Société de Chimie Thérapeutique

55TH INTERNATIONAL CONFERENCE ON MEDICINAL CHEMISTRY
INTERFACING CHEMICAL BIOLOGY AND DRUG DISCOVERY
NANTES, FRANCE - JULY 3-5, 2019

NEWSLETTER 2019

EDITORIAL

Digitalization and the Medicinal Chemistry – Chemical Biology Continuum

Medicinal chemistry is a constantly developing science and rapidly expands towards biology, providing pharmacological and imaging tools to set up assays, interrogate cellular pathways and explore various pathologies. It also develops quickly to take advantage of the new technologies enabled by digitalization. These forces will shape the evolution of medicinal chemistry over the next few years, and represent a fantastic opportunity to take advantage of synergies with other disciplines and increase scientific creativity.

In this sense, the 55th edition of the International Conference on Medicinal Chemistry, RICT 2019, is a perfect occasion to keep abreast of the newest developments: Focusing on the interface between Chemical Biology and Drug Discovery, it also includes a session on artificial intelligence.

A successful scientific career in drug discovery increasingly requires awareness of the full scientific continuum across medicinal chemistry and chemical biology. Research projects can be looked at as intellectual adventures starting with the most basic biological questions related to target selection, for which medicinal chemists can provide the necessary pharmacological tools. Subsequently, medicinal chemists play a critical role in identifying and optimizing drug candidates, as well as in providing imaging tools for characterization of drug candidates in the clinic. The extended role of medicinal chemists over the life of a project creates opportunities for multiple impactful contributions. It also requires an understanding of the needs of all their scientific partners, from in vitro biologists to pharmacologists and clinicians. It is a tall order, and what makes medicinal chemistry scientifically so fascinating.

The second trend, digitalization, is beginning to enable a different approach to medicinal chemistry. While some applications are still in their infancy, many begin to show their potential to free chemists' minds from repetitive and low-value activities. This will give us more time to address the right problems and take full advantage of our creativity. There are two main applications of digitalization: The first is purely related to data acquisition, data management and interpretation, as illustrated by automatized synthesis systems, electronic notebooks, database exploration tools, and recommender programs. The reliability and efficiency of these tools is improving quickly, and many are already implemented. In contrast, applications related to true artificial intelligence still need to demonstrate their usefulness in chemical biology and medicinal chemistry, and the session on this topic will be a good starting point to discuss the potential of future applications. The convergence of life sciences and digital technologies is clearly happening: wearable diagnostics, robotics, big data mining from clinical trials and many other examples are becoming reality. At some point, AI will also influence medicinal chemistry.

Another area, unrelated to chemical science, impacts the practice of medicinal chemistry: outsourcing, which has expanded from providing starting materials, to subcontracting multi-step organic synthesis and established biological assays. The cost of research, particularly in Europe and in the USA, pushes both academia and industry to find alternatives for segments of organic chemistry

that have low added value, and for standard profiling activities. The time of researchers is precious; it is important that they do not have to spend hours on activities that can be done faster and cheaper by a machine or a service lab, sparing their time for creative work – a skill that won't be replaced by artificial intelligence and robotic systems anytime soon. It is worth talking to exhibitors to keep abreast of new offers, and to let them know which services are expected from them.

This conference is attracting a number of highly influential researchers, including Herbert Waldmann, who will deliver the Paul Ehrlich Award Lecture. There will be sessions on cancer and therapeutic breakthroughs, as well as on complex carbohydrates, antibodies and protein engineering. While low-molecular weight compounds will remain the mainstay of medicinal chemistry, these new areas provide added opportunities to demonstrate its impact. The combination of biologics and skillful chemical optimization provides access to novel classes of drug candidates, with the potential to address diseases that were so far difficult to treat. This is scientifically very promising.

Such an environment provides key opportunities for networking, a must in a community where collaboration is a requirement for successful funding and scientific impact. By organizing RICT on an annual basis, the Société de Chimie Thérapeutique contributes to a lively medicinal chemistry community. They deserve our continuous support and appreciation for bringing together such an attractive program.

I wish you a very successful participation in RICT 2019, enjoying new scientific insights among a growing network of medicinal chemistry and chemical biology enthusiasts.

Yves P. Auberson
President of the European Federation for Medicinal Chemistry
Novartis Institutes for Biomedical Research
Basel, Switzerland

OUR HOSTS

UNIVERSITÉ DE NANTES

In the last 50 years, the University of Nantes has taken training and research to the highest level and is now among the top 25 French universities. The university implements a lot of programs in Life Sciences and Biotechnologies as well as Exact Sciences and Technologies such as interdisciplinary programs. The scientific members of the local organising committee (LOC) belong to IICiMed and CEISAM laboratories, which are located respectively at the School of Pharmacy and at the Faculty of Sciences and Technics, two main components of the University of Nantes.

IICiMed – EA 1155 is an academic Laboratory (www.iicimed.fr) involved in a scientific project at the interface of biology and chemistry, and based on the continuity between fundamental research, on cells and molecular targets, and medical research, on clinical isolates and *in vivo* models. This research aims at understanding the pathological phenomena (invasion, cell proliferation...) and drug resistance in order to identify potential targets and drug candidates in **infectious diseases** and **oncology**. Directed by Prof. Patrice Le Pape, the laboratory consists of three departments that develop the two main research areas:

- Medicinal Chemistry department (LOC: Marc-Antoine Bazin, Muriel Duflos, Cédric Logé, Pascal Marchand, Sylvie Piessard & Jean-Michel Robert)
- Parasitology and Medical Mycology department (including the Head of the group),
- and Cancerology department.

Research line 1: infectious diseases

Currently, treatment of invasive fungal infections is characterized by the toxicity of some reference molecules and the existence of phenomena of molecular and clinical resistance explaining the need to propose urgently new therapeutic alternatives. By complementary approaches, the projects developed in the Lab try to bring elements of response in terms of bypassing resistance (AntiFong, PARADyes project of vectorization), of host-parasite interaction (granuloma, attachment of fungi to host cells: Sansas project), of therapeutic targets (PKC, Hsp90: PIRAMID project dealing with PPIs) and of new chemical series.

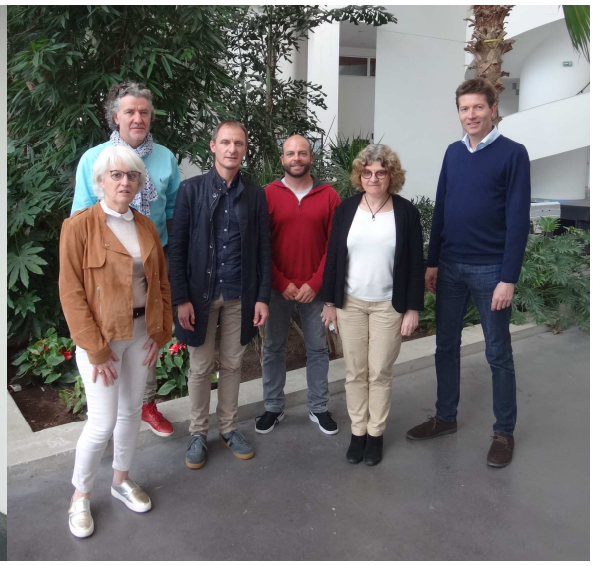
The research of Parasitology and Medical Mycology department is focused, in particular, on the pathophysiology of candidiasis and aspergillosis in immunocompromised patients. Persistence mechanisms, signaling cascades and formation of sterols in this host-pathogen relationship are studied to develop new therapeutic approaches.

IICiMed also develop antiparasitic research programs dedicated to the fight against Leishmaniasis and Chagas disease through international collaborations with Brazil and Mexico.

Research line 2: cancerology

The research activity of Cancerology department consists of the identification of new pathways and molecular targets involved in non-small cell lung cancer.

The research activity of Medicinal Chemistry department is dedicated to both lines of research. The first approach is focused in obtaining new antifungal agents targeting protein kinases, CYP51 or Hsp90. Drug Discovery programs are also developed leading to novel antitumor agents as Haspin, Limk1 or Pim kinases inhibitors, for example, through the "Cancéropôle Grand Ouest" networking.



From left to right: J. Graton, M. Pipelier, J. Lebreton, M. Mathé-Allainmat, S. Gouin.

From left to right: S. Piessard, J.-M. Robert, P. Marchand, M.-A. Bazin, M. Duflos, C. Logé.

CEISAM laboratory: Molecular Chemistry is the common thread of the scientific activities in CEISAM laboratory (http://www.sciences.univ-nantes.fr/CEISAM). Moreover, the interdisciplinary character of the research projects carried out within the laboratory, through its networks of national or regional partnerships, makes CEISAM a support of important poles of activity of the "Région Pays de Loire", particularly Health and Agri-foodstuffs. This is made possible by recognized expertise of the various actors of CEISAM in the fields of Fine Chemistry (synthesis and methodologies) but also of Molecular Modelling (methodologies, molecular dynamics to quantum chemistry).

Fine Chemistry :

SYMBIOSE team (LOC : Jacques Lebreton, Muriel Pipelier and Monique Mathé-Allainmat) : SYMBIOSE research activities are focused on the development of organic molecules with biological interest and novel methodologies in organic synthesis. This means total synthesis, including asymmetric synthesis of natural molecules (alkaloids, macrolides, glycoceramides, pluramycins..) as well as multistep synthesis of compounds rationally designed and with potential biological or pharmacological interests. The organic chemists of SYMBIOSE, are therefore recognized experts in heterocyclic and alkaloid chemistry, sugar and nucleoside chemistry, macrolide chemistry, offering so a wide range of competencies and skills. This has allowed SYMBIOSE team to establish collaborations with biologists from the academic world through national or regional consortium (Cancéropôle Grand Ouest, CIMATH2, GlycoOuest, ECRIN, PIRAMID..) and also to shape research collaborations with private partners (Merck Serono, Servier, Janssen, Atlanchim Pharma laboratories). All these collaborations led to the development of new molecules with potential antitumoral (antimitotic, chemosensitizators or anti-metastatic compounds) or antiviral activities (nucleoside analogs) as well as modulators of the immune system (IL modulators) or the Central Nervous System (nAChRs ligands).

CORAIL team (LOC : Sébastien Gouin) : Research activities from the group « Glycochemistry and Bioconjugates » in the CORAIL team are focused on the development of therapeutically relevant carbohydrates and iminosugars to interfer with carbohydrate-binding and processing proteins from pathogens. We are developing mono- and multivalent carbohydrate-based anti-virulence factors to block the attachment of virus, bacteria, and fungi to host cells. Our group also recently focuses on the development of novel bioconjugation methods to chemically modify the capside of adeno-associated virus (AAVs). AAVs are efficient therapeutic platforms for the treatment of genetic diseases. Chemically modified AAVs should maximize transduction in tissues of interest and hence improve the therapeutic index of AAV-based gene therapy.

Molecular Modelling :

ModES team (LOC : Jérôme Graton) : ModES is specialized in the study of the structure, properties and non-covalent interactions of molecular systems. A multidisciplinary approach consists of combining experimental measurements and theoretical tools via spectroscopic methods and molecular modelling covering a wide range of methodologies, from quantum chemistry (QM) to QM/QM' and QM/MM hybrid methods, but also molecular dynamics and docking. In the field of medicinal chemistry, the members of ModES team are strongly involved in the comprehensive study of the ^{211}At chemistry for cancer radioimmunotherapy (Equipex ArronaxPlus, Labex IRON, ANR RoAstA), in the experimental and theoretical characterization of hydrogen-bond and lipophilic properties of fluorinated drug candidates (ANR ProOFE). They also strongly contribute to the molecular modelling investigations in protein-ligand and protein-protein interactions projects (regional projects: ECRIN, PIRAMID, FunRegiOx).

A regional consortium (PIRAMID 2015-2020) aims to design original inhibitors targeting selected protein-protein interactions by covering multidisciplinary fields such as biology, chemistry and molecular modelling. This group, supported by the "Région Pays de la Loire", brings together several CEISAM research teams (SYMBIOSE, CORAIL, MoDES) as well as the IICiMed team and is managed by two members of the SYMBIOSE team.

IICiMed and CEISAM are also involved in other collaborative projects, PARADyes and Sansas, as previously indicated, showing a great interaction dedicated to the Medicinal Chemistry between both Faculties and Labs.

Paul Ehrlich Prize

The **Paul Erlich Prize** sponsored by **Janssen-Cilag France** is attributed to researchers of international reputation or research teams for their important contributions to medicinal chemistry.

Janssen represents the Pharmaceutical R&D Division of Johnson & Johnson. Their strategy is to identify the biggest unmet medical needs and match them with the best science, internal or external, to find solutions for patients worldwide. The activity of Janssen is focused on discovering, developing and delivering differentiated medicines in five therapeutic areas: neuroscience, infectious diseases and vaccines, oncology, immunology and cardiovascular/ metabolism.

Dr Paul Janssen, Founder, Janssen Pharmaeutica, N.V.

Paul Ehrlich

More than hundred years ago, Paul Ehrlich shared the Nobel Prize for Medicine or Physiology with Elie Metchnikov. Even if this award was the crowning recognition of his contributions to immunology, today he is considered the founder of medicinal chemistry.
Paul Ehrlich starts his research career by developing a method for selective staining of cells. From this work he pursues the idea that dyes form very specific bonds to cell receptors. This concept will lead him to the “side-chain theory” to explain the properties of antibodies. An organism infected by a toxin develops a huge number of “side-chains” which will prevent a repeated infection.
From the principle of the “key and lock” and the “magic bullets” there is only one step for Paul Ehrlich to become director of the Royal Prussian Institute of Experimental Therapy. There at first he devotes himself to the trypanosomes. The trypanosomes could indeed be successfully killed with the dye Tryptan Red. Hereafter he deals with Atoxyl, in current use for treating sleeping sickness presenting however intolerable side effects.

He engages himself in modifying its structure and carrying out tests, which even nowadays would be considered as a high throughput *in-vivo* screening. He should go to the 606th analogue to obtain a really efficient compound evidenced on a model test on mice infected by trypanosome.
In 1905 the pathogen of the syphilis, the *Treponema pallidum* is identified and with a model infection on a rabbit Paul Ehrlich shows the efficiency of the compound 606 which he names Salvarsan. A test with 50 patients will produce remarkable results. Unfortunately, general usage of Salvarsan is accompanied by the occurrence of numerous side effects. A program involving the synthesis of a new series of 300 compounds which would today be qualified as “structure-properties relationship optimisation” results in the water soluble “compound 914” to make career under the name of Neosalvarsan.

Professor Herbert Waldmann, Paul Ehrlich Prize 2019 Laureate

Herbert Waldmann was born in Neuwied, Germany and studied chemistry at the University of Mainz where he received his PhD in organic chemistry in 1985 under the guidance of Horst Kunz. After a postdoctoral appointment with George Whitesides at Harvard University, he completed his habilitation at the University of Mainz in 1991. In 1999 he was appointed Director at the Max Planck Institute of Molecular Physiology Dortmund and Professor of Organic Chemistry at the University of Dortmund. His research interests lie in the syntheses of signal transduction modulators and the syntheses of natural product inspired compound libraries and their biological evaluation.

He has been the recipient of the Friedrich Weygand Award for the advancement of peptide chemistry, of the Carl Duisberg Award of the Gesellschaft Deutscher Chemiker, the Otto-Bayer-Award, the Steinhofer Award of the Steinhofer Foundation, the Max Bergmann Medal, the GSK Award on Chemical Biology, the Hans-Herloff Inhoffen-Medal, the Emil-Fischer-Medal, he is a Member of „Deutsche Akademie der Naturforscher Leopoldina, Halle/Saale“, of the NRW Akademie der Wissenschaft und der Künste and since 2005 he is a Fellow of the Royal Society of Chemistry. In 2014 he received the Honorary Doctorate (Dr. h. c.) bestowed by Leiden University, NL.

Pierre Fabre Award for Therapeutic Innovation

With a portfolio representing a continuum of activities spanning from prescription drugs and consumer healthcare products to dermo-cosmetics, Pierre Fabre is the second largest dermo-cosmetics laboratory in the world, the second largest private French pharmaceutical group and the market leader in France for products sold over the counter in pharmacies. Its portfolio includes several global brands and franchises, such as Eau Thermale Avène, Klorane, Ducray, René Furterer, A-Derma, Galénic, Elancyl, Naturactive, Pierre Fabre Health Care, Pierre Fabre Oral Care, Pierre Fabre Dermatologie and Pierre Fabre Oncologie.

Pierre Fabre

Taking care, living better

In 2018, Pierre Fabre generated 2.3 billion euros in revenues, of which 64% came from its international business and 61% from its dermo-cosmetics division. Pierre Fabre, which has always been headquartered in the South-West of France, counts about 11,000 employees worldwide, owns subsidiaries and offices in 47 countries and enjoys distribution agreements in over 130 countries. In 2018, Pierre Fabre dedicated 187 million euros to R&D efforts, split between oncology, consumer healthcare, dermatology and dermo-cosmetics.

Pierre Fabre is 86%-owned by the Pierre Fabre Foundation, a government-recognized public-interest foundation, and secondarily by its own employees through an international employee stock ownership plan.

In 2019, Ecocert Environment assessed the Group's corporate social and environmental responsibility approach according to the ISO 26000 standard on sustainable development and awarded it the ECOCERT 26000 "Excellence" level.

M. Pierre Fabre, after obtaining his pharmacist diploma opened his own pharmacy in Castres (South-West of France) in 1951. Interested in studying the virtues of *Ruscus aculeatus* (an abundant plant in Castres region) he founded his Laboratory in 1962 by launching the first veinotonic natural product, Cyclo 3. A few years later, he strengthened his position in pharmaceutical branch by acquisition of *Inava Laboratories*. As part of diversification and opening towards dermo-cosmetic products *Klorane Laboratories* was bought in 1965.

This strategy continued and prestigious pharmaceutical and para-pharmaceutical brands have been acquired such as *Ducray* in 1969 and *René Furterer* in 1979. The main steps of international expansion were the opening of subsidiaries in Spain, Portugal, Italy, Germany, the acquisition of *Genesis US* in 2002 and in 2006 the Brazilian *Darros Laboratorios*, specialized in oncology and dermo-cosmetic products.

The name of Pierre Fabre is definitively associated with the spirit of "Therapeutic Innovation". Pierre Fabre Group, in memory of its founder and in partnership with the French Medicinal Chemistry Society (SCT), has decided to recognize decisive actions, scientific discoveries, innovative technologies that result in substantial therapeutic innovations.

Dr Frédéric Taran, Laureate of Pierre Fabre Award for Therapeutic Innovation 2019

Frédéric Taran is in charge of the department of organic chemistry (50 persons) at the French Alternative Energies and Atomic Energy Commission (CEA) located at Saclay. Dr. Taran secured a PhD in chemistry at the Paris XI University under the supervision of Dr. Charles Mioskowski. In 1996, he moved to a post-doctoral position with Prof. Sir Derek Barton at Texas A&M University (USA) and then came back to CEA in 1998 as permanent researcher. His research aims at developing new reagents for bioorthogonal chemistry to address important problems in the fields of bioconjugation, labelling, imaging and drug delivery.

OUR ACTIVITIES

The **French Medicinal Chemistry Society** (Société de Chimie Thérapeutique, **SCT**) was founded in 1966 with the aim to disseminate scientific results and promote interdisciplinary knowledge in the major pharmaceutical research and development domains, covering the whole panel of implication of chemical sciences in drug discovery and related sciences from target identification to drug registration. The SCT is also involved in advancing medicinal chemistry / chemical biology by initiating cooperation, networking, providing training and coaching, and rewarding scientific excellence. The SCT is interested in developing and maintaining scientific contacts with industrial and academic research groups, medicinal chemistry and chemical biology related associations, federations, both on national and international level. The SCT is an active member of the European Federation of Medicinal Chemistry.

Our Society organises each year three to four dedicated scientific events from which the most important is the "***Rencontres Internationales de Chimie Thérapeutique - International Conference on Medicinal Chemistry", the* RICT,** an international congress devoted to the main scientific areas in medicinal chemistry and chemical biology. Generally, these outstanding meetings bring together more than 20 internationally recognized speakers from Europe, Asia and North-America, to present their outstanding results in every aspect of modern medicinal chemistry / chemical biology.

In 2019, the **55th RICT** entitled "*Interfacing Chemical Biology and Drug discovery"* is held in Nantes. For this meeting we propose a dense scientific program with 23 lectures and we hope to welcome more than 400 attendees coming from more than 30 countries worldwide.

The SCT pays special attention to our community of young scientists and students, as they will ensure the future endeavours in drug discovery. Each year, special scientific days (***Journées des Jeunes Chercheurs***, Young Researcher Fellows Meeting, **JJC-YRFM**) are organised for young PhD students and postdocs. This year the SCT **Young Researcher Fellows Meeting** (**YRFM**) were organised in Paris in February 2019. This two and a half day meeting has been very successful and it gave the opportunity for more than 350 PhD students and postdocs registered from 30 countries, to present their results in 35 oral communications and poster sessions. The **YRFM** provides unique occasion for attendees to present their work, exchange with peers, and meet representatives of pharmaceutical companies, small biotechs and start-ups. At the meeting, special work-groups are organized for CV improvement, simulated job interviews and round-tables on career guidance. The **forthcoming 27th YRD** will be held in Caen (February 5-7, 2020).

The SCT continues to promote the added value of chemical sciences within drug research and development, both focusing on the development of new drugs, as well on the elaboration of synthetic tools allowing better unravelling and understanding of the biological processes. In this line, **a thematic day "Drug Discovery in the RNA world"**, will be organised on December 11th, 2019 in Paris.

For several years, the SCT has been engaged in supporting young talented researchers in medicinal chemistry and chemical biology. By offering reduced registration and accommodation fees and the possibility of poster and career sessions, SCT encourages young scientists to attend these prestigious meetings. Numerous awards are devoted to young researchers including posters prices as well as the **"SCT Award for young investigator in Medicinal Chemistry"**.

For our more senior researchers, each year the "**Ehrlich Prize"** is attributed to researchers or teams for their outstanding contribution to medicinal chemistry. We also award the "**Pierre Fabre Award for Therapeutic Innovation"**. Both recipients are presenting their top-level work at the RICT meeting.

In recent years, the SCT continued its transformation in order to better meet the expectations of researchers, academic and industrial partners. Thus, in 2015 a 'Business Development Unit' under the guidance of Dr Pascal George was created in order to build interactions with SMEs, CROs and Biotechs and deal with their specific demands (advise, coaching, expertise…). The Business Development Unit counts today 5 members, all recognized for their expertise in different domains of drug discovery and/or business development, and we have set in place quite a number of contacts with SMEs, SATTs, incubators, etc …

We maintain a transparent communication of ongoing activities on our web-site, to show the strong dynamic behind our activities, to draw interest from the scientific community seeking to network and exchange, in order to encourage subscriptions and thus power up the position of the SCT within the European Federation of Medicinal Chemistry.
For inscription and for more information on our activities, events please feel free to visit our website **www.sct-asso.fr**.

Dr Brigitte Lesur
SCT Vice-President

Prof. Sébastien Papot
SCT President

Dr Dominique Lesuisse
SCT Vice-President

News from the SCT Communication

Mrs **Marie-Madeleine Le Floch**, the SCT secretary will answer any practical questions you have at the email address: **secretariat@sct-asso.fr**

For SCT members, a new procedure has been implemented to directly download the membership card. This simply involves connecting to your 'Member Access" area on the home page of the SCT website (http://www.sct-asso.fr). The login information (username and password), as well as the membership number can be retrieved at http://www2.sct-asso.fr/forgot-adh-remove.php?langue=english
After opening the "member Access" page, it is possible to download the membership card, which includes the member ID. The latter is required to benefit from reduced rates for events organized by the SCT.

The SCT Communication Board:

Dr. Frédéric Schmidt (Institut Curie, Paris)
Prof. Nicolas Willand (Université de Lille)

SCT Awards, Prizes

Awards, Prizes attributed by the SCT and its sponsors

For more information visit our website: **www.sct-asso.fr**

1. **Ehrlich Prize** with Lecture on RICTs (Sponsored by **Janssen-Cilag France, a division of Johnson & Johnson**) is attributed each year to researchers of international reputation or research teams for their outstanding contributions to medicinal chemistry.

2. **The Pierre Fabre Award for Therapeutic Innovation** is awarding a talented researcher who has accomplished a decisive action, a scientific discovery, an innovative technology contributing to a substantial therapeutic innovation. This prize is sponsored by the company "Pierre Fabre Médicament", in memory of its founder.

3. **SCT Award for Young Investigator in Medicinal Chemistry**. This award is for researchers no older than 36. The recipient of this prize is invited to give a talk at the SCT Young Research Fellows Meeting (*Journées de Jeunes Chercheurs*, JJC).

4. **Best oral communication and poster awards** for young medicinal chemists. Several prizes are offered each year for the best oral communications and posters presented by young researchers at either the RICT or the Young Research Fellows Meeting.

Grants attributed each year by the SCT and its sponsors

Research Grants (sponsored by Laboratories Servier)

Each year a call for project is launched by Servier. The SCT announces the subject of the call for project and organizes the selection of the applications. This year the subject is: "Inflammation and anti-cancer immune response"

One or two projects are selected each year by a Jury including scientists from both Servier and the SCT. Financial support corresponds to a 3-year PhD Fellowship or a 2-year Postdoctoral Fellowship.

Other companies are strongly encouraged to propose calls for project!

Prof. Christian Cavé
SCT Treasurer, Châtenay-Malabry

AtlanChim Pharma is a French Contract Research Organization (CRO) specialized in fine chemistry of small molecules at lab scale and belongs to AtlAntA group whose CEO is Ronan Le Bot, Pharma D.

Created in 2004 by Professor Jacques Lebreton and Doctor André Guingant, our laboratory is based in Saint-Herblain, close to Nantes (France). As a leading player, AtlanChim Pharma provides chemistry services from research to pilot, through CDMO partners, to pharma community, including biotech and pharmaceutical companies, research institutes, cosmetic and nutraceuticals companies mainly in France, Europe and US.

AtlanChim Pharma has 15 years experience of satisfying the organic synthesis requirements of companies and research institutions worldwide and has the ability to establish and maintain long term relationships with our customers. Our team has been collaborated with our partners on more than 1,500 projects ranging from milligrams to tens grams. Our practical expertise is constantly enriched throughout their work in organic syntheses.

As we know that confidentiality is a critical issue for all our customers, we have developed processes and systems that ensure that access to customer information remains fully protected.

At AtlanChim Pharma, we propose custom synthesis of **organic compounds**, **stable isotope labeling** and **isolation of impurities**, with a **customer-oriented approach** and a **high reactivity**. Our scientific team is led by experts in the fields of research services. Thanks to their strong scientific expertise, our Project managers will be able to understand customers expectations and needs.

As part of their services, AtlanChim Pharma can work on syntheses of compounds by elaborating new pathways, reproduce pathway according to Publications, Patents or customers' documents. AtlanChim Pharma is used to work on any type of challenging chemistry such as heterocycle synthesis, glycochemistry, steroids chemistry … We also has a specialty in stable isotope labeling by introduction of one or more stable isotopes (D, ^{13}C, ^{15}N, ^{34}S, ^{18}O) in any types of molecules.

We will be happy to discuss with you about your needs in fine chemistry during the event.

For more information, please contact us at commercial@atlanchimpharma.com or visit our website : www.atlanchimpharma.com

ProfileHIT, French CRO, opens up a prospect **to the Medicinal Chemistry's players** regarding the **rationalization of their R&D efforts**, offering a:

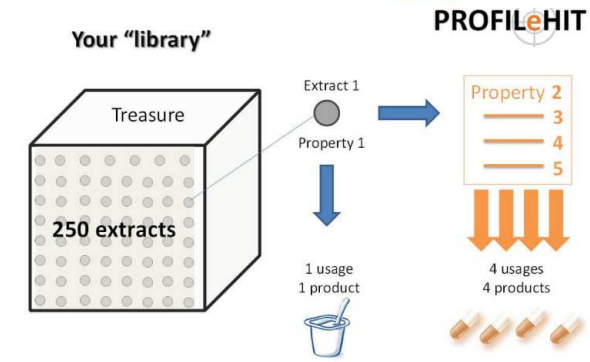
Biological property-based screening of their chemo-libraries

Synthetic or natural, your innovative molecules are poorly screened, or if they are, it is mainly regarding only one particular indication and never in a blind manner. By doing so, **their full potential is largely under-estimated.**

The objectivization offered by ProfileHIT allows you generating **industrial proprietorship**, through the quest of **additional properties**. Moreover, it permits to identify **new application fields** for your compounds.

Based on your chemo-libraries or extract-libraries, ProfileHIT provides you with *a* **whole-profiling** onto the functions of the human vascular-system, **filling the gap between the Biology and the Chemistry areas**.

Thus, these profilings constitute a safe way to bring new active and innovative molecules to your customers.



A de-multiplied potential **$ = 250x5 = 1250**

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Mathias Chatelais, CEO
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3, rue Aronnax - 44800 Saint-Herblain – France

www.profile-hit.com

Agrément CIR 2019 2020 2021

Screen through an innovative detection-method by flow cytometry, ProfileHIT brings an early access to the biological potential of new molecules, allowing a fast determination of its future clinical uses, targets or indications.

Discover pharmacological properties of new compounds sourcing from: natural products (algae, mushrooms, plants…), Medicinal Chemistry, Biotechnologies or from Agro-Food Industry.

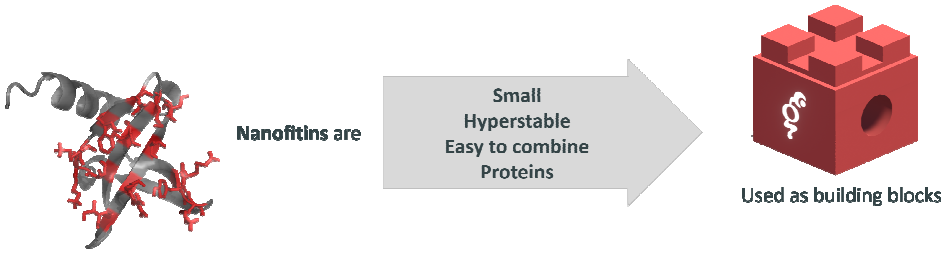
Exclude from the pipeline some of the compounds which would present toxicities over the further testing-procedures, thus enabling the prevention of unnecessary investments for companies.

In Vitro / HUMAN PRIMARY CELLS / **HIT Selection** / LEAD Triage / **PROFILING** / Valuation of Assets / **INDICATION** / Market

affilogic

Nanofitins®: small protein scaffolds for modular biotherapeutics

Affilogic is a private biotech company specialised in discovering, developing and combining Nanofitins® through early-stage collaborations with worldwide pharmaceutical leaders.



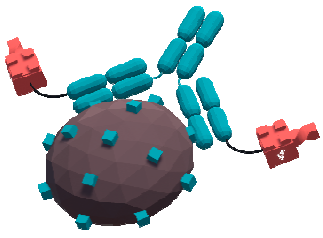
Each Nanofitin provides a unique function to the assembled molecule through its specific interaction with an element of the body. Affilogic has developed modules (i) controlling the residence time in the circulation, (ii) crossing membranes, (iii) targeting specific receptors (iv) penetrating into cells (v) generating toxicity in the cells thus invaded (vi) recruiting immune system (vii) inhibiting inflammatory cytokines ….

Nanofitin® combination Nanofitins® can be assembled in multimers, typically for a fast tumor-specific concentration of cooperative effectors against hallmarks of cancer. A vector Nanofitin confers a selective accumulation in the tumor micro-environment and effector Nanofitins interact with soluble targets or receptors (immune checkpoints pro-angiogenic growth factors, inflammatory cytokines…)

Radioimaging Affilogic is developing Nanofitins® directed against cancer biomarkers in conjugation with quickly decaying radio-isotopes. Due to the small size of the Nanofitins®, their plasmatic half-life is short so we obtain a high contrast in PET imaging only 2 hours after injection in mice. The limited recirculation of the radioactive agent in blood limits the potential toxicity and enables a simple handling of radioactive waste. The high scaffold stability and the absence of cysteine allows regio-selective conjugation.

Nanofitin® Conjugate: Drug and Nanoparticle Nanofitins® can be easily conjugated to other moieties (small molecule, biologics, nanoparticles) by genetic fusion or click chemistry (regioselective conjugation). Nanofitins® can be considered as a vector to increase target-specificity of a payload or enable BBB-crossing, intracellular targeting (PPI)…

Nanofitin®-antibody fusion Thanks to their small size, Nanofitins® can be plugged on an antibody at different locations, either as a single module or as an assembly, while still providing a minimal hindrance on the antibody that retains its functionality. Those plug-and-play constructions also display a manufacturing yield at least comparable to the antibody alone, or even better. The Nanofitin®-antibody fusions are able to bind the antibody target as well as the Nanofitin® target at the same time.



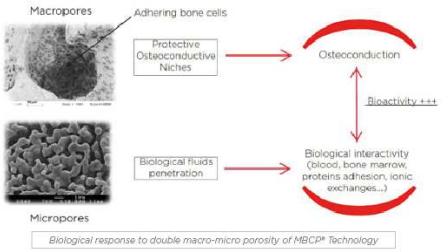
Biomatlante
Biologics Solutions

Backed by 23 years of experience in the development and manufacturing of Micro Macroporous Biphasic Calcium Phosphate bioceramics (MBCP® Technology), Biomatlante has been at the forefront of development of new synthetic bone graft matrices for bone regeneration to best suit the needs of surgeons and patients alike, since its foundation.

Based near Nantes, Western France, Biomatlante specializes as a world leader, in manufacturing synthetic bone regenerative technologies in orthopaedics, traumatological, spine and dental applications.

It markets its innovative products in more than 50 countries worldwide.
Biomatlante prides itself on staying abreast of an ever-evolving market, thus ensuring its products meet the demanding requirements of surgeons and healthcare companies around the globe.

Thanks to a robust research and development department, Biomatlante has been granted various patents and licenses covering both biomaterials and new associated technologies, based on its MBCP® Proprietary Technology.
Biomatlante quality management system is certified ISO 13485:2016 MDSAP



Biological response to double macro-micro porosity of MBCP® Technology

Optimum balance
between resorption and new bone formation

The MBCP® concept is determined by an optimum balance between resorption and new *in vivo* architecture bone tissue formation.
Its 3-D micro and macro structure enhances cell adhesion, proliferation and differentiation thus facilitating tissue regeneration.
regeneration.

Smart scaffold property of MBCP® Technologynew

From the MBCP® Technology Biomatlante develops a high potential synthetic bone substitute ‘‘smart scaffold’’ which not only promotes osteoconduction but also osteoinduction. These “smart scaffold” properties were clinically confirmed:

- REBORNE (orthopaedic and maxillofacial indications) is the first European, multi-centric clinical trial to prove the safety and efficacy after surgical implantation of MBCP®+ granules associated during surgery with autologous mesenchymal stromal cells expanded from bone marrow.
- MBCP®+ granules with adsorbed peptide B2A were found to be an effective graft extender/enhancer increasing fusion rates in a preclinical model.

The new therapeutic approaches with less invasive surgeries rely on the generation of injectable bone substitutes.
The first versions of moldable shapes from the MBCP® Technology were developed more than 10 years ago.

Biomatlante’s new technology & know-how

A new drug delivery system was designed and a versatile tissue engineering platform is currently in development.

- Drug delivery system: development of multiphasic matrices for the *in situ* delivery of active ingredients (anti-cancer, anti-resorption of bone formation promotors molecules).
- Tissue engineering platform: Freeze-Dried Bone Scaffold that brings together all the MBCP® Technology features and performances with handling and cohesive properties of the highest level ever reached.

For more information, visit our website: www.biomatalnte.com

PIRAMID

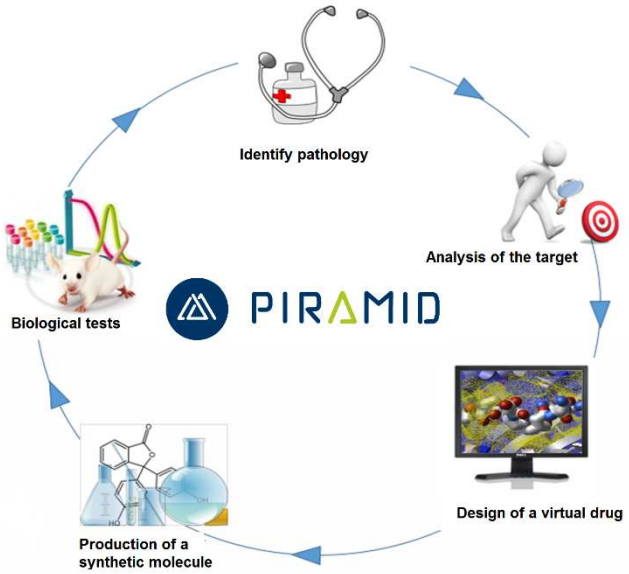
PROTEIN INTERACTIONS IN RATIONAL APPROACHES FOR MEDICINAL INNOVATIVE DRUGS

For more information, please visit our website:

www.piramid-research.fr

Protein Protein Interactions in Rational Approaches for Medicinal Innovative Drugs

The PIRAMID program (Protein Interactions in Rational Approaches for Medicinal Innovative Drugs) has been funded for 5 years by the Pays-de-la-Loire Region Research Council in the framework of the 2015 « *Dynamique Scientifique* » call.
This project merges together several regional research groups (7 laboratories, 11 teams corresponding to ~60 permanent researchers) covering multidisciplinary fields such as biology, chemistry and molecular modelling. The PIRAMID program, which grants 5 PhD and 4 post-doctoral positions, aims to design, in particular through a wide range of molecular modelling approaches, original inhibitors targeting selected protein-protein interactions (PPI). A special focus is put on the experimental approaches dedicated to the quantification of the intermolecular interactions involved in the targeted processes. The PIRAMID program addresses more specifically 5 different PPIs that have appeared as promising therapeutic targets for diseases such as cancer, cardiovascular pathologies and fungal diseases.



The PIRAMID program organizes or takes part to several events in order to shed light on the PIRAMID scientific research work. Indeed, some speakers recognized as experts at a national and international level and members of the PIRAMID consortium contribute to several Symposiums to present relevant aspects of their research linked to PPIs. Those kind of colloquiums are also an opportunity to emphasize the academic and industrial impact of the PIRAMID project.

PIRAMID project
Laboratory CEISAM
2 rue de la Houssinière
44322 Nantes Cedex 3

Société de Chimie Thérapeutique

European Journal of Medicinal Chemistry

Published under the auspices of the French "Société de Chimie Thérapeutique" (SCT)

More than 3000 papers are submitted each year and approximately 1000 are published.

The field is medicinal chemistry. The manuscript should therefore contain the synthesis of new compounds and their biological evaluation.

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Edited by Nicolas Moitessier

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Edited by Seyed Mohammad Nabavi, Rosanna Filosa, Pandima Devi Kasi

Current advances in cancer research: Therapeutics, Targets, and Chemical Biology
Edited by Sebatien Papot, Paola Barraja

Next call for papers:

Pharmacological approaches to cystic fibrosis
Edited by Dr. Luis Galietta and Dr Tiziano Bandiera

The impact factor of EJMC (4.519 in 2018) is one of the highest of all medicinal chemistry journals.

Prof. Hervé Galons
Université de Paris Descartes

Société de Chimie Thérapeutique

Upcoming events

Upcoming **events organized under the auspices of the SCT:**

One-day thematic symposium: "Drug Discovery in the RNA world"
December 11th, 2019, Paris

27th SCT Young Research Fellows Meeting (Journées de Jeunes Chercheurs, JJC)
February 5-7, 2020, Caen

56th International Conference on Medicinal Chemistry RICT 2020
July 1-3, 2020, Bordeaux, France

For more information: www.sct-asso.fr

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