Couté

THEMES OF THE TEAM

The development of proteomic technologies for understanding the physiological and pathological functioning of complex biological systems

CONSIDERATION OF THE RECOMMENDATIONS IN THE PREVIOUS REPORT

Recommendations on team's organization and life: the committee advises to increase internal communication

Response: Meetings are held every two weeks, in hybrid mode if needed. Key scientific and organizational information is then shared in a common folder accessible to all members.

Recommendations on scientific strategy and projects: to keep a world-class proteomics core in the EDyP team.

Response: The team highlights the need for continuous investment in state-of-the-art equipment. Without direct IRIG/UMR support, it relies on Profi infrastructure and specific grants. Over the past five years, major acquisitions (Orbitraps, robot, chromatography systems) totalled €2.2M, plus €2.8M from CPER, France 2030 and PEPR Cell-ID. Ongoing discussions with supervisory bodies aim to secure long-term resources.

Recommendation to strengthen links with Biosanté teams

Response: Collaborations were intensified, leading to joint publications. However, Edyp left the Biosanté unit in 2023 to co-found the BGE unit.

Recommendation to focus on specific diseases

Response: Initially centred on liver diseases, the team redirected its efforts after V. Brun's departure. In 2022, E. Boncoeur joined to develop a program on rare lung pathologies, notably Idiopathic Pulmonary Fibrosis IPF, with no curative treatment. This refocusing is expected to strengthen methodological research. From 2027, E. Boncoeur will co-lead the team with C. Bruley.

TEAM WORKFORCE: IN PHYSICAL PEOPLE AS OF 31/12/2024

Catégories de personnel	Effectifs
Professeurs et assimilés	0
Maitres de conférences et assimilés	0
Directeurs de recherche et assimilés	2
Chargés de recherche et assimilés	0
Cadre scientifique CEA	13
Personnels d'appui à la recherche	7
Non cadre scientifique CEA	2
Cadre administratif CEA	0
Non cadre administratif CEA	0
Sous-total personnels permanents en activité	**24**
Enseignants-chercheurs et chercheurs non permanents et assimilés	0
Cadre scientifique CEA non permanent	0
Personnels non permanents d'appui à la recherche	4
Non cadre scientifique CEA non permanent	2
Cadre administratif CEA non permanent	0
Non cadre administratif CEA non permanent	0
Post-doctorants	0
Doctorants	5
Sous-total personnels non permanents en activité	**11**
Total personnels	**35**

EVALUATION OF THE TEAM

Overall assessment of the team

The Edyp team integrates methodological innovation (mass spectrometry approaches for mapping post-translational modifications), technological development (pioneered NEMS-MS devices using of highly sensitive and efficient resonators,, improved particle focusing, and innovative denoising algorithms), computational rigor (expertise in AI-driven multi-omics integration, statistical frameworks for proteomics, and the development of open-source software tools), and biomedical relevance (identified specific circulating biomarkers for diseases such as Wilson's disease, acetaminophen-induced liver injury, metabolic dysfunction-associated steatotic liver disease, and malignant biliary strictures). Their work positions them as leaders in proteomics and bioanalytical technology, with high impact across fundamental biology, translational research, and clinical applications.
The team published 81 peer-reviewed articles (42% led by Edyp members) published in high-visibility specialty journals such as *Analytical Chemistry*, *Biomarker research*, and *Nucleic Acids Research*., additional publications through its ISO-certified Edyp-Service platform, and high-visibility collaborations in Nature, Nature Communications (one in PDC), Science Advances (one in PDC), but few in leading positions. The team secured ~6.6 M€ in funding: 3.8 M€ for operations (staff, consumables, small equipment) across five research themes, and 2.8 M€ for major infrastructure investments. Funding sources include national (16 ANR (15 PRC and 1 PRCE) where they are 7 times coordinators, CNRS, UGA, CPER) and international programs (Eurostars, Cross-funding, France 2030 Jouvence INBS), ensuring continuity beyond 2024.
Overall, the performance of the team ranges from very good to excellent, with particular strengths in epigenetic research. Nevertheless, this line of research is not yet fully integrated with the other research activities of the team.

Context-related strengths and opportunities

The Edyp team demonstrates a high level of scientific excellence and clear international visibility, supported by a well-established multidisciplinary approach combining biomarker discovery, high-content proteomics, epigenetics, computational biology, and Nems-MS technologies. The team's achievements in biomarker discovery are particularly noteworthy, including the identification of clinically relevant markers for Wilson's disease, acetaminophen-induced liver injury, MASLD, and malignant biliary structures. These advances illustrate the translational potential and clinical significance of Edyp's research portfolio. The team has also made important contributions to fundamental biology, such as the discovery of histone H3K27 crotonylation in spermatogenesis, the structural characterization of the RumC1 antimicrobial peptide, and the detailed mapping of the proteomic landscape during *Toxoplasma gondii* sexual development, published in speciality high-impact journals such as *Analytical Chemistry*, *Biomarker research*, and *Nucleic Acids Research*.

The team published 81 peer-reviewed articles (42% led by Edyp members), additional publications through its ISO-certified Edyp-Service platform, and high-impact contributions in Nature, Nature Communications, Science Advances (two in PDC). Between 2019 and 2027, the team secured ~6.6 M€ in funding, including 1.629M€ from the ProFi infrastructure: 3.8 M€ for operations (staff, consumables, small equipment) across five research themes, and 2.8 M€ for major infrastructure investments. Funding sources include national (16 ANR (15 PRC and 1 PRCE) where they are 7 times coordinators, CNRS, UGA, CPER) and international programmes (Eurostars, Cross-funding, France 2030 Jouvence INBS), ensuring continuity beyond 2024. Affiliation to ProFi secures an additional funding, through the program 172 of the Ministry of Higher Education and Research that already allocated €54,000 in 2024 and €115,000 in 2025 to Edyp.

Edyp demonstrates strong national and international leadership in proteomics. Members of the team hold the position of President of French Proteomics Society, 2023–2026 or Secretary, 2020–2023, highlight the national recognition. Team members are regularly invited to speak at high-level conferences and seminars (30 invitation: 16 national, 14 international, Portugal, Belgium, Germany, Turkey, Spain) covering proteomics, mass spectrometry, and biomedical research topics. Edyp also plays a strategic role as a founding node of the French Proteomics Infrastructure (ProFI), coordinated by a team member since 2020. In addition, members contribute to scientific councils and evaluation panels, including (exp: Vaincre la Mucoviscidose). Strong national (Paris, Marseille, Angers, Lyon) and international collaborations (Switzerland, Germany and Spain) further enhance its visibility, translational relevance, and methodological innovation.

Eight PhD students have successfully defended their theses, with five currently in progress, and the team has hosted three post-doctoral fellows. In addition, team members have supervised thirteen engineers on fixed-term contracts and 28 internships across Bachelor's (L2, L3) and Master's (M1, M2) levels, including international trainees such as a PhD student from the Novo Nordisk Foundation Centre for Protein Research in Copenhagen. Each PhD student have one to three papers as first author in key papers during their internships.

The team collaborates with industry, notably with Cell&Soft to design an alveolo-capillary barrier model and with Adlin Science through a Cifre PhD on histone modifications and RNA splicing. They also work closely with suppliers, testing new solutions and instruments such as a Covaris ultrasonicator and a Bruker timsTOF Ultra 2.

They actively engage with the public through participation in "Sciences en Fête", by hosting high school students for visits and internships, and by promoting their projects on the Edyp, Irig, and BGE websites. In addition, C. Bruley contributed to *Projet Vénus*, an artistic initiative raising awareness about breast cancer during *Octobre Rose*.

The team's participation in thematic schools, professional training, and outreach activities (e.g., *Sciences en Fête* and *Projet Vénus*) further illustrates its contribution to knowledge dissemination, societal engagement, and public visibility.

Context-related weaknesses and risks

The Edyp team operates in a highly competitive and fast-evolving field, where rapid technological advances could quickly render existing methodologies obsolete without sustained investment in innovation and infrastructure. This dynamic environment requires continuous adaptation and strategic foresight to maintain the team's leadership. Limited availability of clinical samples remains a practical constraint that could slow translational research, particularly in projects requiring validation in large patient cohorts. The technical complexity associated with scaling up Nems-MS devices also represents a significant challenge, as robustness, reproducibility, and regulatory validation are still to be achieved for broader application. In addition, the recruitment and retention of specialized personnel are critical risk factors, as maintaining the necessary expertise in advanced proteomics and analytical technologies depends on sustained access to qualified staff and career progression opportunities.

The team's internal structure also presents vulnerabilities related to its "talent pyramid." The current configuration includes few postdoctoral researchers, limited international recruitment, and an aging technical core, which may affect long-term renewal and flexibility. Despite the team's strong international reputation, only three postdoctoral fellows were recruited during the evaluation period. This limited postdoctoral representation, which partly reflects broader institutional challenges, reduces the group's attractiveness to young international scientists and could constrain its ability to integrate new expertise. Targeted actions, including dedicated postdoctoral programs or partnerships, would significantly enhance the team's renewal capacity, visibility, and competitiveness.

Financial sustainability also constitutes a key structural concern. The team's heavy dependence on competitive external funding for the acquisition of major instrumentation—without a recurrent investment line from the host institutions (Irig/UMR)—represents a potential vulnerability. Although Edyp has demonstrated excellent success in securing major national and regional grants (ANR, France 2030, CPER) and has recently acquired several cutting-edge instruments (Orbitrap Exploris 480, Orbitrap Ascend Tribrid, Tecan Fluent robot, LC systems. this model relies on the continuous renewal of grants. In a domain characterized by rapid technological obsolescence and exceptionally high equipment costs, the absence of long-term *continuous and strategically planned* institutional investment creates uncertainty regarding the team's capacity to sustain its competitive edge.

From a scientific perspective, the team's portfolio remains broad, encompassing multiple disease areas and technological lines. While this diversity has been instrumental in developing a strong interdisciplinary profile, it also carries the risk of diluting focus away from the flagship project on idiopathic pulmonary fibrosis (IPF). Opportunities for European-level funding (e.g., ERC, Horizon Europe, IMI/IHI) are not yet fully exploited, and industrial collaborations remain concentrated primarily on instrumentation partners. Expanding these dimensions would strengthen both visibility and financial resilience. Finally, the high administrative and managerial load borne by principal investigators—due to national responsibilities, committee participation, and platform management—constitutes an additional risk, as it may limit the time available for research, mentoring, and strategic development. Sustained attention to workload distribution and staff support mechanisms will be essential to safeguard scientific productivity and long-term.

ANALYSIS OF THE TEAM'S TRAJECTORY

Over recent years, the Edyp team has established a robust and distinctive scientific trajectory characterized by sustained methodological innovation and an ability to evolve toward high-impact biomedical applications. The team has developed extensive expertise in biology, biochemistry, analytical sciences, and data science, enabling major advances in biomarker discovery and proteomic technologies. Earlier achievements, such as minimizing biases in clinical sample preparation, identifying plasma biomarkers for liver fibrosis, and detecting microbial toxins, illustrate its capacity to translate methodological excellence into biologically and clinically relevant outcomes. These accomplishments reflect a coherent evolution from core proteomics research toward increasingly integrative and translational objectives.

Building on this foundation, the team is now strategically refocusing its research on idiopathic pulmonary fibrosis IPF, a complex, progressive, and currently incurable lung disease. This evolution represents a significant step in consolidating Edyp's expertise within a clinically meaningful framework. The recent recruitment of a CEA researcher provides an opportunity to integrate proteomics, cell biology, and pulmonary research. The emergence of the MetaNucleomics team represents a coherent and strategically sound evolution of the BGE unit research program, building on its strengths in proteomics and mass spectrometry. The MetaNucleomics team studies how metabolism influences epigenetic histone modifications and gene expression, focusing on spermatogenesis and brain pathologies. By identifying metabolic–epigenetic signatures, it aims to uncover new molecular mechanisms and therapeutic targets. Drawing on multidisciplinary expertise in biology, metabolomics, epigenomics, and advanced mass spectrometry, the group unites researchers across Edyp and BGE to enable integrated, disease-relevant studies. Overall, MetaNucleomics reinforces BGE unit's scientific coherence and expands its scope towards the metabolism–epigenetics interface, a rapidly growing and biomedically significant field. The future scientific direction of Edyp, on its side, is clearly articulated around the combination of advanced proteomic methodologies, innovative biological models, and computational analyses aimed at deciphering the molecular, cellular, and tissue-level mechanisms underlying fibrosis. The research program is coherently structured around three complementary axes. This strategic reorientation confirms the Edyp team's capacity to adapt its expertise to emerging biomedical challenges while maintaining excellence in technological development, ranging from murine systems to human lung tissue and microfluidic three-dimensional alveolar-capillary constructs. The team is implementing highly sensitive and high-throughput mass spectrometry workflows tailored for complex lung samples, encompassing single-cell and structural proteomics approaches. The team also applies advanced computational proteomics tools and statistical frameworks, integrating AI-driven methods and stringent false discovery rate control, to ensure the robust analysis of large-scale and spatially resolved proteomic data.

This strategic reorientation confirms the team's capacity to adapt its expertise to emerging biomedical challenges while maintaining excellence in technological development. The integrated approach now pursued by Edyp enables comprehensive mapping of the lung proteome with unprecedented resolution, fosters a deeper understanding of aberrant intercellular communication and extracellular matrix remodelling, and supports the identification of new biomarkers and therapeutic targets. By effectively linking methodological innovation with biological and clinical relevance, the Edyp team demonstrates a dynamic and forward-looking trajectory, capable of generating new insights into IPF pathophysiology, improving disease detection and monitoring, and advancing personalized therapeutic strategies, while continuing to contribute to the broader fields of high-content proteomics and computational biology.

RECOMMENDATIONS TO THE TEAM

The committee recommends that the Edyp team consolidate idiopathic pulmonary fibrosis IPF as its flagship programme, establishing a clearly defined translational pipeline from discovery to clinical validation. Other disease-related projects should be limited to a few high-priority indications where the team's methodological excellence provides distinct added value. Strengthening access to longitudinal and well-characterized human samples will be essential, along with systematic implementation of robust biomarker verification workflows. Continued investment in advanced computational and proteomic platforms will further enhance analytical depth, data integration, and reproducibility.

Human resource development remains a key priority. The committee encourages the creation of competitive postdoctoral fellowship schemes and the expansion of international recruitment and collaborations to foster renewal, attract top expertise, and ensure continuity across generations of scientists and technical staff. A structured five-year infrastructure plan, combining competitive external grants with institutional co-investment, is strongly advised to sustain technological leadership and reduce vulnerability to funding fluctuations.

Finally, the team should adopt clear performance indicators and risk-mitigation measures to monitor progress in scientific output, biomarker validation, funding diversification, and platform performance. Embedding these metrics within a coherent strategic framework will strengthen governance, ensure accountability, and support the long-term sustainability and international visibility of the Edyp team.

Team 3:	Gen&Chem - Genetics & Chemogenomics
Name of the supervisor:	Name of the supervisor: Ms Marie-Odile Fauvarque, with Christophe Battail as Deputy Director

THEMES OF THE TEAM

The methodological approaches of the teams combine genetics, pharmacogenomics and chemical biology. Over the past decade, the Team has been interested in ubiquitination and has notably identified key deubiquitinating enzymes (DUBs) through genetic screens (notably in Drosophila), functional studies, and transcriptomic analyses, underlining their essential roles in cellular homeostasis, oncogenic pathways and rare diseases. Thanks to the integrated CMBA platform, the team has also identified DUB inhibitors. Since 2023, with the arrival of two new CEA researcher, the team has expanded into pharmacogenomics, developing bioinformatics approaches integrating large-scale omics and clinical data to predict clinical treatment responses in cancer.

CONSIDERATION OF THE RECOMMENDATIONS IN THE PREVIOUS REPORT

In the previous report, one recommendation was that the Team should take advantage of the increased number of HDR to recruit more PhD students. This has been accomplished since the number of PhD students reached five in December 2024. This effort should be continued and increased.
Another recommendation was to take more advantage of the screening platform to carry out risky projects with international collaborators to increase the visibility of the whole Team and the number of opportunities for collaborative grants. The balance between research and service was another point of vigilance.
The platform has started an ambitious collaboration in 2024 with Leiden Univ. in the context of the Renew project headed by a Biomics member. Besides, it has distributed the FR-PPIChem collection of 10,140 compounds designed to target protein-protein interaction (created in the frame of ANR FR-PPiChem), both at the national (to 18 partners) and international levels (one in Canada, five in the US and one in the Netherlands). Strengthening long-term international collaborations remains a valuable objective.
Presently, the team's international collaborations mostly concern its research activities and the balance between research and service is managed through the involvement of dedicated research engineers in CMBA platform services, training, and R&D activities.

TEAM WORKFORCE: IN PHYSICAL PEOPLE AS OF 31/12/2024

Catégories de personnel	Effectifs
Professeurs et assimilés	0
Maitres de conférences et assimilés	0
Directeurs de recherche et assimilés	1
Chargés de recherche et assimilés	2
Cadre scientifique CEA	9
Personnels d'appui à la recherche	1
Non cadre scientifique CEA	0
Cadre administratif CEA	0
Non cadre administratif CEA	1
Sous-total personnels permanents en activité	**14**
Enseignants-chercheurs et chercheurs non permanents et assimilés	0
Cadre scientifique CEA non permanent	0
Personnels non permanents d'appui à la recherche	1
Non cadre scientifique CEA non permanent	0
Cadre administratif CEA non permanent	0
Non cadre administratif CEA non permanent	0
Post-doctorants	0
Doctorants	5
Sous-total personnels non permanents en activité	**6**
Total personnels	**20**

EVALUATION OF THE TEAM

Overall assessment of the team

The two major assets of this multidisciplinary Team are the well-recognized CMBA screening platform and the combination of expertise in both "wet" and "dry" chemical biology. Also, the projects of the Team are original, and the combination of basic research and chemical biology/drug screening approaches is very interesting. In addition, the Gen&Chem team will stay co-led by a CEA researcher who joined the team in 2023 and the actual team leader, each providing complementary expertise in molecular genetics and computational sciences. The Team was successful in funding acquisition (exp: Two European 2020 grants ad partners, around 800 K€, four ANR, one as coordinator, 527 k€ and three as partners, 200 k€, and one PEPR as partner, 208k€). The team has published 69 scientific papers over the 2019–2024 period, including 34 published by the Gen&Chem Team itself (14 as first, last and/or corresponding authors), 24 published by the newly three hosted researchers prior to their affiliation to the Team and eleven publications (two as first, last and/or corresponding authors) corresponding to the activity of the CMBA platform. The team publish in PDC in high visibility journals such as Cell Calcium 2022 & RNA 2023. The team is not, however, in PDC in the publication in very high visibility journals such as Nature Communications 2021 & 2024, Nucleic Acids Research 2020, PNAS 2019, Cell Reports 2020. The "weak" part of the Team in the last period was the overall quality of its scientific production, which was very good but that should move to excellent or more regarding the excellent quality of its projects and of the recently recruited new researchers.
Hence the overall assessment is very good to excellent

Context-related strengths and opportunities

Historically, the Team has mainly developed wet lab activities in the field of cell biology and chemical biology and have been successfully led by the actual director, the Team Leader and also head of the unit since 2023.
The two trump cards of this multidisciplinary Team are (i) the well-recognized CMBA screening platform 3 permanent Engineer positions & setups and part of the ChemBioFrance national network), and (ii) the combination of expertise in both "wet" and "dry" chemical biology. Also, the projects of the Team are original, and the combination of basic research and chemical biology/drug screening approaches is very interesting. In addition, the Gen&Chem team will stay co-led by a CEA researcher who joined the team in 2023 and the actual team leader, each providing complementary expertise in molecular genetics and computational sciences, respectively and sharing management duties.
Amongst the major contributions of the Team is the determination of the role of various DUBs of the ubiquitin-like protease subfamily (USPs) during development & in diseases. In particular, they showed that USP36 also exerts a scaffolding role beyond its enzymatic activity. Also, thanks to HTS based on affinity purification coupled to mass spectrometry (in collaboration with Edelris company, the Team), the Team has identified three specific binders of human USP8 (unpublished) as well as several USP8's partners thanks to a 2-Hybrid approach (in collab with Hybrigenics and Edyp). Importantly, USP8 gain-of-function variants are involved in Cushing's disease (a rare and severe metabolic disorder). Finally, the Team has developed pharmacogenomics approaches based on transcriptome profiling of kidney tumours from patient cohorts included in drug clinical trials to predict individual patient responses to given anti-cancer agents as a first step towards personalized medicine strategies.
The team has published 69 scientific papers over the 2019–2024 period, including 34 published by the Gen&Chem Team itself (14 as first, last and/or corresponding authors), 24 published by the three newly hosted researchers (C. Battail, C. Sayou & G. Uguzzoni) prior to their affiliation to the Team and 11 publications (two as first, last and/or corresponding authors) corresponding to activity of the CMBA platform. Amongst the 20 selected articles are publications in very good to excellent journals (Nature Communications 2021 & 2024, Nucleic Acids Research 2020, PNAS 2019, Cell Reports 2020, Cell Death Dis. 2023, iScience 2024, Cell Calcium 2022 & RNA 2023). Apart from the publications in Cell Calcium 2022 & RNA 2023, none of these papers were published as first, last and/or corresponding authors.
The main grants obtained are: (i) Two European 2020 grants, both obtained by C. Battail as a partner (2021-24-493 k€/8,500 k€ & 2022-25-327 k€/1,500 k€), (ii) Four ANR, one as coordinator (M-O. Fauvarque -2021-26- 317 k€/527 k€) and three as partners (M.O. Fauvarque -2022–27– 94 k€/528 k€; C. Battail -2022–26– 126 k€/497 k€ & C. Barette -2021-22 - 18 k€/450 k€). (iii) One INCa PRT-K -2023–26– 54 k€, C. Battail as Partner. (iv) One PEPR 2023-27 by C. Battail as Co-coordinator 208 k€/1,800 k€.
The Team has supervised eight PhD students over the 2019-24 period. Three have already defended their thesis (2021, 2023 & 2024) and five PhDs are still ongoing. These theses led to two first-author preprints in BioRxiv for two PhD students and one first-author paper in RNA 2023 for a student.
Importantly, the Team has recently recruited several PIs, either young emerging scientists (one), a wet lab scientists who will bring her expertise in exploring transcriptional complexes using integrated structural and

cellular biology) who was recruited as a young CEA researcher following two postdocs in the UK (EMBO) and Grenoble, or 2 already established researchers, both well-recognized experts in bioinformatics, pharmacogenomics, computational modelling and machine learning. These last two PIs will clearly strongly reinforce the "dry lab" part of the Team.
In terms of scientific recognition, the team leader was invited to give two seminars at the University of Coimbra (Portugal) in 2019 & 2020. Also, she was chair at two EMBO Workshops in Croatia in 2019 and 2024. She also gave two oral presentations at two international meetings (Ljubljana, Slovenia, and Paris). The deputy team leader was invited to give four seminars (Strasbourg 2019, Paris 2022 & 2023 and Clermont-Ferrand 2023. In addition, he gave oral presentations at 8 international meetings between 2022 and 2025. A PhD student mentored by the deputy team co-leader, made a four-month stay abroad, thanks to the Katy research grant obtained by his supervisor.
The Team has launched a collaboration with Edelris S.A. for the development of USP8 inhibitors. The team has a patent (EP22306913, WO2024126426).

Context-related weaknesses and risks

Given that the team leader has endorsed a lot of administrative duties (direction of both the Team, the CMBA platform and the Unit) and that most of the recently recruited researchers are dry lab scientists, The future of wet lab projects may appear a bit uncertain in this Team. However, the recent recruitment of a young molecular- and cell biologist in addition to the presence of another Drosophila expert in the Team should mitigate this risk.

The Team, whose size was relatively small but significantly increased due to recent recruitment, has not trained a lot of PhD students or postdocs.

ANALYSIS OF THE TEAM'S TRAJECTORY

Over the years, the team has established itself as an expert in the study of ubiquitination. Through genetic screens, functional assays, and transcriptomic analyses, the team has identified critical deubiquitinating enzymes (DUBs), revealing their essential roles in immune regulation, intracellular signalling, trafficking, cell proliferation, neuronal activity, oncogenic pathways, and rare diseases (Incontinentia pigmenti and Cushing's disease), contributing to original insights at the international level. Additionally, the discovery of DUB inhibitors has defined some DUBs as valuable therapeutic targets. The team has notably evidenced the druggability of some DUB-substrate interfaces. Since January 2023, with the arrival of the deputy team leader (Christophe Battail), the team has expanded its expertise into pharmacogenomics through the bioinformatics integration of –omics and clinical data to predict patient responses to cancer treatments.

A strong focus will actually remain on investigating the role of DUBs in regulating dynamic cell responses such as cell signalling (USP8, UCH-L1) as well as transcriptional initiation (USP36, USP7) – a new research direction led by Camille Sayou, who joined the team in December 2023. Additionally, the input of the deputy team leader, together with the recent recruitment of one confirmed scientist in December 2024, will further strengthen the team's computational capabilities, enabling the use of pharmacogenomics approaches in predictive pharmacology and the application of generative AI for designing therapeutic peptides or compounds based on large-scale experimental data.

The team is undergoing a reorganization, which has been anticipated, and the Team will be co-led by the team leader (who will also be the head of the unit) and the actual deputy team leader, which further highlights the new orientation of the Team toward precise pharmacology that will integrate wet and dry lab.

RECOMMENDATIONS TO THE TEAM

The Team should continue to make profit of the strong connection with the CMBA platform and to develop the connections between wet and dry lab projects, notably thanks to the newly recruited bioinformaticians, and to implement joint projects. Also, the links with clinicians should be increased.

With several new PIs who have recently joined the Team, an increase in the number of PhD students is expected, which should help the Team to increase its scientific production, particularly as the first, last and/or corresponding author.

CONDUCT OF THE INTERVIEWS

DATE

Beginning: 6 October 2025, at 9:30 a.m.

Ending: 6 October 2025, at 7:30 p.m.

Interview conducted: on-site or remotely

PROGRAMME OF THE INTERVIEWS

9h 30 9 h 40	Connection du comité Présentation du comité Présentation du Hcéres par le délégué scientifique
10 h	Rencontre du comité avec les ITA (huis clos) Sabine Brugière ; Stéphanie Porte
10 h 30	Rencontre du comité avec les étudiants (huis clos) Mélanie Lopès ; Simon Paul
11h.00	Rencontre du comité avec les chercheurs + post-docs (huis clos) Laurence Aubry ; Marie Viguier
11 h 30	Débriefing du comité (huis clos)
12 h 30	Lunch du comité
13 h 30	Présentation globale de l'unité organisation et trajectoire (15 min) (15 min de questions) Oratrice : Marie-Odile Fauvarque
14 h	Présentations des faits scientifiques marquants et trajectoire équipe 1 (15 min) + 10 min questions Biomics - BIOengineering and MICrophysiological Systems in pancreatic diseases, Orateurs : Xavier Gidrol et Arnaud Millet
14 h 25	Présentations des faits scientifiques marquants et trajectoire équipe 3 (15 min) + 10 min questions Gen&Chem - Génétique, Chémogénomique et Modélisation pour la santé Orateurs : Marie-Odile Fauvarque et Christophe Battail
14 h 50	Présentations trajectoire équipe 5 (10 min) + 5 min questions Imac 2 - Ingénierie et Médecine personnalisée appliquées au Cancer et aux pathologies Cutanées Orateurs : Nadia Cherradi et Walid Rachidi
15 h 5	Pause/Débriefing du comité
15 h 30	Présentations des faits scientifiques marquants et trajectoire équipe 2 (15 min) + 10 min questions Edyp - Étude de la Dynamique des Protéomes Orateurs : Christophe Bruley et Emilie Boncœur
15 h 55	Présentations trajectoire équipe 4 (10 min) + 5 min questions MetaNucleoMics - Interactions entre métabolisme et épigénétique : implications dans la spermatogenèse et les pathologies cérébrales Orateur : Delphine Pflieger

16 h 10 Pause - Débriefing du comité (huis clos)

16 h 30 Rencontre du comité avec les tutelles (huis clos)
CEA :
Mme Pascale Bayle-Guillemaud : directrice de l'Institut. de Recherche interdisciplinaire de Grenoble (Irig)

Inserm:
M. Franck Lethimonnier : Directeur de l'Institut thématique Technologie pour la santé (IT TS)
ou Mme Marie-Josèphe Leroy Zamia : Directrice de recherche émérite, IT TS
ou M. Jean-Michel Escoffre, chargé de mission IT TS

Université Grenoble Alpes :
M. Philippe Roux : Vice-président Recherche de l'UGA.
ou M. Jean-François Poisson : directeur du pôle Chimie Biologie Santé de l'UGA

17 h Debrief du comité (huis clos)

17 h 30 Rencontre avec le directeur/adjoint (huis clos)

18 h Réunion du comité (huis clos), finalisation du rapport

19 h 30 fin de la réunion

GENERAL OBSERVATIONS OF THE SUPERVISORS

Saint-Martin-d'Hères, le 03 février 2026

Unité de recherche BGE

OBSERVATIONS DE PORTEE GENERALE SUR LE RAPPORT D'EVALUATION

L'Université Grenoble Alpes n'a pas d'observations de portée générale à formuler

Le Vice-président recherche
de l'Université Grenoble Alpes,
Philippe Roux

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