CIIL
Centre d'Infection & d'Immunité de Lille

NEWSLETTER

#9 | Janvier 2023

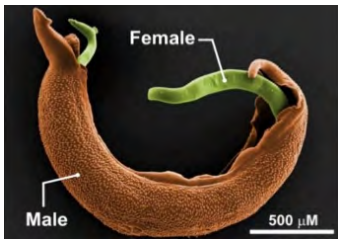
The past year was marked by the energy crisis as well as the difficulties linked to the changes in the management of the IBL, now under the direction of the CIIL. The strong support of the Institute of the Biological Sciences of the CNRS (INSB) should however help us to improve the management of this building. This year also begins with the move of the parasitology teams from the Emile Roux building to the IBL, and we welcome them. I take the opportunity of this message to thank the technical service for their precious contribution in refurbishing the rooms dedicated to these teams. In this issue, we continue the presentation of the researchers who actively contribute to the CIIL project. This time we present Mathieu Gissot, Lorena Redondo-Morata, Aurélie Tasiemski and Jérôme Vicogne. We also decided to highlight the engineers who actively contribute to the scientific visibility of our Center. We start with Nathalie Ollivier and Elisabeth Werkmeister. I also take the opportunity of the newsletter to wish you all an excellent year for 2023.

Jean Dubuisson

Profiles of CIIL scientists and engineers

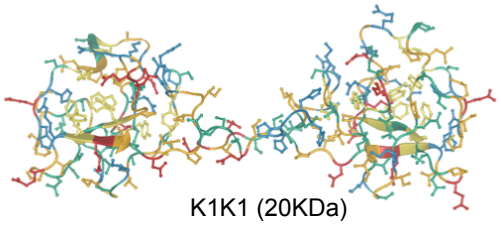
Jérôme VICOGNE
CNRS Senior Research

I explored the world of parasitology very early on, somewhat by chance, by joining the team of Dr. Colette Dissous during an internship in the second year of my B.Sc. (the "DEUG", for the older ones...). This team was part of the Lille Center for Immunity and Parasitic Biology (CIBP), directed by Pr André and Monique Capron. I then discovered the mysteries of the host-parasite relationship and, in particular, the very singular life cycle of Schistosoma, a blood dwelling worm responsible for Bilharzia, the second parasitic endemic after malaria. From then on, I felt in love with this organism with a thousand aspects. In 2000, I then started a PhD thesis with the aim of understanding the role of insulin-dependent signaling in the development and reproduction of the parasite. During this study, I discovered a new family of Tyrosine Kinase Receptors (RTK), the Venus Kinase Receptors (VKR) which play a central role in the reproduction of the parasite, but also in many other invertebrates, pathogenic or not, or of agro-economic interests.



As part of my post-doctorate training and to deepen my knowledge of insulin receptor signaling in humans, I worked for 5 years in the laboratory of Pr. Jeffrey Pessin at the University of Stony Brook in New York. In this very cosmopolitan and interdisciplinary environment, I then specialized in the biophysics of the fusion of cell membranes with vesicles containing glucose transporters (GLUT2/4). I participated in the characterization of the molecular processes allowing the recognition of SNAREs, fusogenic addressing proteins, and the assembly of lipids between transport vesicles and the plasma membrane of adipocytes. By developing a system using synthetic vesicles, we have demonstrated a direct mechanism of electrostatic interaction between the second-messenger lipids from RTK signaling (PIP2/3) and the SNARE proteins which initiate the fusion process, following the activation of the insulin receptor.

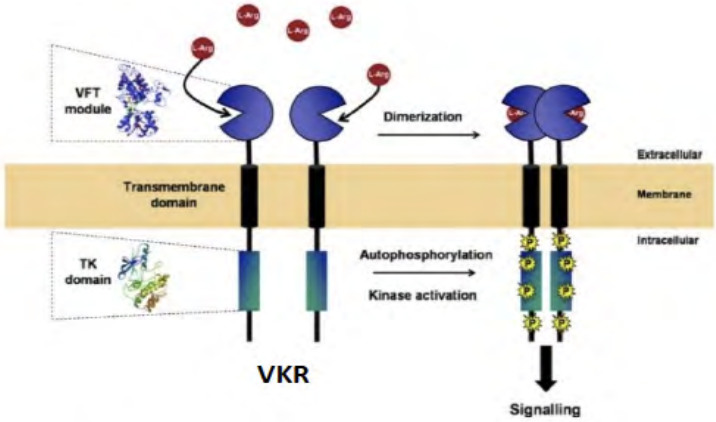
In 2008, with the support of Véronique Fafeur, I then joined Oleg Melnyk's chemistry team (UMR8161 CNRS) to identify agonists and antagonists of the MET tyrosine kinase receptor. This receptor is essential for tissue regeneration in vertebrates but is also strongly implicated in cancer progression. Thanks to the innovative combined biological chemistry approaches developed by the team, we have identified the minimal HGF/SF domain allowing its binding to MET, the K1 domain. In collaboration with the team of Ermanno Gherardi (University of Pavia, Italy), the co-discoverer of HGF/SF, we have developed a K1 domain dimer (K1K1) which behaves as a potent MET agonist and exhibits very interesting therapeutic properties in regenerative medicine. This molecule has been patented, licensed to Boehringer Ingelheim and

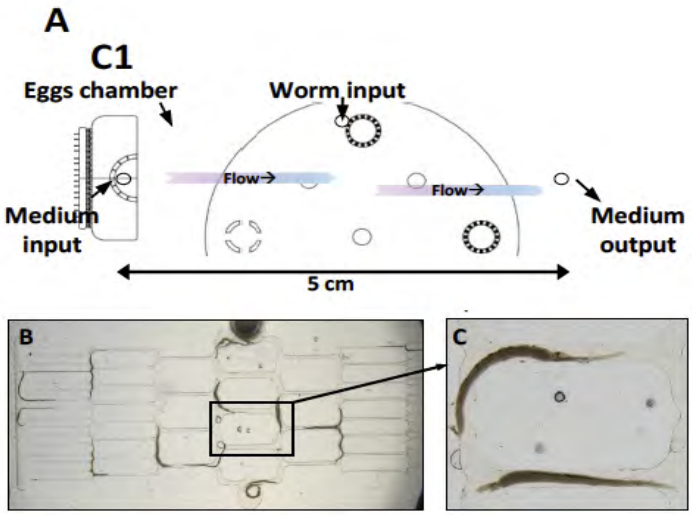


K1K1 (20KDa)

is currently the subject of an international industrial collaboration project that I coordinate.

In 2017, I wanted to return to the “schistosome world” and re-explore VKR-dependent signaling with the new tools provided by the chemical-biology developed within the team. We then built a new molluscarium at the IBL and joined the CIIL by creating the CBF team: Chemical Biology of Flatworms. With Oleg Melnyk, we are once again using the power of the chemical-biology for promoting research on the schistosome and the host-parasite relationship, and in particular, for exploring VKR-dependent signaling. More recently, I wanted to add a micro-technological dimension to our work. Thus, in collaboration with the University of Tokyo (Pr. Yasuyuki Sakai) and Dr. Vincent SENEZ (Team Mucine, UMR9020 CNRS, OncoLille) we have developed different microfluidic systems and organs on chip (OOC) in order to identify more efficiently new anti-parasitic drugs. These devices, which mimic the parasite’s natural hepatic and blood micro environment, are also key access points for obtaining transgenic parasites, an essential step in combating this parasite whose progression towards Europe continues inexorably. I remain convinced that interdisciplinarity and research at the interface are among the best strategies to address such complex biological questions but also for one’s own scientific development.





Aurélie TASIEMSKI

Professor at
University of Lille

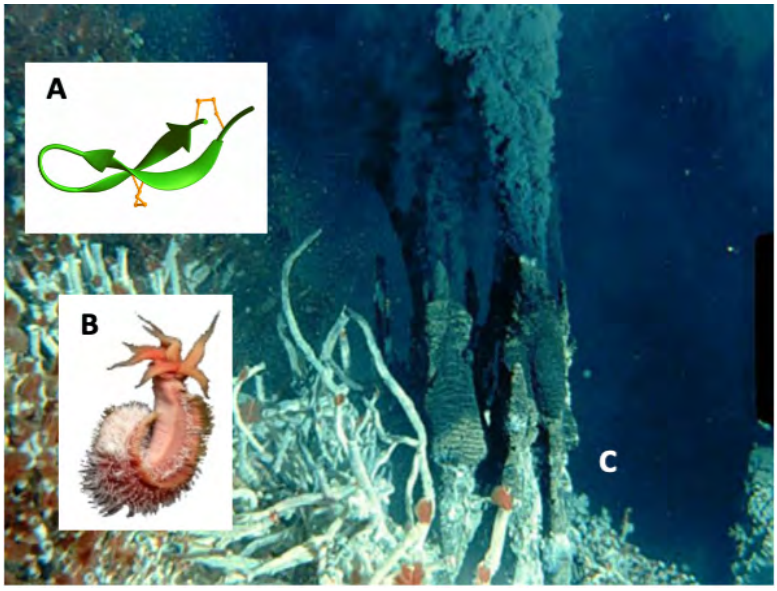
Aurélie is a teacher-researcher at the University of Lille. She mainly teaches animal biology, comparative biology and to a lesser extent immunology at the Faculty of Science and Technology (FST) of Lille. Since 2020, she has been carrying out her research at CIIL in the CGIM team (led by Priscille Brodin) where she is responsible for the Antimicrobial Peptides (PAMs) axis. Aurélie defended her PhD in sciences at the University of Lille in 2001. After a post-doctoral internship in the United States in Charles Bevins’ team at the Lerner Research Institute (Cleveland Clinic), she was appointed Associate Professor (MCF) at the University of Lille in 2003 and defended her “Habilitation à Diriger les Recherches” (HDR) in natural sciences in 2008. She led a research team from 2008 to 2019. She is also involved in collective responsibilities (elected vice-president of the National Council of University (CNU, 68) and elected member of the scientific council of the university). Aurélie has very recently been promoted to Professor of the University of Lille.

She has always been fascinated by the understanding of how animals (including humans) and microbes interact and evolve together, whether they are friends or foes, as well as by the incredible ability of some animals to adapt to extreme and changing habitats thanks to their bacterial symbionts.

Her research work is specialized in comparative immunity with a particular focus on antibiotics (AMPs), especially those produced by worms. During her thesis and following her recruitment as MCF, she studied the involvement of immune effectors (including a new family of AMPs, named Macins) in the protection/repair of the injured central nerve chain and in the symbiostasis of a worm, the medicinal leech. Unlike mammals, the central nervous system of this annelid regenerates even functionally after injury. Together with David Schikorski, the first thesis student she supervised, they demonstrated the neuronal production of an AMP (neuromacin) with antibacterial and neurotrophic functions. This AMP has been patented by the CNRS.

Her meeting at a conference with Françoise Gaill (DR, CNRS), an eminent biologist in deep ocean ecosystems, was decisive in the orientation of her subsequent research. Françoise Gaill was among the first researchers to witness the existence, against all odds, of oases of life in the deep sea, in the absence of light and oxygen. Following this meeting, Aurélie was invited to take part in her first deep-sea oceanographic mission and to dive in a submersible (Nautile) to look for AMPs in extremophilic marine worms that massively colonize the hottest part of the hydrothermal chimneys at a depth of 3500 m at the

Eastern Pacific Ridge: the emblematic Pompeii worms. This research having been successful, alvinellacin, the first antibiotic (AMP) characterized in an extremophilic organism, was patented by the CNRS and the University of Lille. This discovery, the participation in the setting up of multiple other oceanographic and polar missions that followed and the collaborations that ensued notably with Didier Jollivet (DR, CNRS) and Stéphane Hou dez (DR, CNRS), shaped her vision of research and in particular the importance of considering the environmental and evolutionary context in any biological interaction, whether infectious or symbiotic, at all scales of life. Her work, together with that of her colleagues and the students she supervised, has enabled the characterization and identification of seven new AMPs and demonstrated their functions as agents for eliminating pathogenic bacteria or maintaining symbionts. It also demonstrated that immunity (including AMPs) is a sensitive marker of animal adaptation to extreme and changing environments (highly polluted coastal, polar, abyssal, but also tumoral...) and that it plays an important role in the establishment of vital detoxifying symbioses to face hostile habitats. Because the AMPs derived from extremophilic worms constitute promising candidates for the development of new antibiotics, Aurélie together with Céline Wichlacz, Arnaud Machelart, Teddy Grandjean, Muriel Pichavant and Oleg Melnyk, is studying at the CIIL their



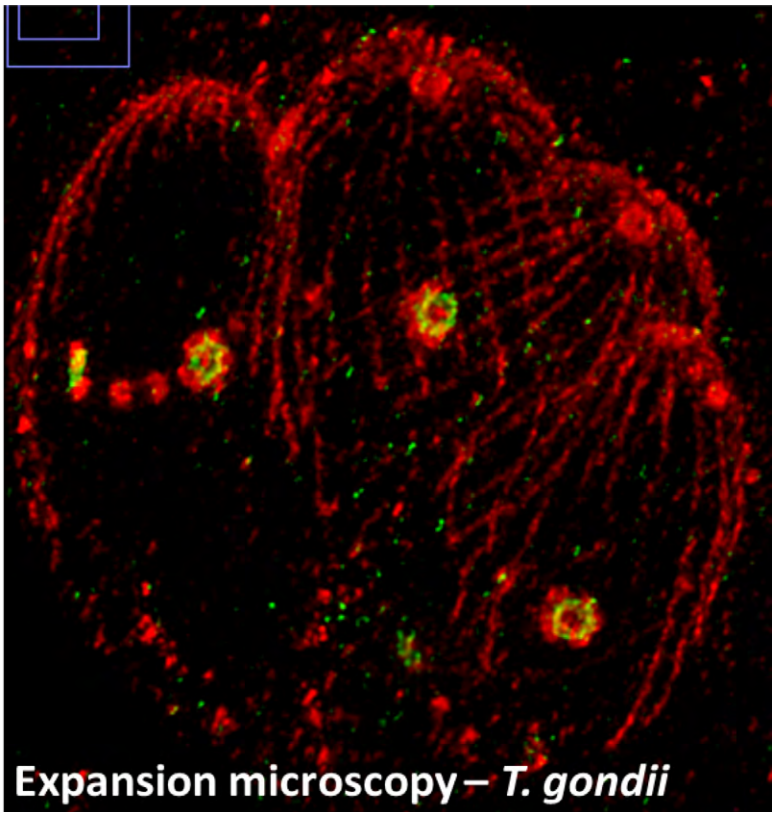
Représentation de la structure 3D de l'alvinellacine (A), isolée du ver de Pompéi, A. pompejana (B), l'animal extrêmophile le plus thermotolérant au monde qui vit sur la partie la plus chaude des cheminées hydrothermales profondes (C) de la Dorsale Est du Pacifique (à -3500m de profondeur).

therapeutic potential in the treatment of pulmonary infections caused by Pseudomonas aeruginosa and Mycobacterium tuberculosis. The SATT Nord and the University of Lille are currently supporting her for two maturation projects (RedAMP and Paspor) to help with the transfer. The use of these AMPs in combination with other compounds is currently being tested (ANR MustArt, led by Alain Baulard). An intraCIIL project (UFO) in collaboration with Muriel Pichavant and Oleg Melnyk has made possible to initiate a line of research on the importance of the cellular environment in the effectiveness of AMPs. She is currently pursuing her collaborations on the adaptation (via AMPs) of invertebrates to extremehabitats(Biodiversa ANR ASICS and Subanteco IPEV programs). This fundamental research is complementary to applied research, allowing the discovery of new AMPs whose potential remains to be explored.

Mathieu GISSOT
CNRS Senior Rechearch

After my Masters at the Pasteur Institute in Paris working on Cryptosporidium *parvum*, I did my PhD at the Pitié-Salpêtrière hospital under the supervision of Dr. Vaquero in the laboratory of Dr. Mazier. I studied gene expression regulation in *Plasmodium falciparum*, the causing agent of malaria. I then did a post-doc at the Albert Einstein College of Medicine in New York (USA) during which I became interested in the importance of transcriptional regulation, and in particular epigenetics, in the parasite *Toxoplasma gondii*. Recruited as a CNRS researcher in 2009 within Stanislas Tomavo's team, I developed a scientific project on the regulation of gene expression during the proliferation and differentiation of T. gondii. This parasite is part of the Apicomplexa family composed of important pathogens such as Plasmodium, or Cryptosporidium. *T. gondii* infection is an important cause of neonatal morbidity and mortality and an opportunistic pathogen in immunocompromised patients. Its life cycle is complex with several stages of differentiation and proliferation in humans (intermediate host) and cats (definitive host). The ability to proliferate and differentiate is therefore key to the pathogenicity of this parasite. We studied how the parasite regulated the expression of its genes during these two events. In particular, we have shown the importance of transcription factors (ApiAP2) in the regulation of genes during differentiation into bradyzoites and proliferation into tachyzoites. Specifically, we were able to show that ApiAP2s act in coordination to regulate the expression of virulence proteins in this parasite. We are interested in the mechanisms of regulation of the tachyzoite cell cycle and we were able to show that a major regulator is responsible for an important part of the decision between proliferation and differentiation. These studies illustrate the subtlety of the regulatory mechanisms in this parasite and encourage us to better understand the signaling pathways controlling the cell cycle, a project that we develop with Maria Francia (Institut Pasteur de Montevideo, Uruguay) and Philippe Bastin (Institut Pasteur de Paris). We have also benefited from CPER funding and have developed a fruitful collaboration with Jean-Charles Lambert's team (U1167). We established an in vitro model to produce mature bradyzoite cysts in

primary brain cell cultures. We use this model to better understand the parasite differentiation mechanisms and also to measure the consequences of neuron infection on their activity and biology. This model also enabled the testing *in vitro* of compounds that could eliminate bradyzoites within brain cells, a research area that we are developing with enthusiasm. Trained as a geneticist, I am always eager to develop genetic tools allowing the manipulation of the parasite's genome. I am always enthusiastic about technological developments that allow us to better understand molecular mechanisms at play in this parasite.



Lorena Redondo-Morata
INSERM Researcher

After graduating as a pharmacist in the University of Barcelona, Spain, I carried my PhD in the Physical Chemistry Department of the same university, concomitantly with the Institute for Bioengineering of Catalonia (IBEC). My PhD was devoted to the study of nanomechanics of lipid membranes mainly using atomic force microscopy (AFM). AFM is a scanning probe technique used to visualize and manipulate structures at the nanoscale which allows for the high-resolution imaging of biological samples and can also be used to measure their mechanical properties. The mechanical stress is fundamental in biology since cells are known to perform their function under a complex combination of forces. The mechanochemical properties of the membrane are strongly correlated with the function of several membrane proteins, which demand a very specific and highly localized physicochemical environment to perform their function. Our ultimate goal was to provide a new vista on membrane mechanics in a confined area within the nanometer realm, where most of the specific molecular interactions take place. I obtained my PhD in 2012 under the supervision of Prof. Fausto Sanz. Our work on the influence of cholesterol on the membrane phase transition was awarded in 2013 by the AFMBioMed Young Investigator Award.

And yet, it moves

AFM constitute today a fairly established methodology to observe the structure of biomolecules and to measure their mechanical properties. However, biomolecules are dynamic in nature; hence, to understand how biomolecules work we need to increase the spatiotemporal resolution of conventional AFM. The frame rate of conventional AFM of one image every few minutes is not sufficient to visualize most dynamic processes of biological molecules, which take place in the majority of cases at sub-second time scales.

In 2013, I joined as a postdoctoral fellow to the Simon Scheuring's laboratory at Inserm in Marseille, France. There, I learnt High-Speed AFM to study dynamic remodeling of biomembranes. The molecular movies obtained by this method provide insights otherwise not accessible by other means to date. I studied the ESCRT-III (Endosomal Sorting Complex Required for Transport) system. ESCRT-III is needed for lipid membrane remodeling in many cellular processes, from abscission to viral budding and the formation of late endosomes. However, how ESCRT-III polymerization generates membrane curvature remained debated. We showed that ESCRT-III polymerized into spirals at the membrane surface and its interfilament dynamics provides a basis for a mechanistic explanation of how this protein

machinery creates tension for membrane fission. I was awarded in 2016 by the Spanish Biophysical Society with the Young Researcher Prize as a recognition for my research achievements.

«*Science is the art of the possible*» - Irving Langmuir

In 2017 I obtained an Inserm tenure researcher position in the team of Frank Lafont, which I joined in 2018. At the present, I pursue my studies devoted to the mechanics and dynamics of cell membrane remodeling using AFM and correlative microscopies. The shape of biological membranes is constantly remodeled and maintained out of equilibrium by active proteins.

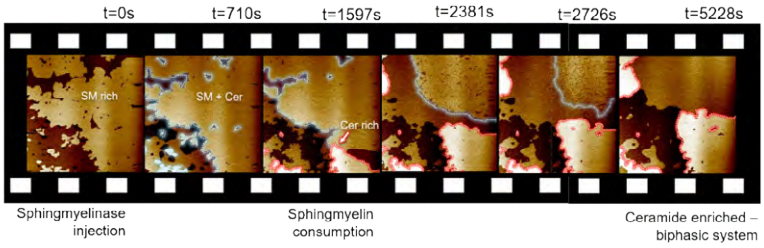


Fig 1: In situ enzymatic conversion of sphingomyelin-enriched to ceramide-enriched domains

Our motivation is to explore the structure, mechanics, and dynamics of processes such as deformation, fusion and fission or cell signaling. Yet, the compositional and topographical complexity of cell membranes in live cells impedes our investigations to decipher the biophysical principles underlying processes at the membrane. Our work relies on the development of model membrane systems that are simpler mimics of the cell membrane with controllable complexity. Current active research topics, thanks to I-SITE ULNE, ANR, and most recently, Inserm Tremplin funding are the effect of antimicrobial peptides on membranes, biophysical characterization of extracellular vesicles, and the dynamic nanomechanical changes of the lipid membrane in the conversion of sphingomyelin to ceramide, relevant in several biological contexts as apoptosis or viral infection (Fig.1.). Finally, together with Frank Lafont we have partnered a H2020 Marie Sklodowska-Curie project on the application of cutting-edge physical tools for the mechanical phenotyping of cells and tissues of clinical relevance, aiming at developing novel early diagnostic tools.

Elisabeth WERKMEISTER
CNRS Engineer

After completing a PhD in microscopy in a bioengineering laboratory directed by Pr. JF Stoltz at the Faculty of Medicine in Nancy, I joined the BICeL imaging platform, directed by F. Lafont, as a CNRS research engineer in 2008. In 2016, I joined F. Lafont's research team (Cellular Microbiology & Physics of Infection) for 60 percent of my activity.

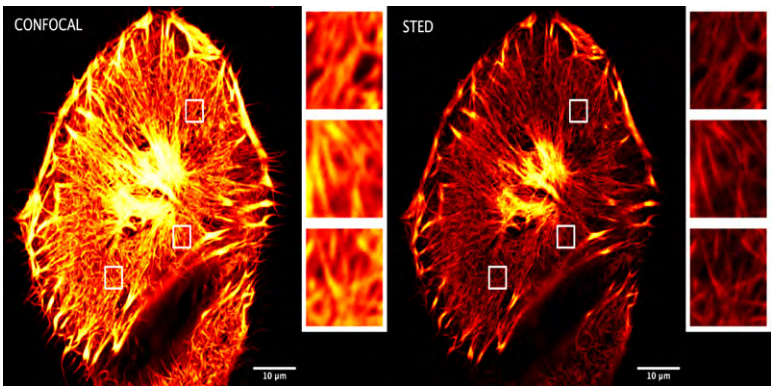
Hence, currently, my working time is therefore divided into two activities: mainly my activity in F. Lafont's team and also a part of my time is devoted to the Imaging Facility (BioImaging Center Lille).

In my research team, I focus on super resolution microscopy. Indeed, we are using state-of-the-art instruments in super-resolution fluorescence microscopy that are coupled to atomic force microscopes. These technological tools based on nanosciences can also be correlated with electron microscopy. The advantage to correlate these three techniques is that there are complementary. Atomic force microscopy (AFM) can give information about the mechanical properties of a cell (e.g. membrane elasticity). Fluorescence microscopy can be very specific (immunolabelling). Electron microscopy brings ultrastructural information.

All these recently emerged super resolution techniques enable to overcome the diffraction limits of optical microscopy and enable to win resolution on fluorescence images. A conventional confocal microscope shows a resolution about equal to 250 nm, whereas a SIM (Structured Illumination Microscopy) has a resolution of 100 nm, a STED (Stimulated Emission Depletion) gives a resolution of 50 nm and a PALM (Photoactivated Localization Microscopy) has a resolution of 30 nm.

In our team, we are interested in the early stages of infection at the molecular and cellular levels. Our research focuses on autophagy. Moreover, we're interested by the relation between this process and the mechanical properties of cells.

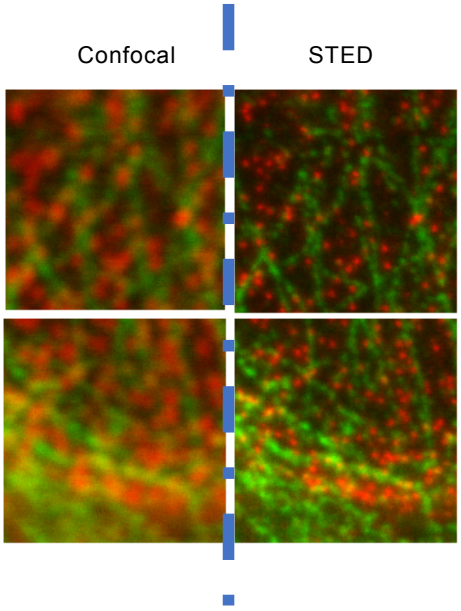
I am strongly involved in a project on micropatterned cells. Our goal is to correlate the analysis of the cytoskeleton of cells (imaged with STED), with the measure of the elasticity of the cells (measured with AFM) during the process of autophagy.



Actin cytoskeleton of HeLa Cells imaged in confocal and in STED (Live610 Actin – Abberior).

Also, in the last few months, I began to work with expansion microscopy, which is a tool that allows nanoscale imaging of biological samples embedded in a swellable hydrogel.

On the other hand, my platform work is mainly concerned with formation and assistance on microscopes ranging from wide field to confocal microscopes. In the facility, I'm in charge of the fluorescence image analysis (ImageJ, Imaris, Matlab,...). For instance, I develop scripts to automate tasks with the ImageJ software (figure formatting, cell counting, spot counting, tracking analysis, co-distribution analysis,...), for different teams of our campus, working on various themes (cancerology, neurobiology, immunity/infection,...). One of my latest piece of work concerns the analysis of LC3 spots to quantify the autophagy on cells infected by lactic acid bacteria. I am involved in many CNRS/Inserm/Univ trainings on this image analysis topic.



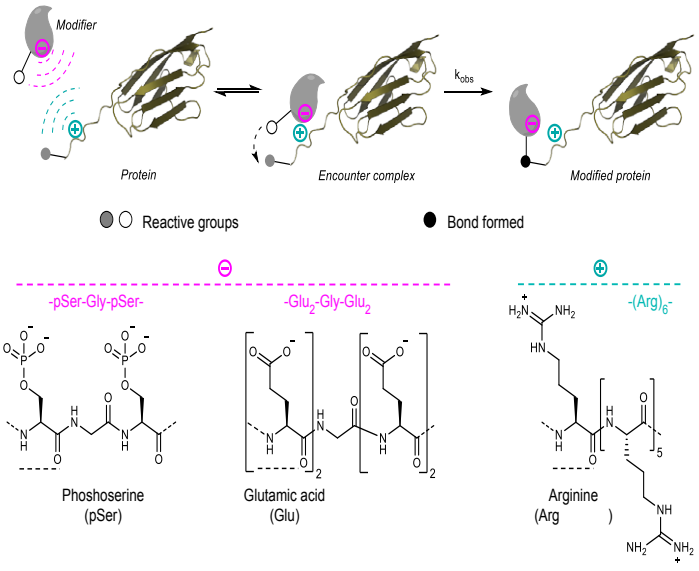
Nup (Star Red) and Tubulin (Star 460L) in HeLa cells imaged in confocal and in STED

Nathalie OLLIVIER
IPL Engineer

I graduated from Ecole Nationale de Chimie de Mulhouse in 1998 and joined the same year the Pasteur Institute in Lille in the team of Biomolecules and Chemistry led by Helene Gras-Masse and Oleg Melnyk.

As soon as I arrived at the Institute, I started to study reactions called chemical ligations. These reactions, which permit the ligation of two biomolecules in water, in a controlled manner, are of the greatest interest for the synthesis of proteins or the production of molecularly defined conjugates. I studied the hydrazone ligation between a hydrazide and an aldehyde and synthesized oligonucleotides-peptides conjugates, in collaboration with the Pasteur Institute in Paris. Then, I applied this chemistry to the microarrays production on microscope slides, in order to design systems for the parallel detection of oligonucleotides.

2005-2006 were key years in my career because they correspond to my first publications on Native Chemical Ligation (NCL), a chemistry which has largely contributed to the visibility of the team in the field of total protein synthesis and my promotion as Research Engineer. A leading article on SEA ligation chemistry, in 2010, earned us worldwide recognition in the field of ligation. This chemistry, patented in 2009, also led to the creation of XProChem in 2012. The year 2012 also corresponds to the first work of the team on the use of total protein synthesis to understand the mechanism of activation of tyrosine kinase receptor MET by the Hepatocyte Growth Factor (HGF). In particular, I performed the first total synthesis of the K1 domain of HGF, an 85 amino acids protein, that is part of the high affinity binding domain of HGF for the MET receptor. This protein was the starting point of an important project aimed at the design of potent agonists of the receptor MET, whose potential in regenerative medicine has aroused great interest since the discovery of HGF in 1980s. The agonists designed by the team in collaboration with the team of Dr Ermanno Gherardi (Italy) were patented in 2015.



Following this work, I explored the chemistry of selenium in order to accelerate ligation rates as well as the use of microfluidic systems for the synthesis of antimicrobial peptides, in collaboration with Ruben's team and the team of J-C Monbaliu at the university of Liège. For 4 years, I have been working on a totally new concept inspired by mechanisms used by cells to promote the encounter and collision of biomolecules. The basic idea is to accelerate the rates of ligation reactions by placing them under the control of long-range carrying electrostatic interactions (Figure). The first advances of this research project were recently published in Nature Communications (Nathalie Ollivier et al, Nat. Comm. 2022, 13, 6667).

First congress of the FHU RESPIRE

Six CIIL members have attended the first meeting of the FHU RESPIRE, which took place in the beautiful domain of Forges-les-Eaux (76); on the 8th and 9th of November in a hard-working and friendly atmosphere.

The project of the FHU (Fédération Hospitalo-Universitaire) RESPIRE is coordinated by the Pr Claire Andrejak, pulmonologist in Amiens CHU, and composed of Amiens-Picardie, Caen, Lille and Rouen hospitals and research units, as well as of the CIIL and academic partners of the North-West inter region.

The FHU-RESPIRE aims at strengthening exchanges between hospital-university and research units in order to stimulate medical research on the thematic "Environment and respiratory health" (especially its role in infective processes and its relationships with inflammatory pulmonary diseases) in order to improve health care quality through a faster implementation of innovations.

The first day was restricted to FHU members with communications in each workpackage and panel discussions. Olivier Le Rouzic and Philippe Gosset are among WP3 leaders dedicated to inflammatory pathologies while Karin Seron is implied as a leader in WP4 dedicated to therapeutic. These discussions aim at initiating collaborations either in research or in clinical studies.

The second day was open to anyone, with student's presentations, posters and plenary conferences with various themes from atmospheric pollution, pulmonary diffusion of antibiotics to pulmonary microbiota and a raising awareness in all the aspects of valorization. Congratulations to Imelda Raczkiewicz, currently a PhD student mentored by Karin Seron and Anne Goffard , who received the best poster award for her work on the antiviral activity of Hypericum perforatum metabolites on human coronaviruses. This will allow her to participate in a scientific conference in the near future.

To note:

The next meeting of the FHU Respire will be held in Lille on November 21, 2023 in the amphitheater of the IBL. Save the date !!

Odile POULAIN

1st row, from the left to the right :
Karin SERON, Odile POULAIN, Imelda RACZKIEWICZ
2nd row
Olivier LE ROUZIC , Philippe GOSSET

Imelda RACZKIEWICZ, MCV's PhD student at CIIL winner of the oral communication award.

On the left presentation of Layal MASSARA

2023

The news in brief ...

CIIL General Assembly

At the beginning of each year, CIIL's members met in a general assembly to review the events that marked the past year and to present the perspectives for 2023. Unlike previous meetings, we were able to leave our computer screens to meet face-to-face and share a moment of conviviality around the traditional galette.

Retirements

Régine Blanchet, CNRS assistant engineer in charge of the building's financial management, has just ended her career after more than 20 years at IBL. We thank her for her precious help in the taking over context of the building by the CIIL

Marie-José Ghoris, an IPL technician working in Melnyk team, has just retired after a complete career at the IPL. For many years, she was in charge of the *molluscarium*. The task has been managed with professionalism. We thank her very much for her contribution.

New recruits

The CIIL account management service has just been reinforced by the arrival of Fabienne Lebleu, CNRS account manager who was on secondment at the University of Lille before joining us.

Audrey Tarricone has just been recruited as a CNRS engineer in the Dubuisson team within the framework of the Virocrib network whose objective is to offer a service for the screening and characterization of antivirals.

Election of the future director of the CIIL for the next quinquennial period (2026-2030)

At the beginning of November 2022, CIIL researchers and ITAs participated in the election of the CIIL director candidate for the next five-year term. At the end of this election, Frank Lafont, Director of Research at the CNRS, was elected and he is now in charge of the preparation of the files for the future evaluations of the teams and the unit by the HCERES and the governing bodies.

Promotions within the CIIL

Aurélie Tasiemski has been promoted to full Professor at ULille.

Jérôme Vicogne has been promoted to Director of Research at CNRS.

Christelle Faveeuw has been promoted to CR Hors Classe at Inserm.

Sabrina Marion has been promoted MCU Hors classe at ULille

Dominique Raze to IR1 at Inserm.

François Pierre obtained a permanent engineer position at ULille.

Isabelle Aslani has been promoted to IE Hors Classe at CNRS

Emmanuelle Petit has been promoted to TCS at Inserm

Amélie Dewitte has been promoted to TCS at Inserm

Reallocation of the old IBL studios

This autumn, the former IBL studios, located on the 1st floor of the cedille, were refurbished as offices to house the administrative service of the Plateformes Lilloises en Biologie et Santé unit (PLBS, UAR2014/US41). The move took place at the end of the year, offering new space on the 2nd floor of the Cedille for the CIIL.

Contributors to this issue include :

- Aurélie TASIEMSKI
- Lorena REDONDO-MORATA
- Elisabeth WERKMEISTER
- Nathalie OLLIVIER
- Jérôme VICOGNE
- Mathieu GISSOT

Director of the publication	:	*Jean DUBUISSON*
Editorial coordination	:	*Isabelle ASLANI*
Design	:	*Sophana UNG*

CIIL - CNRS UMR9017 - INSERM U1019
1, rue du Professeur Calmette - 59000 Lille

https://www.ciil.fr