

EVALUATION REPORT OF THE UNIT

IRCAN - Institute for research on cancer and ageing of Nice

UNDER THE SUPERVISION OF THE
FOLLOWING ESTABLISHMENTS AND
ORGANISMS:

Université Côte d'Azur CNRS Inserm

EVALUATION CAMPAIGN 2022-2023
GROUP C



In the name of the expert committee¹ :

First Name, Last Name, Chairman/Chairwoman of the committee

For the Hcéres² :

Thierry Coulhon, President

Under the decree n° 2021-1536 of 29th November 2021:

¹ The evaluation reports "are signed by the chairperson of the expert committee". (Article 11, paragraph 2);

² The president of the Hcéres "countersigns the evaluation reports established by the expert committee and signed by their chairperson." (Article 8, paragraph 5).

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

MEMBERS OF THE EXPERT COMMITTEE

Chairperson:

Mr. Robert-Alain TOILLON, Université de Lille (Chairperson)

Mrs. Allison BARDIN, CNRS, Paris (Vice-Chairperson)

Experts:

Mr. Charles WHITE, CNRS, Clermont-Ferrand

Mr. Matthieu GERARD, CEA, Gif-sur-Yvette

Mrs. Miria RICCHETTI, Institut Pasteur, Paris

Mr. Patrick CAI, University of Manchester

Mr. Niclas SETTERBLAD, Sorbonne Paris Cité

Mrs. Catherine BRENNER, CNRS, Villejuif

Mrs. Marie-Hélène LAFAGE-PROUST, Université Jean Monnet Saint-Etienne

HCÉRES REPRESENTATIVE

Mrs. Francesca PALLADINO

CHARACTERISATION OF THE UNIT

- Name: Institute for research on cancer and ageing of Nice
- Acronym: IRCAN
- Label and number: num
- Number of teams: 15
- Composition of the executive team: Eric GILSON

SCIENTIFIC PANELS OF THE UNIT

SVE Sciences du vivant et environnement

SVE6 Physiologie et physiopathologie humaine, vieillissement

THEMES OF THE UNIT

The aim of the unit is to study aging and age-related diseases (cancer, chronic diseases...) in order to develop strategies to avoid their development. In this context, IRCAN studies cellular signalling and its impact on aging (such as telomere shortening, genomic and epigenetic modifications or the involvement of certain organelles such as mitochondria...). To achieve this goal, IRCAN combines studies on original research models (yeast, marine invertebrates, coral...) with clinical research.

HISTORIC AND GEOGRAPHICAL LOCATION OF THE UNIT

The Institute for Research on Cancer and Aging Nice (IRCAN) was created on January 1st, 2012, by the University of Nice Sophia Antipolis (UNS), the National Institute for Health and Medical Research (Inserm), and the National Center for Scientific Research (CNRS). The unit is comprised of fifteen research teams. IRCAN teams are located at the Medical School of Nice and at the Centre Antoine Lacassagne. The Institute is also present on two technical facilities for animal experimentation (PEMAV and PEMED-PCV).

RESEARCH ENVIRONMENT OF THE UNIT

IRCAN leads international and national programs related to aging, including the InterAging thematic coordination program, Ulysseus European University, IRP 'Cancer, Aging and Haematology' and the AGEMED cross-cutting program. It is also involved in LIA ROPSE, EUR Life PIA, EUROBIOMED, IFR Resources Marines, several GDRs (Transposable Elements, *in vivo* Stem Cells), Chembio, Organoïdes), regional clusters (Cancéropôle PACA, Pôle Mer Méditerranée, Infectiopole sud), Incubator PACA EST and SEMIA Incubator Strasbourg. IRCAN also coordinates numerous clinical research programs on aging through the management of the FHU OncoAge, the hospital Department of Medical Genetics, Clinical and Experimental Pathology, reference centres (Mitochondrial Diseases, Hereditary Bullous Diseases, Neuromuscular Diseases and ALS), and platforms (Clinical Platform of Molecular Genetics of Cancer PACA-Est and Biobank).

UNIT WORKFORCE: in physical persons at 31/12/2021

Permanent personnel in active employment	
Professors and associate professors	12
Lecturer and associate lecturer	9
Senior scientist (Directeur de recherche, DR) and associate	13
Scientist (Chargé de recherche, CR) and associate	21
Other scientists (Chercheurs des EPIC et autres organismes, fondations ou entreprises privées)	0
Research supporting personnel (PAR)	63
Subtotal permanent personnel in active employment	118
Non-permanent teacher researchers, researchers and associates	13
Non-permanent research supporting personnel (PAR)	24
Post-docs	6
PhD Students	38
Subtotal non-permanent personnel	81
Total	199

DISTRIBUTION OF THE UNIT'S PERMANENTS BY EMPLOYER: NON-TUTORSHIP EMPLOYERS ARE GROUPED UNDER THE HEADING 'OTHERS'.

Employer	EC	C	PAR
Inserm	0	21	21
Université Côte d'Azur	20	0	9
CNRS	0	15	11
CHU Nice	0	0	19
Centre Antoine Lacassagne	1	0	3
Université Pierre et Marie Curie	1	0	0
Total	22	36	63

UNIT BUDGET

Recurrent budget excluding wage bill allocated by parent institutions (total over 6 years)	4,843
Own resources obtained from regional calls for projects (total over 6 years of sums obtained from AAP idex, i-site, CPER, territorial authorities, etc.)	5,809
Own resources obtained from national calls for projects (total over 6 years of sums obtained on AAP ONR, PIA, ANR, FRM, INCa, etc.)	16,398
Own resources obtained from international call for projects (total over 6 years of sums obtained)	895
Own resources issued from the valorisation, transfer and industrial collaboration (total over 6 years of sums obtained through contracts, patents, service activities, services, etc.)	2,655
Total in k euros	30,600

GLOBAL ASSESSMENT

The Institute for Research on Cancer and Aging Nice (IRCAN, UMR-INSERM 1081-U Côte d'Azur-CNRS 7,214) is composed of fifteen research teams (200 members): twelve housed by the Faculty of Medicine and three in the Centre Antoine Lacassagne. The Institute carries out original and innovative research on chronic diseases and cancer related to aging. A clear asset is the development of original and innovative approaches in both basic and translational/clinical research to address a large diversity of questions related to these two topics. As of 31/12/2021, the human resources of IRCAN are excellent, consisting of 121 permanent staff and 79 contractual staff.

The unit is particularly pro-active in the establishment of national research networks. It has built outstanding research consortia such as AGEMED (interaging cross-cutting program piloted by INSERM) and FHU OncoAge. IRCAN members benefit from excellent visibility, illustrated by the obtention of twenty awards (e.g. Grand Prix INSERM, Prize Charles Léopold Mayer, French National Academy of Sciences prize, National Academy of Medicine Prize, 'Prix d'Excellence de l'UCA' 2021, Dupont Young Professor Award), participation in thirteen learned societies (National Academy of Medicine, E-mit Society, European Society of Pathology, French Society of Angiogenesis), organisation of 28 congresses and workshops (e.g. CSH Asia Meeting, 2016 & 2018; ICTE 2016 & 2020; EMBO workshop), and six invitations abroad as visiting professor.

Research activities were supported by excellent fund-raising, especially at the national level. Over the period 70% of total credits were obtained through competitive national calls, and 87% of these as PI, for an amount of approximately 26 million euros; among them one PIA, one FHU, sixteen ANR (total amount of 3,866 K€), two INCa PLBIO, 2 INCa PRTK, four labelled team FRM and one labelled team Ligue Contre le Cancer). During the assessment period, the unit was a leader in eleven international contracts (Moore Foundation, Longevity Impetus Grant, Sanofi Innovation award, FP7-PEOPLE Marie Curie (x4), EARN, ABSF, Debra international).

The Unit published 726 articles, including 148 original articles and 49 clinical articles as PI. Original publications appeared in high-profile journals such as Nature, Cell Metabol, EMBO J, NAR, Nat Commun, Cancer Res, Mol Cell, and Neurology. Overall, the level of publication is excellent in relation to the size and financial resources of the unit.

The activity of training through research is good: over the duration of the contract, fifteen postdoctoral fellows were hosted and 81 PhD students trained by 26 researchers out of the 47 who hold an HDR. Forty-three theses have been defended and nine HDR.

The dissemination of knowledge and participation in learned societies is excellent. The unit has obtained eighteen contracts with private companies (Clarins, Sanofi, SOFIA Cosmétiques, ...), created two start-ups, and filled/deposited 25 patents.

Some teams also intervene in events aimed at the general public (Art and Science at the MAMAC; interviews with local news outlets; conferences with the general public at the Fête de la Science). These activities are not yet developed by all the teams.

Overall, IRCAN is internationally recognised as a leading centre of aging research.

DETAILED EVALUATION OF THE UNIT

A – CONSIDERATION OF THE RECOMMENDATIONS IN THE PREVIOUS REPORT

The previous report made the following recommendations:

1- Teams should be encouraged to be ambitious in their publishing strategies.

IRCAN has developed an environment, both in terms of material (platforms) and scientific conditions (meetings, invitations of scientists, SAB), which should allow teams to continue publishing in internationally renowned journals (Nature, Cell Metabolism, Molecular Cell).

2- Attention should be paid to build the reputation of all the teams.

Most IRCAN teams have an excellent national and international reputation, illustrated by attribution of numerous scientific prizes and distinctions (INSERM Grand Prix, H. and M.-J. Mitjavile Prize (National Academy of Medicine), Centennial Prize of the National League against Cancer, Amgen Innovation Prize), responsibilities in learned societies (Member of the National Academy of Medicine, European Society for Mitochondrial Research and Medicine (E-mit Society), European Society of Pathology, French Society of Angiogenesis), the organisation of 27 conferences and congresses, and six invitations to foreign laboratories. The IRCAN financially supports team leaders to organise meetings, thereby consolidating their reputation/visibility.

3- The unit should continue to educate and raise awareness about intellectual property strategies.

Twenty-five patents have been registered by nine teams and three were licenced, which is highly appreciable and shows that the valorisation of intellectual property resulting from the unit's research is taken into account.

4- The institute make all efforts to recruit technical staff.

The unit has grown from 97 permanent staff to 128. It is notable that this increase is mainly linked to an increase in five full-time researchers and 31 research support staff, which is particularly remarkable in a constrained budgetary context at the national level.

5- Staff should be encouraged to obtain HDRs and to volunteer actively for teaching opportunities in order to increase student contact and help with recruitment of PhD students.

The unit counts 47 HDRs for 92 eligible members. Twenty-six HDRs have supervised 81 PhD theses, of which 43 have been defended as of 31/12/2021 (about 3 theses per HDR). Nine HDR have been defended.

6- Students and postdocs should be assigned a mentor who is not in their group and an external tutor. More efforts should be made to formalise assistance at the end of the PhD, in searching for postdoc opportunities and for choosing professional alternatives beyond the bench.

This issue was not addressed by the unit.

7- Team leaders should hold regular meetings to ensure that objectives are being met and that younger teams benefit from the mentoring potential of the more experienced teams.

This issue was not addressed by the unit.

B – EVALUATION AREAS

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

Assessment on the unit's resources

The recruitment of research support staff for the IRCAN is excellent, with an increase from 48 to 63. Four PIs are PUPH, reinforcing the translational aspect of research. Funding obtained at the national level over the period is very good (FRM, Ligue Contre le Cancer, Téléthon, ARC) to excellent (ANR, INCa, FHU, Idex, FRM labelling (4 teams) and Ligue Contre le Cancer labelling). The Unit obtained eleven international funding (including Moore Foundation and Longevity Impetus grant).

Assessment on the scientific objectives of the unit

IRCAN is one of the pioneer units in the field of integrated research on aging. The themes of each team are clearly defined and team leaders develop their projects with the aim of achieving excellence. To this end, the Institute has an excellent global vision of the scientific environment at the national and international level and promotes high-level scientific collaborations and research networks (Agemed, OncoAge, GDRs). The creation of new teams and the development of new research themes are submitted to an external SAB for approval, thereby maintaining the level of excellence that the Institute has set for itself.

Assessment on the Functioning of the unit

The unit has a dynamic human resources policy with, in particular, an outstanding success rate in the competitive recruitment of ten permanent researchers (3 CNRS, 7 INSERM), and the assimilation of 21 other staff members with permanent positions. The career evolution of the personnel in place is also fostered, as shown by a high number of promotions (14 changes of category). Health and safety obligations are not managed efficiently, with only two prevention assistants, one of whom is also PCA. There is no RPSS (mental health committee).

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

Strengths and possibilities linked to the context

The activities of IRCAN are 80% dedicated to research (50% research, 10% valorisation, 5% expertise, 15% training through research (supervision of students and postdoctoral fellows, teaching in Master courses) which meets the expectations of a joint research unit. Its activities are carried out by 121 permanent staff including 22 professors or lecturers (20 from the Université Côte d'Azur, 1 Centre Antoine Lacassagne, 1 U Pierre et Marie Curie, Paris), 36 directors (DR) or research fellow (CR) (21 from INSERM and 15 from CNRS), and 63 research support staff (5 ADJ, 24 Tech, 7 AI, 17 IE, 10 IR). Four PI are clinicians, providing the link to translational/clinical research.

Approximately 18% of credits (4.8 million euros, excluding payroll) were obtained from the supervisory authorities (50% INSERM, 28% CNRS and 22% U Côte d'Azur), 78% from contracts (24.17 million euros) and 4% from technical platforms (1.6 million euros). The equity per team ranges from 518 K-euros to 4.4 M-euros. As of January 1, 2016, teams obtained 39 national contracts (excluding doctoral grants) as leader (ANR (x16), INCa PLBIO (x5), INCa PRTK (x2), funding from ITMO cancer (x1), INSERM Transfert (x3), Plan Cancer (x5), CNRS (x4), INSERM (AGEMED2, and Interaging), 21 contracts in the framework of the PIA (1 IDEX « Jedi »), one FEDER and one CPER; 41 from local authorities ('Canceropole' PACA, region, 'Conseil Départemental') and 51 from charities (FRM, ARC, Ligue Contre le Cancer, AFM Telethon...). Four teams were labelled FRM and one by 'la Ligue Contre Le Cancer'. The unit incubates an emergent team within team 1.

Fifteen International contracts were obtained during the period, of which eleven as leader, including 90 k€ ABSF (ALAN B SLIFKA FOUNDATION), 45 k€2,015 Dupont Young Professor Award, 130 k€ (Moore Foundation), 130 k€ Longevity impetus grant from the Norn group), 100 k€ (Sanofi Innovation Award Europe) and four MSCA-ITN H2020.

Weaknesses and risks linked to the context

There is a large heterogeneity in team size and resources, in particular permanent staff allocations. Within the next assessment period, one fifth of permanent researchers (12) will reach the age limit (retirement), including four team leaders.

Common operating costs engaged a large part of recurrent financial resources. As a result, the unit was not able to provide enough funding to stimulate inter-team collaborations.

2/ The unit has set itself scientific objectives, including the forward-looking aspect of its policy.

Strengths and possibilities linked to the context

The unit is composed of senior team leaders who are full-time researchers, and four of them are clinicians. This allows both fundamental research and transfer to the clinic. The active participation of senior PIs in consortia (InterAging program, Ulysseus, IRP "Cancer Aginig & Haematology; AGEMED cross-cutting program, FHU

OncoAge, EUROBIOMED, 4 GDR), numerous committees (Académie National de Médecine, European Society of Pathology, European Society for Mitochondrial Research and Medicine, EMBO members, Academia Europae) and evaluation bodies (MRC, Grantova Agentura Czech Republic, Fondation Contre le Cancer Belge, Foundation Breast Cancer UK,) allows them to have a global vision of the national and international environment in which the Institute's research takes place, but also of the competition. These activities also ensure the support of the supervisory authorities.

Decisions regarding the scientific orientations of the unit and other questions were taken collegially by a committee composed of the director, his deputy and the laboratory council that meets once per quarter. Committee members were advised in their choices by a SAB composed of external personalities and representative of funding bodies. More specific missions were delegated to ad hoc committees (e.g. core facilities, seminar planning, health and safety or website committees). In addition, PIs met once a month to analyse the economic and societal impact of the policies implemented.

Weaknesses and risks linked to the context

The SAB only includes one woman and no middle career scientists.

3/ The functioning of the unit complies with the regulations on human resources management, safety, the environment and the protection of scientific assets.

Strengths and possibilities linked to the context

Among the existing staff, it is noteworthy that fourteen people were promoted to the next highest position (i.e. ADJ to Tech, tech to AI, IE to IR, CR to DR). Gender parity (within the limit of the 40/60 ratio for each sex) is globally respected in the permanent staff: 34 women/37 men among researchers, 50 women/34 men in the research support staff.

According to the written document, Health and Safety issues were assessed as follows: 1) internal emergency plans and the single risk assessment document were updated annually. Authorisations for the use of research products of human origin (CODECOH) and OGMs were obtained. The director, in agreement with the competent person in radioprotection, is in charge of ensuring that safety instructions concerning the possession and use of radioactive materials or sealed sources are respected. 2) risks associated with the transport of hazardous materials between sites are assessed by trained personnel and were certified by a CNRS inspection in 2019. 3) The unit has also carried out numerous actions to make practices safer by purchasing protective equipment (extractor hood, open-air storage of N2 containers, protective gaiters for feet and lower legs, guardrails – ladder zootechnicians), ensuring the maintenance of equipment (high-speed centrifugation, PSM, air conditioner) and its periodic checks, and/or replacing obsolete or risky equipment (rotors, new L2, L2+ facilities). Treatment of effluents from the L2 laboratories, waste and chemical products is carried out through specific procedures that guarantee safety for the environment. All health and safety guidelines are available in booklets, and staff awareness is regularly raised.

Weaknesses and risks linked to the context

Health and security issues do not appear to be fully taken into account. The unit has only two prevention assistants (total = 0.5 ETP). One prevention assistant is also the competent person for radiation protection. There is no safety person specifically dedicated for each building. There is a lack of feedback on safety issues. There is no RPSS (mental health committee).

There is a large discrepancy among teams on how students and postdoctoral fellows are mentored. The doctoral school is not sufficiently implicated in supporting PhD students and thesis monitoring committee members are not always exterior to the unit. There are no post-doctorate representatives on the lab council. There is no formal training for interviews. The technical staff is not sufficient. The staff allocation to platforms and the different missions are not clearly defined. Working space is limited and will shortly become critical due to the reallocation of the Antoine Laccassagne centre facilities, creating uncertainty and impacting personal well-being and quality of work.

EVALUATION AREA 2: ATTRACTIVENESS

Assessment on the attractiveness of the unit

The unit has an excellent international reputation and attractiveness. Unit members make an excellent contribution to the development of research in Europe and beyond through the invitation of its members to prestigious international congresses, the organisation of international conferences, and the active participation in various high-level national and international scientific committees. Members of the unit have also received twenty awards (Grand Prix INSERM, Prize Charles Léopold Mayer...). All these actions translate into an excellent attractiveness of the unit in terms of recruitment of permanent staff and postdoctoral researchers, and good dynamics in the recruitment of PhD students. Funding is excellent as a leader at the national (i.e. 16 ANR, 5 INCa PLBIO, two INCa PRTK, four teams labelled by FRM and one by the League Against Cancer) and good at the national (94 contracts with charities) and local (57 contracts) level. The unit has developed remarkable technical expertise through the creation of platforms, three of which are nationally accredited (IBISA).

1/ The unit has an attractive scientific reputation and contributes to the construction of the European research area.

Strengths and possibilities linked to the context

Members of the unit have participated in major international conferences (CSHL, Keystone, EMBO, Gordon, FASEB). They have also organised conferences or workshops (ICAD 2018, Nice; CSH Asia Meeting, 2016 & 2018; ICTE 2016 & 2020; EMBO workshops 'Telomere Biology in Health and Human Disease, 2018; 1st and 2nd workshop on aquatic research models to study regeneration and aging, 2018 & 2019) and six invitations abroad as a visiting professor. Members of the team participate in more than 40 editorial boards of scientific journals (among them PNAS, Nature Communications, Cancers, Scientific Reports) and seven collection directors (Cancers (x3), Translational Lung cancer Res, J Thoracic diseases, J Developmental Biology). Team members have participated at least in seventeen national (for 'Ligue Nationale Contre le Cancer', ...), or international expertise (Foundation Breast Cancer, UK; Fondation Contre le Cancer, Belgium; Worldwide Cancer Research; Academy of Science, Poland; Association for Cancer Research, Holland; MRC, Catalan government) and participated in scientific boards (coordinator of LIA ROPSE, Chair of Agemed, director of the International program (France/China) 'Cancer Aging & Haematology, special adviser to the French Minister of Higher Education, Research and Innovation, members CNRS or INSERM scientific sections, board member Avesian ITMO cancer, Ligue Contre le Cancer 'comité Ile de France', INPS, AMGEM Foundation, president of the user's council of EMBRC, chair of Cochin institute SAB, Fondation Allianz institute de France, Panel Expert HCERES, special adviser to the French Minister of Higher Education, Research and Innovation, director of FHU OncoAge), thirteen participation in learned societies (National Academy of Medicine, E-mit Society, European Society of Pathology, French society of Angiogenesis) and winners of nineteen scientific prizes (Grand Prix INSERM, Prize Charles Léopold Mayer, National Academy of Science France 2018, Prix H et M-J Mitjavile, National Academy of Medicine 2020, Prix Fabrice Le Mouhaer 2021, « Prix d'Excellence de l'UCA » 2021, Prix du « centenaire de la Ligue Nationale Contre le Cancer », iPhD innovation award, Bpi France, Prix Avenir Ruban Rose).

Weaknesses and risks linked to the context

Not all PIs have national or international responsibilities or organise congresses that would allow them to gain visibility.

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

Strengths and possibilities linked to the context

The unit welcomed 81 PhD students and 21 postdoctoral fellows. During the period 33 persons were hired or promoted (2 professors, two DR, five MCU or MCU-PH, eight CR, 3 PH, 4 research engineer, 5 study engineer, one assistant engineer, 4 technicians and 2 technical assistants). The IRCAN also welcomed four visiting researchers and 199 trainees. From a technological point of view, the staff and students are also trained on the different platforms of IRCAN, which allows them to have access to the skills and technical expertise they require. The access to permanent training is excellent for the technical staff.

Weaknesses and risks linked to the context

Publications were not always deposited on open science platforms (HAL)

3/ The unit is attractive because of the recognition gained through its success in competitive calls for projects.

Strengths and possibilities linked to the context

As of January 1, 2016, teams have obtained 39 national contracts (excluding doctoral grants) as leader (including 16 ANR, 5 INCa PLBIO, 2 INCa PRTK and other funding from ITMO Cancer (x1), INSERM Transfert (x3), Plan Cancer (x3), CNRS (x4), INSERM (AGEMED2, and InterAging), 21 contracts in the framework of the PIA (1 IDEX «Jedi»), one FEDER and one CPER; 92 from local authorities («Canceropole» PACA, Région PACA, «Conseil Départemental») and 95 from charities (FRM, ARC, Ligue Contre le Cancer, AFM telethon). Four teams were labelled by FRM and one by 'la Ligue Contre Le Cancer'.

During the period fifteen International contracts were obtained, of which eleven as leader: 90k€ ABSF ALAN B SLIFKA FOUNDATION, 45 k€2015 Dupont Young Profesor Award, 130 k€ Moore Foundation, 130k€ Longevity Impetus Grant from the Norn Group, 100 k€ Sanofi Innovation Award Europe and four MSCA-ITN H2020.

Weaknesses and risks linked to the context

No major international ERC-type funding was obtained during the contract.

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

Strengths and possibilities linked to the context

IRCAN has developed eight technological platforms. It manages **three animal facilities** in three different locations (rodent, fish and marine invertebrate). The rodent facility also hosts PICMI (Plateforme d'imagerie cellulaire et moléculaire de l'IRCAN), Genomed (genomic platform) and Cytomed (cytometry platform) at the newly renovated PEMED-PCV site. The PEMED-PCV team is composed of seven members and directed by a PI from IRCAN. The fish facility (PEMAV) employs two persons and the marine facility one technician. PICMI consists of 42 microscopes; it is labelled IBISA and is operated by a team of four people including one researcher (CR) at its head. The Genomed platform is affiliated with UCAGenomix and labelled IBISA since 2017. Two engineers (for the equivalent of one full-time employment) work on the platform. The Cytomed platform staff is composed of three persons (1 CR, 1 IE (50%) and one AI (20%)) and was financed up to 677 k€ through six grants. The Organoids platform 3D-Hub is labelled by IBISA and is part of the Organoid Platform Network with Caen and Lille. Its staff is composed of three persons (2 IE and 1 scientific head). There are also two in-house facilities (histology and bioinformatics).

Weaknesses and risks linked to the context

Platform staff appears to be insufficient. **For animals that require daily care, an adequate number of caretakers and animal handlers are required to allow staff to rotate and provide technical and scientific support to users.**

EVALUATION AREA 3: SCIENTIFIC PRODUCTION

Assessment on the scientific production of the unit

The scientific production of IRCAN is excellent in terms of quantity (726 papers in total, 138 as PI) and excellent to outstanding in terms of quality (Nature, Cell Metabol, EMBO J, NAR, Nat Commun, Mol Cell), with individual teams contributing more or less equally to these. IRCAN provides a good regulatory framework for ethics and knowledge sharing, although efforts remain to be made on this last point.

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

Strengths and possibilities linked to the context

The scientific production of IRCAN is based on the plurality of scientific and technical expertise of its teams (molecular and cellular biology, aging-related pathologies, drug development, cohort and biobank access, and a variety of classic and **original animal models such as sea anemones, coral and zebrafish**) that allow the development of original studies on the theme of aging. This expertise has led to major scientific advances in the fields of senescence mechanisms, phylogeny, DNA damage, mitochondrial diseases and angiogenesis. These major results have been published in high quality journals (Nature, Cell Metabol, EMBO J, NAR, Nat Commun, Cancer Res, Mol Cell, and Neurology). Moreover, IRCAN is a major actor in many international scientific networks (e.g. ITN HealthAge, INSERM AGEMED, International Network iGenolevure, COST actions MAristem and Ocean4Biotech, European Joint Programming Initiative on Antimicrobial Resistance, Council of the European Vascular Biology Organization, International Research Project (IRP) on 'Haematology, Cancer and Aging').

Weaknesses and risks linked to the context

Scientific production is heterogenous among teams.

2/ Scientific production is proportionate to the research potential of the unit and shared out between its personnel.

Strengths and possibilities linked to the context

IRCAN's publication policy is clearly defined, with the aim of increasing publication quality within the capacity of each team.

Weaknesses and risks linked to the context

For some teams, publication in excellent journals is beyond their research potential within a contract period.

3/ The scientific production of the unit complies with the principles of research integrity, ethics and open science.

Strengths and possibilities linked to the context

There were no retractions over the period. **The experimentation on animals is done within the strict framework of the law and has received the necessary approvals from the local ethics committee and the ministry.**

Weaknesses and risks linked to the context

Open access publishing is not encouraged enough. Traceability and data storage policies are left to the discretion of the PI. There is no clearly defined policy at the unit level either in terms of setting up laboratory notebooks (paper or electronic) or data protection (computer attacks). The protection of sensitive scientific activities such as **the animal house is not detailed.**

EVALUATION AREA 4: CONTRIBUTION OF RESEARCH ACTIVITIES TO SOCIETY

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

IRCAN's communication activities towards the general public are excellent, with team members taking part in events aimed at the general public (annual science festival, action to raise awareness of tobacco poisoning, travelling photographic exhibitions, etc.). Interaction with socio-economic actors is remarkable, as evidenced by 25 patents, seventeen contracts with industry, and the creation of two start-ups.

1/ The unit stands out by the quality of its non-academic interactions.

Strengths and possibilities linked to the context

As of January 1, 2016, seventeen contracts with industry were signed by eight teams for a total amount of 1,273 million euros. Clarins, Telonium, Sanofi, EDF, SATT, Roche (x2), IRIS pharma, cytovia, ROCA Therapeutics, Sofia Cosmetics (x3), Coty Lancaster, Meiogemix, cefipra, SFNDT).

One team has created two start-ups (Rocca Therapeutics & Kekkan Biologics). Six PhD students were funded by industry (3 as CIFRE).

Weaknesses and risks linked to the context

NA

2/ The unit develops products for the socio-economic world.

Strengths and possibilities linked to the context

Twenty-five patents have been filed by ten IRCAN teams and one is under license. Two start-ups were created. Team 7 is involved in the 'Quality' unit and workgroup of the Pôle Biologie-pathologie of Nice University Hospital as well as National quality evaluator COFRAC (Biology, Genetics) (ISO NF 15,189), member of national workgroup 'Genetics' for COFRAC. Team 8 has provided a state-of-the art document on Marine Ecotoxicology for the Fédération Française des Produits de Beauté (FEBEA). Team members are involved in providing recommendations to competent bodies for norms associated with cosmetics/sun screens in order to reduce their impact on the marine environment. The members of the unit participate in numerous expertise (members of the INSERM scientific committee, participation in SAB, expertise for international and national actors supervising research and charitable foundations).

Weaknesses and risks linked to the context

Some teams are not involved in the transfer and valorisation process (4 teams have no patent deposit).

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

Strengths and possibilities linked to the context

Five teams participated in 24 scientific mediation events (science festival from 2016 to 2021, travelling photographic exhibitions, interactive workshops, conferences in high school classes, awareness-raising activities on tobacco poisoning). Five teams have participated in fourteen radio/TV programs or articles in the written press and in ten conference debates.

Weaknesses and risks linked to the context

Not all IRCAN teams are involved in sharing knowledge with the general public or taking part in debates in society

C – RECOMMENDATIONS TO THE UNIT

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

The institute would benefit from a more balanced SAB with the integration of women and mid-career scientists. The emergence of young teams requires time (a contract) and significant financial and human investment. It appears that some new teams experienced difficulties to develop. The committee encourages the IRCAN to reconsider its policy of allocation of resources in order to promote emergence.

Technical support is not very well distributed. Most teams have about ten researchers or scientific staff. Nevertheless, it appears that some of them have a deficit in human resources which strongly diminishes their capacity to conduct ambitious research and obtain a quantity and quality of results up to IRCAN standards. The committee would encourage that there are at least three full-time equivalents per team. Some smaller teams would benefit from regrouping to reach this critical mass. The technical staff should be more clearly allocated to teams versus platforms, and personal staff who is exclusively dedicated to platforms should receive some help to be able to implement technologment developments, and thus maintain innovation.

Particular attention needs to be paid to the training and support of students (PhD and post-doctorates). The committee encourages the tutelles (INSERM, CNRS, doctoral school, foreign welcome centre) and the laboratory to work hand in hand to set up corrective actions concerning the welcoming of foreign students, training and professional insertion.

Attendance to departmental seminars should be reinforced in the unit. Each student, postdoc, and if scheduling permits the CRCNs, should present once a year. All members of the unit, including the PIs should be highly encouraged to attend. This will facilitate mentoring and training of students and postdocs in terms of scientific rigour, preparing a talk, asking and responding to critical questions and constructive feedback. It will also facilitate the sharing of ongoing projects, technical knowledge, and themes of research within the department, which is essential given the large diversity of topics within this 15 team unit.

In accordance with the national standards of research organisations (INSERM, CNRS) and the 'Université Côte d'Azur', the committee encourages the unit to take advantage of the possibilities offered by the supervisory bodies to implement and/or fully develop proactive measures concerning psychosocial risks, health and safety of personnel, computer security, environmental challenges and the sustainable development of research.

Recommendations regarding the Evaluation Area 2: Attractiveness

The committee congratulates the unit for its excellent attractiveness. The unit should continue to host international symposia and meetings. In order to continue and amplify the actions carried out by the unit, the committee recommends that all the personnel be involved in the actions concerning the outreach of the unit and not only the PI.

To increase the chances of obtaining European or international contracts, it would be beneficial to carry out an in-house review of applications, or to hire staff dedicated to setting up these projects.

Recommendations regarding Evaluation Area 3: Scientific Production

IRCAN has initiated a policy of collaboration between the teams, which should be continued and strengthened not only for the technological aspects, but also in the definition of common scientific objectives between the teams. Particular attention must be paid to interdisciplinarity. For fundamental research, the studies would benefit from the contribution of different disciplines (chemistry, physics, mathematics...). On the other hand, translational (or clinical) studies could be strengthened by a more important dialogue between clinicians and researchers. The committee encourages the unit to continue to strive for high quality publications when possible and to develop its collaborations at the national and international level.

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

Some teams are hesitant to develop communication with the general public. The committee would recommend not to neglect these points which may help in the recruitment of future collaborators (researchers or research support staff), but also bring public support, essential to the maintenance of research activities in the long term. Concerning the valorisation and the relations with the industrial world, the committee encourages teams that are still hesitant to move forward in integrating their research with industrial applications, in order to meet IRCAN's objective of developing treatments to aging-related pathologies.

RESPONSES TO SUPERVISING BODIES CONCERNS (IF ANY)

The committee could only encourage translational research through the creation of clinical research-based teams. However, the success of such a structure is conditioned to the real will of interaction between a researcher and a clinician. It must be based on a solid reflection on the issues addressed, which must emerge from basic research or clinical questions. The artificial juxtaposition of researchers and clinicians is indeed destined to fail.

The splitting up of teams on different sites raises problems of safety (movement of personnel, transport of dangerous products, OGMs), a loss of time and also a loss of feeling of belonging to the same entity. Security and safety officers must be present at all times in sensitive **buildings such as animal houses**. Concerning the relocation of the teams in the Pasteur Tower, several issues must be taken into account before the move. First, adjustments must be anticipated in order to maintain (and ideally increase) the work surfaces (laboratory and office) and avoid anxiety. The second is to pay particular attention to the ergonomics of the laboratories. It is necessary not to spread the activities over all the floors for safety reasons (chemical products, in the elevators, dispersion of OGMs) and work efficiency (loss of time in moving around, protocols incompatible with floor changes). But it would be better to mutualise some spaces notably for common storage.

TEAM-BY-TEAM ASSESSMENT

Team 1: Telomere, Senescence and Cancer
 Name of the supervisor: Mr. Eric GILSON

THEMES OF THE TEAM

The team is a leader in the domain of telomere biology with work on general questions regarding telomere protection and signalling, replicating senescence, organismal aging, and oncogenesis.

CONSIDERATION OF THE RECOMMENDATIONS OF THE PREVIOUS REPORT

The previous evaluation was very positive and made no significant recommendations.

WORKFORCE OF THE TEAM

Permanent personnel in active employment	
Professors and associate professors	2
Lecturer and associate lecturer	1
Senior scientist (Directeur de recherche, DR) and associate	1
Scientist (Chargé de recherche, CR) and associate	2
Other scientists (Chercheurs des EPIC et autres organismes, fondations ou entreprises privées)	0
Research supporting personnel (PAR)	4
Subtotal permanent personnel in active employment	10
Non-permanent teacher researchers, researchers and associates	1
Non-permanent research supporting personnel (PAR)	3
Post-docs	0
PhD Students	5
Subtotal non-permanent personnel	9
Total	19

EVALUATION

Overall assessment of the team

The scientific production of the team is outstanding and innovative, with eight publications as PI (EMBO Rep, EMBO J, Aging Cell, Nat Commun, Mol Cell) and twenty in collaboration (Cell Res, Nature). The team leader has outstanding national and international recognition in telomere biology (Grand Prix INSERM) and remarkable fund-raising capacity (3.5 M€ over the assessment period). The team has outstanding attractiveness with excellent training activity (11 PhD students) and excellent contribution to society, with three patents and an industrial grant.

Strengths and possibilities linked to the context

The team is currently composed of nineteen members including nine permanent researchers (1 PUPH, 2CR, 1 MCU, 1 PH, 2 DR, 2 IR), one IE and 2 AI, and five PhD students. It is an international leader in fundamental research on telomere biology and senescence, notably exploring both telomeric (Mol. Cell 2016) and non-telomeric (Mol Cell 2018, EMBO J 2019, Aging Cell 2020) roles of the sheltering protein TRF2, and developing a novel model (coral) for studies of telomeres/aging and the impacts of the environment (Mol. Ecol. 2021).

The team has excellent funding with a total of ~3.5M€ grants in the period (38/43 as leader): 383K€ in international funds (INSB Internat. China PRC, LIA RELATIONS INTERNAT, EU-MSCA-ITN); 2.7M€ in national funding (4 ANR, 3 INCA, ARC, AFM, Inserm), 93K€ in regional funds (Canceropole, Fellowships), and 373K€ in Industrial collaborations. The team published in top journals (8 as PI in high-profile journal: EMBO J, Nat Commun, Mol Cell, Aging Cell; and twenty in collaboration, among them some in outstanding journals: Nature, Nat Comm, NAR (x3), Cell Res), in addition to twelve reviews and one method of publication.

The high number and quality of co-authored publications are clear evidence of the team very strong participation in scientific collaborations.

The team is highly attractive and visible, with international PhD students and Postdocs, and 33 presentations in international scientific meetings (Germany, China, USA, Korea). Two postdoctoral fellows were recruited CRCN Inserm in the period.

The team plays leading roles in national and international structures (e.g. PRC China), organised eight international meetings in the period (e.g. 2 EMBO Workshops, 2 CSHL-Asia meetings) and coordinated two international INSERM programs (EGEMED, InterAging). The group leader holds a number of scientific expertise positions (e.g. Scientific Council of the Institut Curie, Président SAB Institut Cochin, coordinator International Network to fight aging diseases). The team leader recently received the Grand Prix INSERM and the price Mayer of the French Academy of Sciences.

Its extensive contribution to society is exemplified by a 373 K€ grant and two patents (INSERM transferred COPOC, contract with CLARINS on coral as a slow-aging aging model). It also undertakes actions of scientific outreach, including seminars on telomeres/aging to the Collège de France and Shanghai Ruijin Hospital.

Weaknesses and risks linked to the context

The strong focus of the team on communication to specialist audiences does not appear to be accompanied by a strong activity in outreach to the public and other actors. This is recognised in the autoanalysis, which points to a (relative) weakness in translation of the teams results to clinical or industrial applications.

RECOMMENDATIONS TO THE TEAM

The team is to be congratulated on the quality of their contributions and urged to continue their excellent work. The team is to be encouraged to exert further effort in the communication of their results to the public and translation to clinical and/or industrial applications. The committee also encourages the team to continue the development of their new models, including coral.

Team 2: Retrotransposons and Genome plasticity
 Name of the supervisor: Mr. Gaël CRISTOFARI

THEMES OF THE TEAM

The team works on retrotransposons and genome plasticity. The main objectives are to understand how transposable elements contribute to the plasticity of the human genome and epigenome in the germline and somatic cells, particularly during aging and cancer.

CONSIDERATION OF THE RECOMMENDATIONS OF THE PREVIOUS REPORT

The team addresses all the previous recommendations. It participated in international meetings (CSHL (x2), FASEB (x2), EMBO (x2)) and published in top-tier journals (Mol Cell, NAR, Neurology). The lab also made an effort to attract talents from abroad. The group trained several trainees who have moved on to follow different career paths. A collaborative agreement has been set up with the start-up company MyDataModels to develop IA-based genomic analyses able to predict the impact of transposable element insertions. The team co-organized the genomic winter school with the support of Idex UCAJEDI. It contributed to several courses in computational biology and genomics at the master or doctoral level in major institutions (Institut Curie, Collège de France), as well as in national or European universities (Torino, Toulouse, Nice, Lyon, Sorbone-Paris Cité).

WORKFORCE OF THE TEAM

Permanent personnel in active employment	
Professors and associate professors	1
Lecturer and associate lecturer	0
Senior scientist (Directeur de recherche, DR) and associate	1
Scientist (Chargé de recherche, CR) and associate	1
Other scientists (Chercheurs des EPIC et autres organismes, fondations ou entreprises privées)	0
Research supporting personnel (PAR)	2
Subtotal permanent personnel in active employment	5
Non-permanent teacher researchers, researchers and associates	1
Non-permanent research supporting personnel (PAR)	2
Post-docs	0
PhD Students	4
Subtotal non-permanent personnel	7
Total	11

EVALUATION

Overall assessment of the team

The attractiveness and scientific output of the team are outstanding. The team has excellent national (participation in Investments of the Future Program, direction of GDR Mobile Genetic Elements) and international visibility (invitations to international conferences: CSHL (x2) FASEB (x2); EMBO (x2)). The publication record of the team is outstanding, with publications in eLife, Mol Cell, NAR, and Neurology as corresponding author. The capacity to raise funds for basic research is remarkable (2 M€) with one European contract as partner (DG SANCO, 40K€), three ANR as PI and a 'labelled team' FRM grant. The contribution of research activities to society is excellent: one patent, one collaboration with an industrial partner, and numerous conferences for the general public.

Strengths and possibilities linked to the context

The team is composed of one DR, one PU-PH, one CR, four engineers, one assistant engineer, 1 postdoc, and two PhD students.

The lab developed ATLAS-Seq to map L1 insertion in human genomes and further comprehend insertion mechanisms (eLife, 2016; Mol Cell, 2019). The group successfully secured a European grant (D.G. Sanco) is involved in several Future Investment Programmes was attributed four ANR funding (3 as PI), and was labelled FRM team for a total of 2M€. Since 2016, the team has published seven scientific articles as PI, including three in high-quality journals (e.g. Neurology, Mol Cell, NAR), 27 in collaboration (including outstanding publication in Nat Commun (x2), NAR (x2), Neurology (x2), J. Clin Invest). The team also published 51 clinical articles and four reviews. The lab also made an effort to attract talents from abroad. It trained six PhD students who have now moved on with different career paths. The team participated in several 'Investments for the Future' programs and the national cross-cutting program on genomic variability (INSERM GOLD). The team leader has been deputy director of the GDR on mobile genetic elements since 2016 and was reconducted for 2021-2025. The team has now gained international visibility, evidenced by invitations to seventeen international meetings (e.g. CSHL 2016, 2020; FASEB 2017, 2019; EMBO 2017, 2021).

The team leader heads the genomics platform in the institute, serves as an Associate Editor for Mobile DNA and was awarded by the National Academy of Medicine in 2020. The team filed a patent in 2019. The lab established a collaboration agreement with an AI company (MyDataModels). The team is well connected with the public, including patient associations.

Weaknesses and risks linked to the context

N/A

RECOMMENDATIONS TO THE TEAM

The team is encouraged to continue its effort to gain international visibility for its research excellence and to continue to attract talents. One of the next milestones for the team would be seeing trainees becoming independent PIs in top-ranked institutes.

Team 3: Mitochondria, diseases and aging
 Name of the supervisor: Mrs. Véronique PAQUIS-FLUCKLINGER

THEMES OF THE TEAM

The research interests of the team concern the identification of new genes and mechanisms responsible for mitochondrial diseases (MD), with a focus on aging-associated mitochondrial dysfunction and its involvement in neurodegenerative disorders. The long-term objective is to reduce diagnostic and therapeutic deadlocks, leading to personalised medicine.

CONSIDERATION OF THE RECOMMENDATIONS OF THE PREVIOUS REPORT

It was recommended that the team reinforces efforts to decipher molecular mechanisms, which would also allow easier access to high-impact factor publications. In particular, it was advised that team 3 should focus more on specific genes (e.g. CHCHD10 and MDH2), trying to understand their mechanism of actions.

The team followed the recommendation, developing work to (i) better characterises the role of the CHCHD10 protein (ii) understand how CHCHD10 mutations lead to motor neuron cell death by using a knock-in mouse model and iPSCs and (iii) determine which interventions aimed to restore correct specific mitochondrial functions may be therapeutic options. Results from these studies appeared in some of the best publications of the team (Brain, EMBO Mol Med, A.m. J Hum Genet, Acta Neuropath).

The expert committee recommended that to increase international visibility and further increase recognition, the team leader could consider organising a workshop or a short focused meeting in her area of expertise.

The team leader has organised two meetings: a Winter School 'Mitochondria in Health and Disease', December 2018, and MitoNice2022, September 2022. The team also obtained three grants funded by FRM, AFM and ANR as leader.

The team was strongly encouraged to increase interactions with other teams within the institute, in particular with basic research teams. Efforts in this direction are underway, as illustrated by a new grant obtained together with four other groups to study CHCHD10.

It was also suggested that the team would benefit from the involvement of earlier stage scientists (PhD and MSc students and postdocs). This aspect remains to be improved as of 31/12/2021.

WORKFORCE OF THE TEAM

Permanent personnel in active employment	
Professors and associate professors	3
Lecturer and associate lecturer	1
Senior scientist (Directeur de recherche, DR) and associate	0
Scientist (Chargé de recherche, CR) and associate	1
Other scientists (Chercheurs des EPIC et autres organismes, fondations ou entreprises privées)	0
Research supporting personnel (PAR)	8
Subtotal permanent personnel in active employment	13
Non-permanent teacher researchers, researchers and associates	0
Non-permanent research supporting personnel (PAR)	0
Post-docs	0
PhD Students	1
Subtotal non-permanent personnel	1
Total	14

EVALUATION

Overall assessment of the team

The attractiveness of the team is excellent, allowing a continuum and an excellent visibility between basic and clinical research. The contribution to research and publications are excellent. Since 2016, four papers as first or last author (Brain, Acta Neuropathol, Am J Hum Genet, EMBO Mol Med) and three collaborative papers (Nature Comm, Cell Metab, Acta Neuropath) were published in excellent journals.

The team has been very successful in obtaining multiple national grants as leader (2 ANR, AFM, FRM labelled team). The team has filed two patents in 2021 corresponding to a repositionable molecule for the treatment of neurological mitochondrial diseases and to a new algorithm for prenatal diagnosis by NGS. The team is engaged in numerous patient associations (Annual Rare Disease Reference Centre days, Telethon) and national bodies (French minister of research), reflecting an outstanding contribution to society is.

Strengths and possibilities linked to the context

Team 3 is composed of three PUPH, 2PH, one CRCN, two postdocs, three engineers (CHU and CNRS), one AI (UCA), and one technician (CHU). The team benefits from proximity to the Department of Medical Genetics at Nice University Hospital, the Reference Centre for Mitochondrial Diseases, and the Medical Data laboratory (Idex) that allows interaction with bioinformaticians and teams involved in AI.

The team produced two categories of papers: those that correspond to original research with specific models to answer mechanistic questions, and those related to translational research in connection with the hospital team (e.g. analysing the effects of variants involved in mitochondrial diseases). The team's research activity is remarkable: generation of cellular **and mouse models**, identification of factors controlling the stability of the PHB complex involved in motor neuron viability, identification of a repurposing drug (1 patent filed in 2021), characterisation of a new Krebs cycle disease. This is reflected in excellent publications, including four papers in journals of the broad impact as first or last author (Brain, Acta Neuropathol, Am J Hum Genet, EMBO Mol Med). The team has published in total 22 papers as principal investigators (14 scientific articles, 6 clinical and 2 reviews) and fifteen in collaboration, three of which in high-profile journals (Nature Comm, Cell Metab, Acta Neuropath). All the tenured researchers, professors, postdocs and students contribute to the scientific production of the team. The PI received two prizes (FRM, Prix Excellence Côte d'Azur). The national funding is remarkable with two ANR, one FRM, one AFM as leader and for a total amount of 4,421 M€.

The PI provides expertise to the French Minister of Higher Education, Research and Innovation, at Institut National de Police Scientifique, and participates in a mirror group in Horizon Europe and to several scientific boards of different patient associations. Beyond these important societal duties, the outreach activity consists of dissemination of information for patient associations, local newspapers and social networks.

Weaknesses and risks linked to the context

The ratio of PhD students and postdoc is low (ratio PhD student/HDR =1). The team members have no editorial responsibilities.

RECOMMENDATIONS TO THE TEAM

The team has an outstanding level of national funding, excellent visibility and production in terms of basic and clinical research. Given its composition, the committee recommends the team to stay focused on its main research theme, and encourages it to expand, including through the recruitment of more students. Editorial responsibilities are also encouraged.

Team 4: Circulating tumour cells and lung tumour progression
 Name of the supervisor: Mr. Paul HOFMAN

THEMES OF THE TEAM

Team 4 develops a clinical research topic on lung cancer and more particularly aims to discover and characterise predictive and prognostic markers. To be used in personalised medicine to define therapeutic strategies (targeted therapies and immunotherapy).

CONSIDERATION OF THE RECOMMENDATIONS OF THE PREVIOUS REPORT

The team successfully developed networks and raised funds internationally, as the previous HCERES committee suggested.

To take into account the advice of the HCERES committee's experts, emphasis has been placed on the characterisation of CTCs and their role in disease progression both in basic research (Cell Systems 2021) and in clinical research (Annals of Oncology 2018)

WORKFORCE OF THE TEAM

Permanent personnel in active employment	
Professors and associate professors	3
Lecturer and associate lecturer	2
Senior scientist (Directeur de recherche, DR) and associate	1
Scientist (Chargé de recherche, CR) and associate	3
Other scientists (Chercheurs des EPIC et autres organismes, fondations ou entreprises privées)	0
Research supporting personnel (PAR)	5
Subtotal permanent personnel in active employment	14
Non-permanent teacher researchers, researchers and associates	0
Non-permanent research supporting personnel (PAR)	6
Post-docs	0
PhD Students	4
Subtotal non-permanent personnel	10
Total	24

EVALUATION

Overall assessment of the team

Team 4 is mainly clinic and is outstanding for its attractiveness, mainly because of the team leader's national and international reputation. Clinical research carried out by the team is remarkable with publications as PI in Lancet Respiratory Medicine, Journal of Thoracic Oncology (x2), Annals Oncol (x2), J. Clin Oncol and fundamental research are good as PI (Cells, Cancers, Lung Cancer) to very good (Theranostics (x2), Nucleic acid research). The team has an outstanding capacity to raise funds nationally (2 M€, Thyncrna, bio-banque ANR, ANR RFID...) and locally (505 k€). The dissemination of research to the private sector (6 patents filed and 2 industrial contracts) and general public (Tabado project, researchers night and national day of science) is outstanding.

Strengths and possibilities linked to the context

Team 4 is composed of four full-time researchers, four PU-PH, three MCU – PH, 5 engineers or technicians), one postdoctoral fellow and eight students (PhD or Msc students), for a total of sixteen people. The team is developing translational research to understand the mechanisms that govern progression and metastasis of lung cancers. More specifically, the team aims to link these mechanisms to the response and/or resistance to treatments (J Thoracic Oncology, Nucleic Acid Research). Over the period 2016–2021, the team obtained four national contracts as leader (CNRS, ITMO Cancer), three collaborations within the framework of the IDEX Jedi. They also led twelve with local authorities (Canceropole, Region, Dreal) and four with national foundations (FRM, Fondation BMS, Ligue contre le cancer, Canc AIR). It obtained one European contract as leader (Sysbiodrez) and one in collaboration (Vaccinophagy).

One clinical trial, Circulating Tumour Cells in Lung Cancer Screening (NCT02500693), is currently being conducted by the team.

The team produced 15/31 scientific publications as PI in good (Oncoimmunology, Cancers, Frontiers Pharmacol) to excellent journal (Cell system, Theranostic) and one outstanding journal (Nucleic Acid Research), 14/31 published clinical articles are as PI, some in excellent (J Thoracic Oncology) or outstanding (Anals Oncol, JAMA) journals, and 43 reviews. Two team members are involved in eleven journal editorial boards and have edited three collections (Cancers, Translational Lung Cancer Research, J Thoracic diseases). Six patents have been filed and two contracts were financed by industry (Telonium, Bohringer).

The team leader has international recognition (member of the Royal Belgium Academy, European Society of Pathology, International Association for the study of the lung, European Society of liquid biopsies, 'Académie internationale de Pathologie') and obtained a national prize (Prix du Centenaire de la Ligue Contre le Cancer). The team leader organised three international meetings (European Congress of Pathology, two joint meetings FHU Oncoage/MD Anderson Center) and is a member of four scientific societies (European Society of Athology, International Association for the Study of the Lung, European Society of Liquid Biopsy and Academie Internationale de Pathologie). The team is attractive to young researchers or foreigners because of the technological environment of IRCAN and clinical research with access to biobanks. Over the period the team has hosted seven PhD students. The team also organised an e-learning course for students (MSc Biobanks and Complex Data Management). The laboratory has also welcomed foreign scientists from Portugal, Italy and Malaysia.

Weaknesses and risks linked to the context

The national and international visibility of team members (excluding team leader) is limited. The interaction between the team and society is not developed in the written report.

RECOMMENDATIONS TO THE TEAM

The committee encourages team members to develop their networks and visibility independently of the team leader. The committee recommends that the team continue its efforts to bring basic research to the level of excellence of its clinical research. This can be achieved through increasing PhD student recruitment and co-supervision of thesis students by clinicians and scientists of the team.

Team 5: Epithelial homoeostasis and tumorigenesis
 Name of the supervisor: Mrs. Chloé FERAL

THEMES OF THE TEAM

Team 5 'epithelial homoeostasis and tumorigenesis' develops research on stem cells and their role in skin tissue and lung homoeostasis and cancer development.

CONSIDERATION OF THE RECOMMENDATIONS OF THE PREVIOUS REPORT

In response to the previous recommendations, a complete project on skin regeneration during aging was undertaken. The team currently develops a strong research axis on hair follicle regeneration based on single-cell RNA-seq analysis, completely independent of CD98hc. This project aims to define the adult stem cell reservoir population involved in regeneration.

The team did not obtain academic grants from Europe but a Sanofi Europe Award allowed them to obtain a CIFRE grant to extend the work on nobodies with the aim of accelerating transfer to industry. They filed a patent on 'Methods and compositions for treating skin afflictions' in 2018 that was extended to the US in 2019. A collaborative contract with L'Oréal is in place on the aging project (started 2020). The zebrafish project has been halted for the moment due to lack of manpower.

WORKFORCE OF THE TEAM

Permanent personnel in active employment	
Professors and associate professors	0
Lecturer and associate lecturer	0
Senior scientist (Directeur de recherche, DR) and associate	1
Scientist (Chargé de recherche, CR) and associate	3
Other scientists (Chercheurs des EPIC et autres organismes, fondations ou entreprises privées)	0
Research supporting personnel (PAR)	1
Subtotal permanent personnel in active employment	5
Non-permanent teacher researchers, researchers and associates	0
Non-permanent research supporting personnel (PAR)	0
Post-docs	0
PhD Students	3
Subtotal non-permanent personnel	3
Total	8

EVALUATION

Overall assessment of the team

The team's scientific output is excellent, with fifteen publications as PI including one Nat Comms, one JBC, one JCS, and 1 in J Invest Dermatol). Attractiveness of the team is excellent. The team successfully integrated networks of excellence (Labex Signalife, the IDEX UCA JEDI & FHU Oncoage) was 'Ligue Nationale Contre le Cancer "labelled team 2014-18, and is part of a three-team INCA-PL Bio grant consortium (2019-23) Members of the team are strongly involved in industrial development and transfer (3 industrial contracts, 1 CIFRE thesis, 1 patent) as well as in public engagement by disseminating knowledge.

Strengths and possibilities linked to the context

As of 31/12/2021, team 5 is composed of five permanent researchers (1 DR, 3 CR INSERM and 1 Assistant engineer) and three PhD students. The team studies stem cell physiology and cell fate in cell renewal and cancer with a focus on the skin and lung. More specifically, they studied the role of the transmembrane protein CD98hc in skin homeostasis during aging and cancer. They found that CD98hc regulates both integrin signalling and amino acid transport. They now study how the mechanobiology of CD98hc interferes with cell metabolism via matrix assembly and cell mechanosensing. They designed unique tools to stretch cells with adequate forces to analyse their involvement in tumour development and found that CD98hc is a factor of poor prognosis in NSCLS lung cancer, identifying it as a therapeutic target. They are currently developing unconventional CD98hc inhibitors to be tested in preclinical models.

The team is largely funded by the PIA Programmes IDEX-UCAJEDI (Booster/Prematuration grants, PhD fellowships from LABEX Signalife), the French National Institute for Cancer Research, Proof of Concept from INSERM transferred, ARC foundation (x3) and Ligue National Contre le Cancer (x2). These funding has allowed the team to allow the team to recruit six people (technicians/engineers/postdocs). The team has established contracts with industry (L'Oréal innovative projects related to the development of nobodies that inhibit CD98hc.

The team published five out of a total of thirteen original articles as last author in excellent journals (1 in Nat Comm, 1 JBC, 1 iJCS, and 1 J Invest Dermatol). And participated through prestigious international collaborations to top-notch publications (Cancer Discovery and Cancer Cell). Members of the team are strongly involved in public engagement by disseminating scientific knowledge to the public and writing scientific outreach articles. Team members were invited to more than twenty conferences worldwide, including two Gordon conferences. The team leader actively participated in scientific policy making through the Thematic Research Institute, ITMO Pathophysiology Metabolism Nutrition as well as the 'Horizon Europe' (2021–2028) programme, in the frame of the national Alliance AVIESAN. Senior members of the team are involved in the project/researcher evaluation at the European (Belgium, Sweden) and national (ARC, CSS) level. A member of the team received a Sanofi international award. Formation by training is very good, with five PhD students for two HDRs.

The lab hosted renowned researchers in the context of international collaborations. Emphasis is placed on research integrity: training in statistics, use of electronic notebooks, publications made available via gold open-access or open access (including HAL), in respect of the FAIR principles for data management.

Weaknesses and risks linked to the context

The average duration of the theses is 4.5 years. One thesis did not result in the publication of an original scientific article.

RECOMMENDATIONS TO THE TEAM

The committee congratulates team 5 for its dynamism. The committee would only recommend continuing to push publication in high-profile journals because the quality and productivity of the team are exceptional. Placing more focus on writing scientific manuscripts rather than reviews are recommended.

Team 6: NORMAL AND PATHOLOGICAL ANGIOGENESIS

Normal and pathological angiogenesis

Name of the supervisor: Mr. Gilles PAGES,

THEMES OF THE TEAM

Team 6 studies the mechanisms of resistance to anti-angiogenic drugs in general and more particularly in the kidney, head and neck, and breast cancer. More recently the team has become interested in paediatric medulloblastomas. The team's preclinical papers analyse the molecular mechanisms of resistance to antiangiogenic drugs in various types of cancers, while its clinical papers assess sensitivity to anti-angiogenic drugs, or evaluate the ability of biological markers to predict cancer response to angiogenic drugs.

CONSIDERATION OF THE RECOMMENDATIONS OF THE PREVIOUS REPORT

The team responded to previous recommendations. It improved publication quality. New partnerships with industry were developed (IPSEN, BMS and AMGEN). The integration of researchers coming from another team was eventually successful. Efforts were made to improve the mechanistic deciphering of cancer resistance to drugs.

WORKFORCE OF THE TEAM

Permanent personnel in active employment	
Professors and associate professors	1
Lecturer and associate lecturer	2
Senior scientist (Directeur de recherche, DR) and associate	1
Scientist (Chargé de recherche, CR) and associate	6
Other scientists (Chercheurs des EPIC et autres organismes, fondations ou entreprises privées)	0
Research supporting personnel (PAR)	1
Subtotal permanent personnel in active employment	11
Non-permanent teacher researchers, researchers and associates	3
Non-permanent research supporting personnel (PAR)	0
Post-docs	1
PhD Students	3
Subtotal non-permanent personnel	7
Total	18

EVALUATION

Overall assessment of the team

The team attractiveness is outstanding (recruitment of 2 permanent researchers and hosting of internationally renowned researchers). The team scientific production is excellent with 61 published papers (half as PI) including some in high-profile journals (e.g. Theranostics, Br J Cancers, Cancer Research). The team is well funded (2 INCa as leader, funding from several charities, Patients' Foundations and big pharmas. Contribution to society is outstanding with numerous industrial contracts and eight patents, some of which are sublicensed to two start-ups that were created by team members.

Strengths and possibilities linked to the context

The team is composed of nine permanent researchers (1DR, 6 CR, 1 MCU PH, 1 MCU). The team is highly attractive: senior and younger researchers were invited speakers at twelve international scientific meetings (UK, China, Italy). Two young researchers earned CNRS and INSERM permanent positions. The team hosted two famous guest researchers from China. Team members were granted awards (Prix de l'Académie de Médecine Albert 1er, Prix Amgen Europe Innovation, Prix ruban Rose Avenir). A postdoc obtained an ERC Marie Curie grant. During the five-year contract 2.2M€ were raised as leader (with 1 ANR, 1 PLBIO INCa, 1 PRTK...). Fifty-eight original papers (28 by the Team leader as PI) were published (+ 18 publications by members who joined the team) in very good (Theranostics, Br J Cancer) to excellent journals in the field (Cancer Res). Eight patents and three licenses have been filed related to strategies for predicting the sensitivity of patients with kidney cancer to tyrosine kinase receptor inhibitors of anti-EGFR, or new biomarkers/targets in renal cancer. Strong efforts to favour open science and scientific integrity are put forward such as FAIR criteria for data storage and accessibility. Co-authorships are internally discussed. High scientific networking via international societies has led to fruitful collaborations (Japan, China, Israel, Germany, Italy, USA). Senior researchers have taken up several key positions in a number of scientific societies and/or institutions (the EUR LIFE – UCA, the 'French Society of Angiogenesis (SFA)' of which the team leader was the former president). One member was elected at the CSS INSERM 2 and at the INSERM scientific council. The team belongs to the national network React4Kids financed by INCa and is a member of the Pôle de Compétitivité Eurobiomed. Two start-ups emerged from the team: Roca Therapeutics, and Kekkan Biologics in a collaboration with Strasbourg University. Both start-ups develop new compounds/tools currently (or soon to be) tested in the clinics. As for translational research, one member was the PI of a clinical trial to test sunitinib Malate in Kidney Cancer.

Weaknesses and risks linked to the context

The team's approach is to go 'from the patient's bed to the bench' and vice versa, with the aim to improve the 'standard of care' of patients, yet the resistance of cancers to targeted drugs in specific patients is not emphasised. Indeed, despite the fact that all the publications deal with the effect of anti-angiogenic drugs in cancers, a common thread of the research strategy followed in the long term is not apparent, especially in terms of mechanistic cellular and molecular mechanisms. Only five thesis students have been trained despite a significant number of HDRs (8).

RECOMMENDATIONS TO THE TEAM

The lack of public engagement should be corrected. This should be relatively easy considering the high societal impact that anti-cancer research has in the public and the fact that some members are involved in clinical research. One of the toughest challenges of the past five years was to succeed in integrating researchers coming from another team whose leader retired. While some difficulties were encountered in this process, it seems that this goal has been now been achieved, thanks to the perspective of a publication in a top journal. However, the team leader should take particular care to consolidate this integration process to avoid potentially damaging cleavages in the long run in a team of this size.

Team 7: Genetic of solid tumours
 Name of the supervisor: Mrs. Florence PEDEUTOUR

THEMES OF THE TEAM

Team 7 'genetics of solid tumours' develops research on the genetics of tumours and more particularly of liposarcomas and renal cancer. More recently the team has also undertaken genetic characterisation on other soft tissue tumours: kidney and brain.

CONSIDERATION OF THE RECOMMENDATIONS OF THE PREVIOUS REPORT

The team has responded to the recommendations of the previous visiting committee by developing international collaborations (USA) but also with teams of the Institute (teams 2, 6 and 11). The development of basic research remains limited.

WORKFORCE OF THE TEAM

Permanent personnel in active employment	
Professors and associate professors	1
Lecturer and associate lecturer	1
Senior scientist (Directeur de recherche, DR) and associate	0
Scientist (Chargé de recherche, CR) and associate	1
Other scientists (Chercheurs des EPIC et autres organismes, fondations ou entreprises privées)	0
Research supporting personnel (PAR)	11
Subtotal permanent personnel in active employment	14
Non-permanent teacher researchers, researchers and associates	1
Non-permanent research supporting personnel (PAR)	3
Post-docs	0
PhD Students	0
Subtotal non-permanent personnel	4
Total	18

EVALUATION

Overall assessment of the team

Team attractiveness is excellent. The team leader is a nationally and internationally recognised clinician and researcher (co-authored WHO classification of bone and soft tissue and paediatric tumours, member of the steering committee INSERM, management committee of Nice Faculty of Medicine, expertise for national and interregional projects). The scientific output of the team is very good. The team's research activity is almost exclusively clinical. They published eleven articles as PI in good level journals (Modern Pathol, Cancers, Acta Derm Venereol, Genes Chromosomes Cancer) and one outstanding (Lancet Oncol). One PhD student and one postdoc were trained. The contribution to society is excellent with two industrial partnerships, a role as COFRAC quality evaluators, and some public action.

Strengths and possibilities linked to the context

The team is composed of three scientists (1PU-PH, 1 MCU-PH and 1 CR) and eleven research support staff members. The team's activity is mainly clinical and focuses on genetic alterations of tumours (Gene Chromosome Cancers, 2021). More fundamental research is focused on sarcomas and more particularly on the alterations of FGF receptor signalling and its relation with MDM2 regulation (Cancers, 2020). The team obtained excellent national funding (PRT-k INCa, 2017-2021, 290 keuros) considering the size and activity of the team. From 2008 to 2017 the team leader also coordinated a national multicenter study (NCT00847691) on sarcoma. The team leader has recognition at the local (member of the management committee of the Faculty of Medicine of Nice and the committee of international affairs of the Faculty of Medicine of Nice), national (member of the steering committee INSERM, 'Ligue nationale contre le cancer' expert) and international (co-author of chapters of the WHO classification of bone and soft tissue tumours and of paediatric tumours) level. The team has participated in several actions for the general public (visit of laboratories within the framework of the 'infosarcome' action, conference and publication of a press article in Nice matin on sarcoma in 2017; conference for the 10th anniversary of the 'infosarcome' association in 2020 and conference for the general public under the aegis of the Lions Club).

Weaknesses and risks linked to the context

The team is mainly composed of clinicians. It has not had the capacity to renew itself or welcome researchers into its ranks. Less than 25% (9 out of 45) of the publications are the result of the team's research. These are published in good journals (Modern Pathol, Cancers (Basel), Acta Derm Venereol., Genes Chromosomes Cancer, Neuropathol Applied Neurobiol (x3)). Only one thesis has been defended and the team has hosted only one postdoc.

RECOMMENDATIONS TO THE TEAM

The activity of the team is clinically oriented and is driven by the reputation of its leader, who will retire during the contract. Particular attention should therefore be paid during the renewal process either to orientate research exclusively towards the clinic or to bring basic research to the level of the clinic by recruiting basic researchers and thesis students in order to carry out in-depth work in the field of cancer.

Team 8: Stress-Response, Regeneration and Longevity
 Name of the supervisor: Mr. Eric RÖTTINGER

THEMES OF THE TEAM

The team works on three major axes. First, the characterisation of the tissular, cellular and molecular mechanisms underlying the whole body regeneration of cnidarians. Second, understanding the cellular, molecular, and genetic basis of adaptation to environmental variations and cnidarians stress response. Third, determining how to assess aging in virtually 'immortal' animals and how cnidarians prevent aging and aging-related diseases.

CONSIDERATION OF THE RECOMMENDATIONS OF THE PREVIOUS REPORT

The previous committee made six recommendations:

1 and 2. The team too should concentrate on publishing soon the ongoing work in the lab in high-impact journals. The team has made an effort to submit their work to more generalist journals including Science, Nature, Elife, PNAS, but have not succeeded for the moment. They have instead published one manuscript in Development with the PI as last author. They have published eleven additional manuscripts as contributing authors in journals such as Developmental Biology and Ecology and Evolution. Two manuscripts are on BioRxiv and one is under revision in Nat Commun with the Team leader as the last author and an additional collaborative manuscript is being prepared for submission to Nature Ecology & Evolution.

3. The team should continue exploring opportunities and participate in outreach activities.

An artist joining the lab for a year, which resulted in a two-week workstation at the MAMAC. The team was also involved in several presentations in local news TV, articles in Art Magazines in Europe, and an Artist Show at the MAMAC to begin September 2022.

4. The team will need to optimise the effort to maintain and develop specific facilities... The team leader will need to manage good internal organisation of the team once that the new members arrive in order to maintain focus and clear priorities.

The team has optimised its efforts for the facilities (semi-automated culture system, in collaboration with a private company, and the facility is now managed by an engineer and a technical 100% dedicated to the task).

The new members that joined the team arrived with some ongoing projects that have progressively been finalised. It indicates that the incoming team members have now refocused their research on the main projects of the team, a process that is still ongoing and will be pursued.

5. The expert committee recommends evaluating, once the group expands, if there is a better way to organise the training so that time is optimised, e.g. by involving some of the senior scientists in co-supervising students/postdocs.

This has been taken into consideration and the senior permanent staff participate in mentoring and co-supervising.

6. The expert committee recommends that the team consider how to extend the research to other regeneration systems ... establish collaborations on related mammalian systems...

This is being done through numerous collaborative efforts, co-supervision of a PhD student working on *Nematostella* (cnidarian) and *Platynereis* (annelid), a collaboration on a mammalian system, as well as an international visitor working on flat worms who will spend five months in the team.

WORKFORCE OF THE TEAM

Permanent personnel in active employment	
Professors and associate professors	1
Lecturer and associate lecturer	2
Senior scientist (Directeur de recherche, DR) and associate	1
Scientist (Chargé de recherche, CR) and associate	0
Other scientists (Chercheurs des EPIC et autres organismes, fondations ou entreprises privées)	0
Research supporting personnel (PAR)	3
Subtotal permanent personnel in active employment	7
Non-permanent teacher researchers, researchers and associates	1
Non-permanent research supporting personnel (PAR)	2
Post-docs	0
PhD Students	4
Subtotal non-permanent personnel	7
Total	14

EVALUATION

Overall assessment of the team

The team has excellent international attractiveness, with an invitation to prestigious international meetings (Woods Hole, EMBO) and implication in international research projects (Tara Pacific). The team has obtained an important national (ANR, INCa; 540 k€) and international funding (Moore Foundation, 130 k€) as leader. The scientific output is good. The PI is the last author in one article during the evaluation period (Development, 2018), and co-corresponding in two (Developmental Biology, 2017a, 2017b). PhD students have been awarded several prizes (including a CNRS innovation award). The team has one nonacademic partnership (CIFRE) to improve testing the environmental impact of cosmetic compounds and is participating in the creation of two start-up companies. The team has an outstanding contribution to society with outreach activity to the general public (continuing education).

Strengths and possibilities linked to the context

The group is composed of seven permanent staff and ten additional temporary team members who have been successful in obtaining their own funding sources (postdoc and PhD grants).

The group has demonstrated: 1. that body structure is required for a regenerative response, 2. two stem cell populations respond to amputation stress and contribute to tissue cross talk, 3. using transcriptomics they identify a MEK/ERK signalling-dependent Gene Regulatory Network controlling regeneration in Nematostella.

Current sources of funding are excellent, having multiple national and international sources of funding as leader including an ANR grants (1 coordinator; 243 k€; 1 partner), an INCa grant, and the Moore Foundation and two grants from the Idex (UCA Jedi, 50k€; and an Art and Science grant (108.6 k€)), a grant from SATT SE (20 k€).

The team leader has excellent international visibility with invitations to meetings in France and internationally (48 total, nine co-organisations) including euro EVO DEVO Meeting (IRE), Woods Hole meeting (USA), EMBO regeneration (ESP).

The team leader participates in the organisation of marine resources locally (Director of the Federative Research Institute – Marine resources; responsible for the Int. laboratory LIA-ROPSE) and local university (Admin. Board of the UCA), and the team collaborates to more global marine research initiatives (TARA Pacific). The team leader has editorial duties (J.I of Dev. Bio, MDPI since 2021); topical issues of Frontiers in Cell & Dev. Biology.

The invertebrate research facility located in a medical school (apparently the only one in France) exposes this experimental paradigm to more human-oriented research groups.

Two start-ups that are planned to be created in 2022, one in the ecotoxicological sector and the other one in the bioactive compound sector. Team members are active members of the MSc MARRES program from the University that offers training for students but also continuing education for nonacademic actors.

Weaknesses and risks linked to the context

Promising work from the lab still has not been accepted for publication. While the PI has published 1 last-author during the evaluation frame (Development, 2018), two as co-corresponding authors (Developmental Biology, 2017a, 2017b), seven manuscripts as contributing author and fifteen reviews and four book chapters of the team, this is low considering the number of people in the team (17 people) and permanent staff (10 people).

RECOMMENDATIONS TO THE TEAM

The team needs to take advantage of the large number of permanent staff to finalise the papers in the revision. The team leader needs to be the last author on the vast majority of manuscripts from his team. In the past few years, new permanent team members were finishing previous projects from their former labs. In the future, a major effort needs to be made to advance projects in a timely manner by having several people work in small groups on projects. This will ensure that manuscripts are published more regularly. Where appropriate senior members could have co-corresponding authorship. There could be fewer efforts on writing reviews and more focus on scientific manuscripts. The team should continue its interesting collaborative projects and outreach programs. The PI should continue his implication in meeting the organisation and thereby build on his already well-established international visibility.

Team 9: Population genomics and complex traits
 Name of the supervisor: Mr. Gianni LITI

THEMES OF THE TEAM

The team develops and deploys population genomics approaches and technologies to dissect the architecture of quantitative traits in yeast.

CONSIDERATION OF THE RECOMMENDATIONS OF THE PREVIOUS REPORT

The previous evaluation was very positive, making some minor recommendations to which the team leader has successfully responded by securing funding to maintain the team's critical mass and successfully applying for a CNRS DR2 position.

WORKFORCE OF THE TEAM

Permanent personnel in active employment	
Professors and associate professors	0
Lecturer and associate lecturer	0
Senior scientist (Directeur de recherche, DR) and associate	1
Scientist (Chargé de recherche, CR) and associate	0
Other scientists (Chercheurs des EPIC et autres organismes, fondations ou entreprises privées)	0
Research supporting personnel (PAR)	1
Subtotal permanent personnel in active employment	2
Non-permanent teacher researchers, researchers and associates	3
Non-permanent research supporting personnel (PAR)	1
Post-docs	2
PhD Students	3
Subtotal non-permanent personnel	9
Total	11

EVALUATION

Overall assessment of the team

An outstanding team, very strong on all fronts. Outstanding research output published in top journals (Nature, Nature Genetics, Nature Commun (x3)). The PI is an EMBO member. Excellent attractiveness, with success in the acquisition of funding as leader (ANR [x2], ATIP avenir), training young researchers (PhDs and Post-docs), reviewing activities (editor-in-chief of Yeast) and interaction with industry (2 industrial contracts with MeioGenix and Cefripa). Team leader obtained a deep-tech grant from UCA to create a start-up.

Strengths and possibilities linked to the context

Composed of six PhD students and eight postdocs, this outstanding team is cross-disciplinary and collaborative. It leads a major international population genomics effort and has secured grants from 'the Université Côte

d'Azur' to create a spin-off (Yeast Boost). The team invests in training young researchers and is engaged with industrial partners (Meiogenix). It has one patent. The Scientific production is outstanding with fourteen first/last author articles in outstanding journals (Nature Commun (x3), Nature, Cell Reports, Nature Genetics...) and nineteen in collaboration, plus thirteen reviews/chapters. Training of eight PhDs (2 PhD students ongoing) and eight postdocs. Twenty-three invited conference talks (2 as the keynote speaker) and seminars, Team leader has organised four meetings (2 EMBO Workshops, is Editor-in-Chief of Yeast and on the editorial board of Current Genetics. Member of the CSS2 INSERM, G. Liti participates in local committees and the European Antimicrobial resistance and iGenoLevure networks. The group has an outstanding capacity to raise funds – : 2.6 M€ (145k€ International (EU-MSCA Career Integration grant, Prix DuPont Young Professor); 537k€ regional (Cancéropôle, bourse region, IDEX,); 1.9M€ national (ANR, ATIP CNRS, ARC, FRM, bourse Ligue); 156k€ Industrial collaborations. A highly international team with, for example postdocs graduated from MIT and the University of Oxford or now leading their own groups in China and Chile. They have hosted a sabbatical from UC Irvine (USA). Editor-in-Chief (of Yeast), Team leader is now DR2 CNRS, is an EMBO member and is a recipient of the Italian Accademia Nazionale genetics prize and the DuPont young professor awards. Contribution to society is remarkable with four divulgation articles published in the period (insb.cnrs.fr). Following a CIFRE thesis and an ANR grant to explore the use of a return-to-growth approach for the improvement of sterile industrial species, Team leader has obtained funding to create a spin-off to exploit this and the results of a nanobodies project funded by an EU Pathfinder grant.

Weaknesses and risks linked to the context

Notwithstanding its strengths, the team is mainly composed of PhD students and postdocs

RECOMMENDATIONS TO THE TEAM

The team is encouraged to explore possibilities of participation in teaching master programs from the Université Côte d'Azur and transposition of results from yeast to humans. The team is encouraged to engage more with the general public and to re-apply for an ERC advanced grant in the near future. Finally, the team raised a concern of lacking permanent scientist to ensure continuity, which should be discussed with the institute to find an appropriate solution.

Team 10: DNA damage response and oncogenesis
 Name of the supervisor: Mr. Dmitry BULAVIN

THEMES OF THE TEAM

The team studies the relationships between the response to DNA damage and oncogenesis. They recently revealed the unexpected involvement of the response to DNA damage in inducing pluripotency features in human cancers, a conceptually novel phenomenon associated with tumour relapse, which opens potential therapeutic interventions. The team has also investigated the function of senescent cells *in vivo*. They developed an **advanced mouse model to trigger the depletion of senescent cells in all tissues**. This study identified novel senescent cell types and revealed that specialised senescent cells are required for specific and essential cellular functions, and their depletion may have a positive and a negative impact on the organism. These data support the notion of a physiological role of senescent cells, which has been previously shown in development, regenerative processes, and aging.

CONSIDERATION OF THE RECOMMENDATIONS OF THE PREVIOUS REPORT

The team satisfactorily addressed the previous HCERES committee recommendations by increasing its involvement in collaborations with other groups at IRCAN.

WORKFORCE OF THE TEAM

Permanent personnel in active employment	
Professors and associate professors	0
Lecturer and associate lecturer	0
Senior scientist (Directeur de recherche, DR) and associate	1
Scientist (Chargé de recherche, CR) and associate	0
Other scientists (Chercheurs des EPIC et autres organismes, fondations ou entreprises privées)	0
Research supporting personnel (PAR)	2
Subtotal permanent personnel in active employment	3
Non-permanent teacher researchers, researchers and associates	0
Non-permanent research supporting personnel (PAR)	1
Post-docs	1
PhD Students	1
Subtotal non-permanent personnel	3
Total	6

EVALUATION

Overall assessment of the team

The team's attractiveness is outstanding. The PI has an excellent national and international scientific reputation, evidenced by ten invitations to international conferences, including FASEB. He was invited as a keynote speaker at the opening of the Aging Center in Shanghai and is a member of the European Network Ulysses scientific council. The team has organised one international conference in Paris. The group is well funded: 1.5 M€ as leader during the last five years, mainly from ANR, FRM, and ARC.

The scientific output of the team is outstanding, with six major papers in top journals signed by the PI as the last author (Cell Metab, Mol Cell and Genes & Dev). The team also contributed as collaborators to four papers in excellent journals (Cell Metab, Cancer Res). The scientific outreach activities are excellent and include the PI being a board member of Life Extension, an NGO dedicated to encouraging scientific and technological development and disseminating and debating scientific information. In addition, team members have released interviews to the media. The team has also filed two patent applications.

Strengths and possibilities linked to the context

The team includes one research director (DR1 INSERM), three engineers, one research technician, 1 PhD student, and one postdoc. The team develops excellent, original, high-impact scientific projects that may result in short-term benefits for human health. A core of four permanent staff constitutes a stable solid workforce.

During the last five years, the team has produced highly original research projects linking DNA damage, cell reprogramming and cancer, and identified a novel type of senescent cells required for specific cell functions. The group is well funded (1.5 M€ during the last five years) through ANR grants and ARC and FRM labels.

The team published three major papers in outstanding journals as first and senior authors (Cell Metab, Mol Cell, Genes & Dev). The first of these papers (2019) has had a strong impact in the field. In total, the team has published six papers with the PI as the last author.

The team leader has an excellent national and international scientific reputation, evidenced by ten invitations to international conferences (FASEB and aging conferences in USA, Europe, Japan, and the team leader has been a keynote speaker at the opening of the Aging Center in Shanghai), in addition to three conferences in France (including at the Academy of Science). The team also acted as a reviewer for numerous journals, including those of the highest standard (Cell, Cancer cell, Nature, Genes & Dev, Nature Cell Biology). The team has organised an international conference in Paris on phosphatase (Europhosphatase 2017: Phosphatases in cell fates and decisions). The team leader has editorial responsibilities in two scientific journals (Cancer Biology and Therapy and Frontiers in Radiation Oncology) and is a member of the scientific council of the European network Ulysses.

The team patented compounds for treating a disease associated with macrophage senescence, opening the door for more involvement in applied research that may lead to creating a start-up.

Weaknesses and risks linked to the context

The team has only trained one PhD student.

RECOMMENDATIONS TO THE TEAM

The committee congratulates the team for its top-quality science and encourages it to maintain a high profile in fundamental research and develop applications for treating human diseases. It may be helpful to increase the presence of PhD students and postdocs over technical support personnel in the team.

Team 11: Tumour-Stroma interactions
 Name of the supervisor: Mr. Cédric GAGGIOLI

THEMES OF THE TEAM

The team investigates the role of fibroblast tumour associated (CAFs) in cancer cell invasiveness by deciphering mechanisms of the establishment of the metastatic niche. More specifically, they analyse how the tumour niche is established, and how extracellular matrix (ECM) composition and topography influence tumour progression. They study the mechanobiological role of CAFs on niche's ECM stiffness and how this affects tumour expansion.

CONSIDERATION OF THE RECOMMENDATIONS OF THE PREVIOUS REPORT

As recommended, the scientific level has been maintained by far over the past five years with fourteen articles, including five major publications in excellent journals (Cancer Research, Cell Metabolism). They participated in nine original research articles, including, Embo Mol Med, JCI, Genes & Dev ... as well as in two invited reviews and they filed two patents. Team's visibility is illustrated by members' participation to fifteen conferences and two symposia on 3D cell cultures for cancer research. The size of the team increased substantially since they recruited two permanent researchers (INSERM and CNRS). That said, they have not yet developed projects with private companies. However, they are currently discussing with a small biotech company about a potential transfer of the use of 3D organoids for cancer research. They followed the suggestion to participate in the governing boards of research institutions and the team leader is now a member of the Canceropole SUD scientific council. No member participated to international teaching. However, they are involved in technological training at the international level via the 3D culture platform.

WORKFORCE OF THE TEAM

Permanent personnel in active employment	
Professors and associate professors	0
Lecturer and associate lecturer	0
Senior scientist (Directeur de recherche, DR) and associate	1
Scientist (Chargé de recherche, CR) and associate	2
Other scientists (Chercheurs des EPIC et autres organismes, fondations ou entreprises privées)	0
Research supporting personnel (PAR)	1
Subtotal permanent personnel in active employment	4
Non-permanent teacher researchers, researchers and associates	1
Non-permanent research supporting personnel (PAR)	0
Post-docs	0
PhD Students	2
Subtotal non-permanent personnel	3
Total	7

EVALUATION

Overall assessment of the team

The scientific production of the team is excellent (Cancer Res (x1), Cell Metab (x1)). Attractiveness is excellent: the team is affiliated with two GDRs (Organoïdes and ChemBio), the LABEX Signalife and FHU Oncoage, the Canceropole SUD regional cluster. The team heads the 3D culture-Hub platform (IBISA labelled). The contribution to society is low and has not been developed by the team during this contract.

Strengths and possibilities linked to the context

Team 11, located at Nice's medical School campus, is led by a DR2 INSERM. It comprises four permanent staff researchers including two recently recruited researchers (CRCN INSERM and CNRS) and one INSERM research engineers. Non-permanent staff includes four PhD students, two postdocs and one engineer. The team is affiliated to two GDRs (Organoïdes and ChemBio). It heads the 3D culture-Hub platform, a multisite IBISA-labelled structure shared with Marseille University (member of the network OrganoRES with Lille and Caen). The lab is involved in the LABEX Signalife and FHU Oncoage and affiliated to the Canceropole SUD regional cluster. Team members gave thirteen invited talks at national and international conferences. Over the five-year period, the team published three original articles as PI among them one in Cancer Research and one in Cell Metabolism. Thus the level of publication is excellent. The team via collaborations participated to the publication of nine original research articles in top journals (such as Embo Mol Med, J.C.I., Genes & Dev). The team published two invited reviews and filed for two patent applications. They raised 2.5 M€ from local and national calls (1 INCa PLBIO as leader, canceropole (x3), and nine from caritative foundations (FRM, ARC, LNCC...).

Weaknesses and risks linked to the context

No interaction with industry has emerged so far. The team indicated that it does not have any communication actions towards the general public.

RECOMMENDATIONS TO THE TEAM

The committee congratulates the team for its achievements. In view of the competition in the field, the team project requires detailed experimental planning to better focus and capitalise on its recent discover of biophysical properties of the niche, including the rigidity of the extracellular matrix. The team is encouraged to increase its implication in national institutions/funding bodies/charities and to better develop interactions with society/economic partners. In addition, maintaining the IBISA label for the platform is an essential goal.

Team 12: Telomere shortening in cancer and aging
 Name of the supervisor: Mr. Miguel GODINHO FERREIRA

THEMES OF THE TEAM

The team is developing a research axis on the cellular and pathological mechanisms related to the control of telomerase expression and telomere size. For this, the team relies on its competences and the development of an original study model using zebra fish.

CONSIDERATION OF THE RECOMMENDATIONS OF THE PREVIOUS REPORT

N/A, the team began their research in 2019.

WORKFORCE OF THE TEAM

Permanent personnel in active employment	
Professors and associate professors	0
Lecturer and associate lecturer	0
Senior scientist (Directeur de recherche, DR) and associate	1
Scientist (Chargé de recherche, CR) and associate	0
Other scientists (Chercheurs des EPIC et autres organismes, fondations ou entreprises privées)	0
Research supporting personnel (PAR)	1
Subtotal permanent personnel in active employment	2
Non-permanent teacher researchers, researchers and associates	2
Non-permanent research supporting personnel (PAR)	2
Post-docs	0
PhD Students	1
Subtotal non-permanent personnel	5
Total	7

EVALUATION

Overall assessment of the team

The PI, recently implanted at the IRCAN in 2019, has excellent international visibility with regular meeting invitations and the co-organisation of two EMBO meetings and an annual telomere meeting. The team's attractiveness is excellent (labelled team FRM, ANR, INCa PLBio, ARC project grants). Scientific output of the team is excellent to outstanding with seven publications as PI during the period of evaluation (Mol Ecology, PNAS, Communications Biology, and Elife) and additional ten manuscripts in collaboration. Scientific outreach of the team is very good: prior to 2019 the PI engaged in several public actions (National Geographic Magazine, Elife webinar, Independent Newspaper – UK).

Strengths and possibilities linked to the context

The team is composed of four members, the PI, two postdocs and one PhD student.

Using zebrafish as a model, the team explores how whole animal or tissue-specific telomere attrition affects aging phenotypes. Their data suggest that telomere shortening in the gut has a major impact on organismal aging.

The team leader has been awarded one prize (Bial Award in Clinical Medicine 2020 (Honorary)). The team has obtained several important sources of funding as leader (labelled team FRM, ANR, INCa PLBio, ARC project grant).

The team leader produced seven publications during the period of evaluation (Mol Ecology, PNAS, Communications Biology, and Elife) and additional ten manuscripts in collaboration. He has international visibility with regular meeting invitations internationally (e.g. ResetAgeing International Conference, Aging International Conference) and within France (12 invitations, 6 selected abstracts), and has co-organised two EMBO meetings and an annual telomere meeting. The current (France) and past (Portugal) postdocs and students were awarded competitive postdoc and PhD fellowships (Ville de Nice post-doc ; FRM postdoc, La Ligue PHD fellowship). The team leader has editorial duties (Editorial boards of Scientific Reports and Life Science Alliance). He participates in the review of numerous international grants (MRC, NWO, NSF, Cancer Research UK), among others.

Weaknesses and risks linked to the context

The team has to spend a significant amount of its time running the zebrafish facility (one day a week per team member).

RECOMMENDATIONS TO THE TEAM

The team should capitalise on its success in obtaining excellent sources of national funding to expand. The PI could continue to build his national network and visibility within France, in addition to his international visibility. The team should contribute more to society in the future through outreach activities in the community.

Team 13: Telomerase function in organ homoeostasis, Regeneration and Cancer

Name of the supervisor: Mrs. Marina SHKRELI

THEMES OF THE TEAM

Understanding epithelial regeneration in the kidney and the role of telomerase in this process.

CONSIDERATION OF THE RECOMMENDATIONS OF THE PREVIOUS REPORT

Previous recommendations were to demonstrate competitiveness as an independent research entity, to expand by recruiting additional postdocs and PhD students, to obtain an HDR, and to consider establishing in vitro studies to complement the work **on mouse models**.

Most of these recommendations have been acted upon. The group recruited three PhD students, the PI obtained her HDR, and the group developed primary culture systems for kidney epithelial cells.

WORKFORCE OF THE TEAM

Permanent personnel in active employment	
Professors and associate professors	0
Lecturer and associate lecturer	0
Senior scientist (Directeur de recherche, DR) and associate	0
Scientist (Chargé de recherche, CR) and associate	1
Other scientists (Chercheurs des EPIC et autres organismes, fondations ou entreprises privées)	0
Research supporting personnel (PAR)	1
Subtotal permanent personnel in active employment	2
Non-permanent teacher researchers, researchers and associates	0
Non-permanent research supporting personnel (PAR)	0
Post-docs	0
PhD Students	2
Subtotal non-permanent personnel	2
Total	4

EVALUATION

Overall assessment of the team

The attractiveness of the team is very good, with several selected talks (including EMBO workshop Developmental Circuits in Aging, 2022) and meeting invitations (GDR Stem cells annual meetings), and involvement in national networks (GDR Stem Cells, SFNDT) and international consortia (Germany, UK/USA). Scientific production is good with two collaborative studies on which the PI is a middle author. Contribution to society is excellent, especially for a small group, with one collaboration established with industry (HISTALIM company), a patent pending, and participation to public outreach programs.

Strengths and possibilities linked to the context

The team is composed of six members (the team leader, one permanent technician, three PhD students, 1 Master student).

The group investigates epithelial regeneration in the kidney and the role of telomerase in this process. Using a model in which kidney regeneration can be triggered through overexpression of an inactive telomerase component, they described the cellular mechanism and some of the molecular requirements for regeneration. The team published no first/last author publication for the evaluation period, and was co-author in two articles in good journals.

Funding sources over the period of evaluation include an ATIP-AVENIR team (end of 2017), 'Ligue Nationale Contre le Cancer' Grant (203 k€ end 2017), and national (30 k€) and regional grants (30 k€) for the lab and for PhD salaries.

The PI has very good national recognition with eight selected talks at national and international meetings since 2016 (selected talk at the EMBO workshop Developmental Circuits in Aging; Heraklion, Greece; May 2022, the annual meetings of the GDR on stem cells in 2016, 2017, and 2019; and the Annual Meeting of the French Society of Nephrology, 2017). The PI has taken on organisational duties at the Unit level including the head of the histology facility and **the mouse facility and participation in the animal welfare steering committee of the IRCAN.** The first two PhD students of the lab are both currently doing postdocs abroad. The PI and team actively participate in science outreach to the general public such as the Nation Science Fair, hosting middle school students. The PI has filed a patent with INSERM.

Weaknesses and risks linked to the context

The team is relatively small and there are no senior members (postdocs, other CRCN) to help mentor students. While larger grants are currently under review, there is not yet a major funding source in the team. Additional manuscripts are under preparation, but not yet published or on BioRxiv.

RECOMMENDATIONS TO THE TEAM

Posting preprints on BioRxiv may help for grant applications. Larger grants (national or international) will allow the team to recruit more senior people, including postdocs. Additional permanent staff allocated to this team could help substantially. If the grant applications are not successful, the committee recommends fusion with an established team.

Team 14: Transcription specificity
Name of the supervisor: Mrs. Simona SACCANI

THEMES OF THE TEAM

The team study transcription specificity and tries to understand the basic mechanisms governing gene regulation in cells. The research theme is clearly linked to the institute's overarching goal, which is aging and cancer.

CONSIDERATION OF THE RECOMMENDATIONS OF THE PREVIOUS REPORT

The two main recommendations from the previous report have been fulfilled successfully:

1. The first recommendation was to publish all ongoing unpublished work, which was realised with two high-impact publications in PLoS Bio. And Nat. Comms., and a collaboration with the Cristofari team (Mol. Cell. 2019).
2. The second recommendation was to secure computational expertise: this was fulfilled through the INSERM recruitment of the principal bioinformatician of the team.

WORKFORCE OF THE TEAM

Permanent personnel in active employment	
Professors and associate professors	0
Lecturer and associate lecturer	0
Senior scientist (Directeur de recherche, DR) and associate	1
Scientist (Chargé de recherche, CR) and associate	1
Other scientists (Chercheurs des EPIC et autres organismes, fondations ou entreprises privées)	0
Research supporting personnel (PAR)	0
Subtotal permanent personnel in active employment	2
Non-permanent teacher researchers, researchers and associates	0
Non-permanent research supporting personnel (PAR)	1
Post-docs	1
PhD Students	1
Subtotal non-permanent personnel	3
Total	5

EVALUATION

Overall assessment of the team

The team has an excellent publication record, with two major contributions in the field of chromatin and transcription in PLoS Bio. And Nat. Commun. As well as a fruitful collaboration with another IRCAN team (Mol. Cell. 2019). The team's attractiveness is excellent, with three ANRs as leader and one as a collaborator, as well as contracts from FRM and LNCC. One team member obtained a CRCN position, and the team hosted two international researchers. Despite its small size, the team had a very good contribution to citizen participatory science activities, including interviews for an ungraduated student project and the Crowdfight Covid-19 programme during the recent pandemic.

Strengths and possibilities linked to the context

The team is composed of one DR, one CR, one engineer (IE), two postdocs and one PhD student. The team was recently appointed a principal bioinformatician with a CR position. The team has set up innovative protocols to analyse nucleosomal organisation and the distribution of transcription factors on the mammalian genome. They developed the 'split epitope' tagging method to identify the target sites of specific combinations of TF subunits. They also developed a ChIP-MNase protocol that improves the mapping of nucleosomes at cis-regulatory elements in mammalian cells. This group has collaborated successfully with another group in the institute (Cristofari group) to study transposon insertions in the genome. The team obtained three ANRs as leader and one as a collaborator for a total of 1 M€, as well as contracts from FRM and LNCC. These contracts covered all research expenses during the past years and secured resources for the coming years. The team has published seven articles, including two excellent articles (PLoS Biol and Nat. Commun) in which the PI of the team is the corresponding author. The team trained three PhD students who have now moved on to pursue international career paths. One researcher obtained a CRCN position. The team organised the 'Chromatin meets south' annual meeting series, 2017–2019 and the 'Nice genomics winter school' 2019.

Weaknesses and risks linked to the context

The small size of the team is limiting scientific production. Two elements represent a barrier to the future expansion of the team: i) the technician is working in the team only 50% of his time; ii) the current laboratory space available.

RECOMMENDATIONS TO THE TEAM

The team raised a concern about the unfulfilled commitment of the institute in terms of lab space and a full-time technician post. The team and the institute are encouraged to work together to come to a desirable resolution.

The team is encouraged to attend major international conferences to gain better international visibility. The team should focus on publishing the ongoing work as soon as possible. The team is also advised to grow in the next five years so that it can be stabilised and more robust to personnel turnovers.

CONDUCT OF THE INTERVIEWS

Date(s)

Start: 10 janvier 2023 à 12 h 45

End : 12 janvier 2023 à 14 h 30

Interview conducted on-site

INTERVIEW SCHEDULE

HCERES Agenda
Unit: IRCAN
January 10–12, 2023
Present Director: Eric GILSON
Future Director: Dmitry BULAVIN

Committee members

Chairman	Robert-Alain TOILLON, Université de Lille
Vice-Chairwoman	Allison BARDIN, Institut Curie
CNU44-03	Marie-Hélène LAFAGE-PROUST, Université Saint-Étienne
CSS2	Charles WHITE, GReD Clermont-Ferrand
CNRS24	Catherine BRENNER, Gustave Roissy, Villejuif
PAR	Niclas SETTERBLAD, Institut de Recherche Saint-Louis, Paris Diderot

Other experts

Patrick CAI, University of Manchester
 Matthieu GERARD, i2bc Paris-Saclay
 Miria RICCHETTI, Institut Pasteur

Observers

CSS2: Pierre HAINAUT, IAB Grenoble

HCERES delegate: Francesca PALLADINO

Please note that Eirini TROMPOUKI will not be presenting due to a recent arrival not compatible with the HCERES report

Day one: Tuesday, Jan 10

11:45 a.m.-12:40 p.m. Closed-door meeting of committee with lunch boxes
salle du conseil de la faculté de médecine

12:45 p.m.-1 p.m. Presentation of the committee to the Unit
Amphi 5

1 p.m.-1:40 p.m. Presentation by the director, open to all the Unit
Amphi 5
(20 minutes presentation, 20 minutes questions)

Coffee/refreshments available throughout

1:40 p.m.-2:30 p.m. Team 1 Eric Gilson Telomere, Senescence and Cancer
(15 min presentation, 15 min questions; 5 min PI alone with the committee; 15 min closed-door debriefing of the committee)

2:30 p.m.-3:20 p.m. Team 2 Gaël CRISTOFARI Retrotransposons and Genome plasticity

3:20 p.m.-4:10 p.m. Team 3 Véronique PAQUIS-FLUCKLINGER Mitochondria, diseases and aging

4:10 p.m.-5 p.m. Team 4 Paul HOFMAN Circulating tumour cells and lung tumour progression

5 p.m.-5:50 p.m. Team 5 Chloé FERL Epithelial homoeostasis and tumorigenesis

5:50 p.m.-7 p.m. Committee debrief of the day: experts discuss assessments for each team

End of all sessions

Back to the hotel (or check-in): Hôtel du Pin

7:30 p.m. Dinner close to the hotel

Day 2: Wednesday, Jan. 11

8:30 a.m.-9 a.m. Arrival of committee/coffee

9 a.m.-9:50 a.m. Team 6 Gilles PAGES Normal and pathological angiogenesis

9:50 a.m.-10:40 a.m. Team 7 Florence Pedoutour Genetic of solid tumours

10:40 a.m.-11:30 a.m. Team 8 Eric ROTTINGER Stress-Response, Regeneration and Longevity

11:30 a.m.-12:20 p.m. Team 9 Gianni LITI Population genomics and complex traits

Boxed lunch 12:20 p.m.-1:30 p.m.

1:30 p.m.-2:20 p.m. Team 10 Dmitry BULAVIN DNA damage response and oncogenesis

2:20 p.m.-3:10 p.m. Team 11 Cédric GAGGIOLI Tumour-Stroma interactions

3:10 p.m.-4 p.m. Team 12 Miguel GODINHO-FERREIRA Telomere shortening in cancer and aging/zebrafish

4 p.m.-4:20 p.m. Coffee break

4:20 p.m.-5:10 p.m. Team 13 Marina SHKRELI Telomerase function in organ homoeostasis, Regeneration and Cancer

5:10 p.m.-6 p.m. Team 14 Simona SACCANI Transcription specificity

6 p.m.-7:30 p.m. Committee debrief of the day

End of all sessions; back to hotel

7:30 p.m. Dinner close to the hotel (please make a reservation)

Day 3: Thursday, Jan 12

8:30 a.m.-9 a.m.	arrival of committee/coffee
9 a.m.-10 a.m.	Committee splits in three groups for discussion with: 1/ Students 2/ Scientists (researchers, postdocs, others) 3/ Managing staff, technical staff <i>3 separate rooms, 30 min</i> <i>Followed by 30 min debriefing of the committee</i>
10 a.m.-11 a.m.	Meeting with the managing bodies: 30 min for the managing bodies, 30 min questions from the committee Dominique NOBILE, Délégué Régionale INSERM Yvan de LAUNOIT, CNRS-INSB (<i>member of SAB</i>) Noël DIMARCQ, VP Recherche Alain EYCHENE, Institut Thématique Cancer, INSERM
11 a.m.-11:30 a.m.	Closed-door meeting of the committee (in presence of the HCERES scientific adviser)
11:30 a.m.-12:15 p.m.	Meeting with the director+ co-deputy and future DU
12:15 p.m.-2:15 p.m.	Final debriefing with box lunch

End of the session: 2:30 p.m., departure of the committee


PARTICULAR POINT TO BE MENTIONNED

The current report is based on the informations provided in the written document gave by the unit and interviews done on-site by the committee.

GENERAL OBSERVATIONS OF THE SUPERVISORS

**Direction de la
Recherche, de la
Valorisation et de
l'Innovation**

Mme Johanna ZERMATI
Directrice


 drvi-recherche@univ-
cotedazur.fr


Nice, le 5 septembre 2023

à l'attention du Haut Conseil à
l'Evaluation de la Recherche
et de l'Enseignement Supérieur

Affaire suivie par :

Mme Delphine ISCAYE
Gestionnaire

 04 89 15 16 44

 delphine.iscaye@univ-
cotedazur.fr

Objet : Observations de portée générale

Unité : DER-PUR230023496 - IRCAN - Institute for research on cancer and ageing of Nice.

Au nom de tous les membres de l'IRCAN, je remercie le comité Hcéres pour son évaluation dans les observations de portée générale.




Signature

Tampon

Nice, le 6 septembre 2023



**Direction de la
Recherche, de la
Valorisation et de
l'Innovation**

Mme Johanna ZERMATI
Directrice

 drvi-recherche@univ-
cotedazur.fr

à l'attention du Haut Conseil à
l'Evaluation de la Recherche
et de l'Enseignement Supérieur

Affaire suivie par :
Mme Delphine ISCAYE
Gestionnaire

 04 89 15 16 44
 delphine.iscaye@univ-
cotedazur.fr

Objet : Observations de portée générale

Veuillez trouver ci-après les observations de portée générale d'Université Côte d'Azur concernant l'unité **DER-PUR230023496 - IRCAN - Institute for research on cancer and ageing of Nice**.

Université Côte d'Azur tient à remercier l'ensemble du comité HCERES pour le travail, conséquent et de qualité, d'analyse et d'évaluation des activités de l'unité IRCAN. Les appréciations et recommandations du comité sur les différents domaines d'évaluation sont très utiles pour positionner les activités de l'unité et apporter des éléments sur lesquels s'appuyer pour consolider la vision prospective de l'unité.

L'établissement n'a pas d'observations de portée générale à formuler.



Pour le Président d'Université Côte d'Azur
et par délégation,
Le Vice-Président Recherche et Innovation


Ndel DIMARCO

Nice, le 27 janvier 2023



à l'attention du Haut Conseil à
l'Evaluation de la Recherche
et de l'Enseignement Supérieur

**Direction de la
Recherche, de la
Valorisation et de
l'Innovation**

Mme Johanna ZERMATI
Directrice

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Affaire suivie par :
Mme Delphine ISCAYE
Gestionnaire

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 delphine.iscaye@univ-
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Objet : Observations de portée générale

L'INSERM n'a aucun commentaire à formuler concernant les rapports
d'évaluation des unités de recherche dont il est tutelle :

- **U 1065 / UMR 1065** C3M
- **U 1091 / UMR 7277** IBV
- **U 1081 / UMR 7284** IRCAN

Signature

Tampon

Dominique Nobile
Délégué Régional Inserm
Provence-Alpes-Côte d'Azur
et Corse



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