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LBCMCP - Laboratoire de biologie cellulaire et moléculaire du contrôle de la prolifération

Rapport Hcéres

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HCERES

High Council for the Evaluation of Research
and Higher Education

Research units

HCERES report on research unit:

Laboratory of Cellular and Molecular biology of
Control of Proliferation

LBCMCP

Under the supervision of
the following institutions
and research bodies:

Université Toulouse 3 - Paul Sabatier - UPS

Centre National de la Recherche Scientifique - CNRS

HCERES

High Council for the Evaluation of Research
and Higher Education

Research units

In the name of HCERES,¹

Didier HOUSSIN, president

In the name of the experts committee,²

Claude SARDET, chairman of the committee

Under the decree N°2014-1365 dated 14 november 2014.

¹ The president of HCERES "countersigns the evaluation reports set up by the experts committees and signed by their chairman." (Article 8, paragraph 5)

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

Evaluation report

This report is the result of the evaluation by the experts committee, the composition of which is specified below. The assessments contained herein are the expression of an independent and collegial deliberation of the committee.

Unit name:	Laboratory of Cellular and Molecular Biology of Control of Proliferation
Unit acronym:	LBCMCP
Label requested:	UMR
Present no.:	UMR 5088
Name of Director (2014-2015):	Mr Didier TROUCHE
Name of Project Leader (2016-2020):	Mr Didier TROUCHE

Expert committee members

Chair:	Mr Claude SARDET, Institute of Molecular Genetics of Montpellier
Experts:	Mr Cayetano GONZALEZ, Institute of Research in Biomedicine, Barcelona, Spain
	Mr Thierry GRANGE, Institut Jacques Monod, Paris (representative of the CoNRS)
	Mr Helder MAIATO, University of Porto, Portugal
	Ms Johana SCHLUBA, University of Bourgogne, Dijon (representative of the CNU)
	Mr Nic TAPON, London Research Institute, London, United Kingdom
	Mr Pascal THEROND, University of Sophia Antipolis, Nice

Scientific delegate representing the HCERES:

Mr Pierre COUBLE

Representatives of the unit's supervising institutions and bodies:

Mr Laurent KODJABACHIAN, representative of CNRS
Mr Alexis VALENTIN, representative of University of Toulouse 3
Mr Philippe VALET (representative of Doctoral School ED n° 151)

1 • Introduction

History and geographical location of the unit

Since its creation in 1999, the LBCMCP research unit is located in the 4R3 building on the site of the University of Toulouse Paul Sabatier. This research entity was founded in 1999 by Pr. Bernard DUCOMMUN, with the support of the CNRS and of the University of Toulouse 3. During ten years, this lab focused on the various molecular and cellular processes that control cell cycle progression, division, survival and differentiation of eukaryotic cells. In 2010, several teams of this first version of the LBCMCP left the campus, including Mr Bernard DUCOMMUN's team. This also coincided with a marked increase in the space allocated to the LBCMCP due to the departure of a neighbouring unit from the 4R3 building; the current allocated space is 1100 m² spreaded on four floors of this building. Staff turnover and increase in lab space led to the creation in 2011 of a 2.0 reorganized version of the LBCMCP under the directorship of Mr Didier TROUCHE. The 2010-2012 evolution of this second LBCMCP was rapid and marked by the creation of 4 new junior teams supported by competitive starting grants (ATIP/AVENIR program, ANR jeune chercheur, FRM "amorçage", Installation grant from the region Midi-Pyrénées), and by the arrival of additional researchers with permanent positions. To the point that LBCMCP now tends toward the critical mass required to be considered as an institute. Hence, the current (2014) and proposed (2016-2020) LBCMCP projects, both headed by Mr Didier TROUCHE, involve around 60 people (30 permanent staff), reorganized in 7 teams sharing a technical platform (imaging) and supported by an administrative team and support services shared with a nearby Institute (Dev Biol Institute/CNRS).

The current research field of this 2.0 version of LBCMCP is broader than the previous one. The 7 teams develop projects exploring cell dynamics, morphogenesis and chromatin-dependent controls of cell fates, using various model organisms (yeast, drosophila and mouse).

In brief, the recent history of the 7 teams that compose LBCMCP can be summarized as follows:

Team 1, headed by Mr Didier TROUCHE, entitled Chromatin and cell proliferation was already existing in LBCMCP before 2011.

Team 2, co-headed by Ms Sylvie TOURNIER and Mr Yannick GACHET, entitled Spatio-temporal control of cell division was already existing in LBCMCP before 2011.

Team 3, headed by Mr Malek DJABALI entitled Role of polycomb/MLL-group genes in transcriptional control of target genes was pre-existing in Marseille (CNRS) and joined the LBCMCP in 2010.

Team 4, headed by Ms Gaëlle LEGUBE (CR1 CNRS) entitled Chromatin and DNA repair, is a spin-off of team1 (the team leader, is a former researcher of Team 1), created in 2010 with the support of a starting grant 'jeune chercheur' from the French governmental agency ANR.

Team 5, headed by Ms Magali SUZANNE entitled 'Regulation and role of apoptosis during development' was created in 2011, a research associate coming from The Rockefeller University (New York, USA), with the support of a starting grant 'jeune chercheur' from the French governmental agency ANR.

Team 6, headed by Ms Luisa DI STEFANO entitled Histone demethylases in development and in cancer was created in 2012 following an international call launched by the LBCMCP for new teams working on chromosome and chromatin dynamics. The new team leader was a post-doctoral fellow in Boston (USA) who obtained a CR1 INSERM position as she joined the LBCMCP. The installation of this new team was supported by an installation grant (program 'Amorçage, jeunes équipes') from the French 'Fondation pour la Recherche Médicale' (FRM), by a 'chaire d'excellence' from the ANR and by an ATIP/AVENIR starting grant from CNRS.

Team7, headed by Mr Xiaobo WANG entitled Cell Migration and Cancer was created in 2012. The team leader was a senior postdoctoral fellow from Baltimore (USA) who obtained a CNRS position and an ATIP/AVENIR starting grant from CNRS to set up his lab at the LBCMCP.

Noteworthy, yet another critical evolution of the unit is foreseen in 2018 since the LBCMCP is involved and acts as a driver in the creation of a future research centre termed CBI (Centre de Biologie Intégrative) that should regroup around 400 people in a new building of the university campus which opening is expected late 2018. This initiative should regroup LBCMCP and 4 other neighbouring CNRS-University units sharing overlapping interests (LMGM/Laboratoire de Microbiologie et de Génétique Microbienne, LBME/Laboratoire de Biologie Moléculaire Eucaryote, CRCA/Centre de Recherche sur la Cognition Animale, CBD/Centre de Biologie du Développement). At this stage the deadlines, milestones and teams/units reorganizations that will result from this merging remain unclear. However, this ambitious project will place LBCMCP at the center of an exciting initiative to federate the biomedical

and biological research community of the University of Toulouse 3 that, in fine, should increase its international visibility.

Management team

The proposed management team of the new LBCMCP (2016-2020) consists of the current director (Mr Didier TROUCHE) and of a new deputy director (Ms Sylvie TOURNIER), i.e. the two most experienced team leaders of the current LBCMCP. This management team is seen as an asset for structuring LBCMCP and to prepare its integration in the future CBI.

The director (Mr Didier TROUCHE) is a man of energy and drive, and a productive and imaginative scientist who has excellent scientific records. He has demonstrated a good expertise in lab management. He is also currently involved in the evaluation of scientific programs for caritative agencies and is driver in the project of creation of the CBI (Centre de Biologie Intégrative), i.e. an asset for LBCMCP. Decisions and orientations on scientific, financial and organizational matters concerning LBCMCP are taken with the help of a team leaders assembly and of a mandatory laboratory internal council that meet on a regular basis.

HCERES nomenclature

SVE1_LS2, SVE1_LS3

Unit workforce

Unit workforce	Number as at 30/06/2014	Number as at 01/01/2016
N1: Permanent professors and similar positions	3	3
N2: Permanent researchers from Institutions and similar positions	16	16
N3: Other permanent staff (without research duties)	13	12
N4: Other professors (Emeritus Professor, on-contract Professor, etc.)		
N5: Other researchers (Emeritus Research Director, Postdoctoral students, visitors, etc.)		
N6: Other contractual staff (without research duties)	7	
TOTAL N1 to N6	39	31

Unit workforce	Number as at 30/06/2014	Number as at 01/01/2016
Doctoral students	13	
Theses defended	6	
Postdoctoral students having spent at least 12 months in the unit	6	
Number of Research Supervisor Qualifications (HDR) taken	7	
Qualified research supervisors (with an HDR) or similar positions	15	15

2 • Overall assessment of the unit

Global assessment of the unit

LBCMCP develops projects exploring cell dynamics, morphogenesis and chromatin-dependent controls of cell fates, using various model organisms (yeast, drosophila and mouse). The research unit groups around 60 scientists, students, technical and administrative staff in 7 research teams. The director of the unit is a man of energy and drive who has been very successful since 2010 in structuring the new LBCMCP while maintaining an excellent scientific activity. It is noteworthy that 4 out of the 7 LBCMCP teams that participate to the new project have been created very recently (2011 and 2012) by young high-profile French (2) and foreign (2) team leaders who all obtained competitive starting grants (ATIP/AVENIR, ANR/JC, FRM/Amorçage, Region Midi-Pyrénées Marie Curie Reintegration Grant). Of notice, 2 out of the 4 new teams already secured a second wave of French funding (post-installation grant) and are pre-selected to compete for European Grants (ERC). With active management, commitment to compete and the application of appropriate resources and mentoring, all these new teams have the potential to become internationally competitive.

LBCMCP teams conduct original and highly competitive research programs that span curiosity-driven investigations on cell dynamics and chromatin-dependent controls of cell fates, to health-oriented research involving cancer biology. Although significant differences exist among the different teams, overall, the training records and publication output of the unit are excellent, with several publications accepted in the most prestigious international journals, especially in 2014. All projects have been financed by grants from various French agencies. The multidisciplinary profile of the research entity can be a scientific asset that has to be promoted to attract scientists from other disciplines and additional funding dedicated to interfaces. Although the science is excellent, the international visibility of LBCMCP does not necessarily match the excellent quality of the work. This could easily be improved by appropriate and collectively organized communication. This should also provide the opportunity to attract more self-funded post-doctoral fellows.

This rapid evolution of LBCMCP is far from being fully achieved as the unit is involved in the creation of a future research center termed CBI (Centre de Biologie Intégrative) that should regroup 5 units and around 400 people in a new building (2018) of the university campus. The review group strongly encourages this mid/long term scenario, considering it is an opportunity for mid-size units like LBCMCP to reach the critical mass of people required to become a competitive and operative multidisciplinary research center with common facilities, fruitful scientific exchanges, international visibility and capacity to attract new high profile scientists. Meanwhile, it is essential to set aside funds for the proper maintenance of the current premises, since the poor state of the building is alarming and is posing a real health and safety risk that cannot wait 2018 and the CBI.

Strengths and opportunities in relation to the context

Strongly supported by local authorities.

The unit is very attractive for young high-profile biologists, as indicated by the recent arrival of new group leaders (French and foreigners) who all obtained very competitive installation grants and permanent positions.

Most teams, including the most recent ones, secured outside funding.

Most team members have consistently delivered high quality results in their field and published as senior author in the best journals, including in Nature, Nature Com, Nature Struct & Mol Biol, Nature Protoc, J Cell Biol, PLoS Genet and EMBO J.

Most projects developed in the unit are strengthened by the extensive use of model organisms and/or by multidisciplinary approaches. This is an asset that has to be promoted by authorities.

Excellent governance. The director of the unit has been very successful in structuring the new LBCMCP while maintaining an excellent scientific activity.

The overall number of PhD and Master students that have been trained in the unit is excellent by French standards. All PhD students were/are fully supported by fellowships.

The mid-term (2018) objective to be part of a new large research center (CBI) on the same campus open multiple opportunities for better support services, collaborations and exciting developments of multidisciplinary approaches.

Weaknesses and threats related to the context

Although the science is excellent, the invitations of some LBCMCP members to international conferences and participations to international networks do not necessarily match the good quality of their work. This could easily be improved by appropriate and collectively organized communication.

Too few self-funded post-doctoral fellows.

Uncertainties about Institutional funding and of large external funding that allow recruitments of postdoctoral fellows. At this stage, too few international funding (however, two teams have been pre-selected for the ongoing ERC competition).

The funding of young groups may/will decrease abruptly after the end of their installation grants. This could be a serious threat for these teams and for the unit as a whole. To secure funding during this transition period, young teams have to engage as soon as possible in collaborations (network, participant on grants) headed by high-profile laboratories.

The external teaching commitment (undergraduate level) of unit members is modest and could be improved (i.e. at the interface between biology and biophysics/bioinformatics).

Some equipments (imaging/confocal, new generation of live imaging equipments) are overbooked. This could become a problem for young teams that entirely rely on these equipments.

Uncertainties about the expertise in quantitative or computational biology, bioinformatics and system assistance, modeling. The panel feels there is a need to secure permanent positions in these fields.

Recommendations

Newly formed teams will probably need some additional assistance (management, grant writing).

Some thought should be given to the limited personnel resources available and to the effort which will be required to advance each of the numerous individual projects in a competitive manner.

Promote and communicate about the multidisciplinary profile of the unit. This could become a scientific asset for the unit and represent a source of funding and of interactions with other departments of the University. Ask for a "chaire d'attractivité Idex" at the interface of biology and physics, that could later result in University positions. Be promoter in organizing a bio-physics training and postgraduate program at University of Toulouse.

To improve the visibility of LBCMCP, its members are encouraged to attend more international meetings and to write reviews in very high impact journals to place the Institute at the forefront of international science.

Invest more in last generation imaging equipments.

Invest urgently, in modeling and bioinformatics and work at securing positions in these fields

Pursue the objective to regroup with other neighbouring units on one building to create CBI. The proposed project appears to be adequate in order to create an internationally recognized Research Center in Toulouse University.

Waiting for the CBI (2018), immediately set aside funds and /or seek help from authorities for the proper maintenance of the current premises. It was felt that, as well as posing a real health and safety risk, the poor state of repair impacts on the work of the laboratory and might rapidly reduce its appeal.