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TARGETS AND DRUGS FOR  
INFECTIOUS DISEASES AND  
IMMUNITY



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## I- CAREER AND EDUCATION

Medicinal Chemistry department – Team UR 1155 IICiMed (Targets and Drugs for Infectious Diseases and Immunity) – School of Pharmacy – University of Nantes

**January 2017:** Deputy director of IICiMed research group and Head of Medicinal Chemistry department

**September 2013:** Professor of Organic Chemistry (1<sup>st</sup> class **September 2016** & exceptional class 1 **September 2022**)

**June 2007:** Habilitation in Medicinal Chemistry – Design, synthesis and biological evaluation of azaheterocyclic compounds

**September 2001:** Assistant Professor in Organic Chemistry

**January 2000-August 2001:** Lecturer in Organic Chemistry

**November 1999:** PhD Thesis in Medicinal Chemistry – Synthesis and biological evaluation of indole derivatives as immunosuppressive and anti-cancer agents

**June 1996:** Master's degree in Pharmacochimistry

## II- TEACHING – School of Pharmacy – Nantes

Organic Chemistry, Medicinal Chemistry, Spectroscopy (NMR, MS, IR) to Pharmacy students (Pharm. D.) from the first to the fifth year of the cursus and to Master students (MSc).

## III- ADMINISTRATIVE RESPONSIBILITIES

- ✓ Vice-Dean for Research.
- ✓ Member of the Management Board.
- ✓ Member of the Scientific Council of the Nantes University Healthcare Division.
- ✓ Reviewer in the promotion commission for BIATSS staff.
- ✓ Deputy President of the validation committee for the Master.
- ✓ Jury member of Master 2 (MSc) "Molecular and Medicinal Chemistry" and Master 2 (MSc) "Polymers and Active Ingredients of Natural Origin".
- ✓ Deputy general secretary of the Association of Teachers in Organic Chemistry belonging to Faculties of Pharmacy ([AECOP](#)).
- ✓ Treasurer of the French Medicinal Chemistry Society ([SCT](#)).

## IV- RESEARCH SUPERVISION

**Research interests:** Design, synthesis and biological evaluation of heterocyclic compounds for therapeutic purposes (mycology, parasitology, bacteriology and cancer). Inhibitors of kinase signaling pathways. ADMET properties of molecules of biological interest.

- ✓ PhD thesis supervisions (19): industry collaborations (Aeterna Zentaris-Germany and Servier-France) and academic collaborations (Parasitology and Medical Mycology department of IICiMed team and international joint supervisions of a PhD thesis: Federal University of Pernambuco, Recife – Brazil, Federal University of Alagoas, Maceió – Brazil, National Polytechnic Institute of Mexico City – Mexico, Autonomous University of Nuevo León, Monterrey – Mexico, Assane Seck University of Ziguinchor, Senegal and University of Sfax, Tunisia).
- ✓ Masters 2 (MSc) (16).
- ✓ Postdoctoral researchers (11).
- ✓ Bachelor's degrees (BSc) and Masters 1 (MSc) (19).
- ✓ Professional training courses (14).
- ✓ Training for research introduction, Faculty of Pharmacy (37).
- ✓ Foreign students (7): 1 MSc, University of Hamburg, Germany. 1 PhD student, University College Cork, Ireland. 1 PhD student, Sfax University, Tunisia. 1 MSc, University of Bologna, Italy. 2 MSc, University of Cagliari, Sardinia - Italy 1 Invited researcher, Ege University – İzmir, Turkey.

## V- PUBLICATIONS, PATENTS and SCIENTIFIC PRODUCTION

- ✓ 77 international publications (*h*-index: 21).
- ✓ 4 international patents.
- ✓ 75 posters.
- ✓ 32 conferences as invited speaker & 28 oral communications.

## VI- MISCELLANEOUS ACTIVITIES AND RESPONSIBILITIES

### 1- International research collaborations

#### ✓ **CAPES-COFECUB 2015/2018 & 2023/2026 Programme – Brazil**

The French Committee for the Evaluation of Academic and Scientific Cooperation with Brazil (COFECUB) in partnership with the CAPES (Coordenação de Aperfeiçoamento do Pessoal de Nível Superior, the Federal Agency of Support and Evaluation of Postgraduate Education) has selected the project submitted jointly by the team IICiMed (Prof. Pascal Marchand, University of Nantes - NU) and the Department of Antibiotics, Biological Sciences Center (Prof. Teresinha Silva, Federal University of Pernambuco - UFPE, Recife, Brazil). The research program, with duration of 4 years, entitled "Discovery of novel thiazolinones, thiazolidinones and quinones for the treatment of infectious diseases and cancer" is achieved through the mobility of 8 researchers, 5 joint supervision PhD students and 1 postdoctoral researcher, chemists and biologists. *Funding of 5 doctoral fellowships and 1-year postdoctoral fellowship + €11,180 for mobility.* The researchers involved were able to give conferences, lectures at doctoral schools and research seminars at NU and UFPE.

A new **CAPES-COFECUB 2023-2026 project** has been selected for funding with the same terms and conditions and the involvement of 3 other Brazilian universities:

- Universidade Estadual da Paraíba – UEPB João Pessoa (Prof. Francisco Jaime B. Mendonça Junior)
- Universidade Federal de Alagoas – UFAL Maceió (Prof. Thiago Aquino)
- Universidade Federal do Delta do Parnaíba – UFDPar Parnaíba (Prof. Dr. Klinger Antonio da Franca Rodrigues)

This project concerns the "Design, synthesis and biological evaluation of new heterocyclic antileishmanial compounds" and will see the funding of 2 co-supervised theses or 1 Brazilian post-doctorate per year.

✓ **Collaboration University of Toronto since 2021 – Canada**

The imidazo[1,2-*a*]pyrazine series developed as part of antiparasitic chemotherapy projects are finding an application in medical mycology through the development of *Candida albicans* Yck2 inhibitors (fungal casein kinase 1, CK1), which is involved in resistance, virulence, cell morphogenesis, polarity and cytokinesis. Yck2 therefore regulates the pathogenesis of *C. albicans* and is a target protein of interest for a drug discovery project in the field of antifungals.

(Prof. L. E. Cowen, <http://individual.utoronto.ca/cowen/>).

✓ **Collaboration Ege University<sup>1</sup>, Izmir & Izmir Katip Celebi University<sup>2</sup> since 2023 – Turkey**

As part of the COST ACTION CA21111 - *One Health drugs against parasitic vector borne diseases in Europe and beyond (OneHealthdrugs)*, Dr. Gulsah Bayraktar<sup>1</sup> has been awarded a mobility grant (Short-Term Scientific Mission) as a visiting researcher in the laboratory from June 9 to July 17, **2023**. A collaboration aimed at developing new heterocyclic compounds with antileishmanial properties has been initiated, also involving Prof. Huseyin Istanbulu<sup>2</sup> and Dr. Merve Saylam<sup>2</sup>.

✓ **Collaboration Assane Seck University of Ziguinchor 2021-2025 – Senegal**

The research work of the IICiMed team in the fight against leishmaniasis allowed the development of a collaborative project with the Laboratory of Chemistry and Physics of Materials (LCPM) of Prof. A. Gassama from the Assane Seck University of Ziguinchor. A thesis in medicinal chemistry under joint supervision (from May **2021**) focuses on the design of new bicyclic piperidine based antileishmanial compounds. *Funding of a doctoral scholarship from the French Cooperation.*

✓ **Collaboration University of Sfax since 2021 – Tunisia**

A collaborative project was initiated with Prof. Noureddine Allouche at the School of Science of the University of Sfax. The mobility of a Tunisian PhD student to the laboratory, on two occasions, enabled the development of a research project on the derivatisation of compounds extracted from *Olea europaea* for anti-infective purposes.

## 2- National research networks

✓ **ANR PRC TEXLEISH Nov.2021-Oct. 2026, UR 1155 – IICiMed, Pasteur – Paris et BioCIS UMR CNRS 8076 – Châtenay-Malabry**

Leishmaniasis is a severe public health issue and the current treatments are toxic, costly or lead to parasite resistance, thus there is an urgent need for new drugs. The TEXLEISH consortium proposes a new paradigm: inhibiting host-parasite interactions, through targeting *Leishmania* exoproteome, in order to limit the risk of parasite resistance. TEXLEISH synergizes important expertise in medicinal chemistry, kinase-based drug discovery, parasite biology and in vivo testing to optimize **CTN1122**, a potent antileishmanial lead compound, into an orally active, safe, effective drug candidate. This process involves iterative rounds of chemical synthesis, assessment of its efficacy, toxicity, in vitro bioavailability, in vivo efficiency on animal models and the study of its mechanism of action. The TEXLEISH project will constitute a proof of concept to validate pathogen exoproteome as the future of target-based strategies.

This project, of which I am the leader for 4 years, benefits from ANR (French National Research Agency)/Region funding (Targeting host-parasite interactions through the inhibition of EXcreted *LEISHmania* casein kinase 1). It brings together 3 laboratories with 8 EC, 1 CR, 1 IR, 2 technicians, 1 chemistry doctoral student, 3 Master 2 chemistry student, and it will allow the recruitment of 1 biology post-doctoral fellow, 1 MolMod engineer, 2 biology technicians. *Funding ANR 747 k€ and Pays de la Loire Region 50 k€ (AAP National Trajectory of Loire Research).* <https://anr.fr/Projet-ANR-21-CE18-0026>.

✓ **Cancéropôle Grand Ouest**

IICiMed Laboratory collaborates with the teams of "Cancéropôle Grand Ouest" through its integration in the network "Seafood valorisation in cancer" and can access to the kinases evaluation platform KISSf of Roscoff, France (Dr S. Ruchaud, Dr S. Bach, CNRS USR3151).

### 3- European research networks

- ✓ Member of "Groupement des Pharmacochimistes de l'Arc Atlantique (GP2A)" from **1997** and President from September **2017** to August **2024**, rebranded GP2A "Group for the Promotion of Pharmaceutical chemistry in Academia" ([www.gp2a.org](http://www.gp2a.org)).
- ✓ Local coordinator of Paul Ehrlich MedChem Euro-PhD Network at Nantes Université from **2021** (<http://www.pehrlichmedchem.eu>).
- ✓ Member of the European programme COST ACTION CA21111 - One Health drugs against parasitic vector borne diseases in Europe and beyond (OneHealthdrugs) since **2022** (<https://www.cost.eu/actions/CA21111/>).

### 4- Industrial research collaborations

- ✓ Industrial collaborations for PhD and postdoctoral research projects (Æterna Zentaris-Germany from Oct. **2002** to Dec. **2009** and Servier-France from Oct. **2003** to Nov. **2011**).

### 5- Scientific societies

- ✓ Member of "Société de Chimie Thérapeutique" from **2002**.
- ✓ Member of "Association des Enseignants de Chimie Organique" from **2002**.
- ✓ Member of "Société Française de Chimie" from **2003**.

### 6- Expert reports

- ✓ Manuscript reviewer for international scientific journals.
- ✓ Expert member of the French National Research Agency (ANR) in **2022**, **2023** & **2024**, for the scientific evaluation committee 18 "Biomedical Innovation".
- ✓ Expert member of Hceres for the evaluation of research units in **2024** & **2026**.
- ✓ Expert member of COFECUB - CAPES France-Brazil **2024**.
- ✓ Guest expert for the Franco-Mexican CONACYT files as part of the call for projects "Frontier Science" **2019** & **2020**.
- ✓ Jury member for the recruitment of Assistant Professors and Professors.
- ✓ Promotion committee **2023**, University Professorship - CNU 86-87 Paris-Saclay University & Bourgogne University.
- ✓ *Examinator of 18 PhD thesis and President of the jury*
- ✓ *Reviewer of 30 PhD thesis*

### 7- Organisation of congress

- ✓ President of the organising committee – 22<sup>th</sup> European Conference of the Group of Medicinal Chemists of the Atlantic Arc (GP2A), Nantes, August 28-29, **2014**. 33<sup>rd</sup> Annual GP2A Conference, Nantes, June 11-13, **2025**.
- ✓ President of the local organising committee – 55<sup>th</sup> International Conference on Medicinal Chemistry, Nantes, July 3-5, **2019** ([www.rict2019.org](http://www.rict2019.org)).
- ✓ Vice-Chair of the organising committee – [1<sup>st</sup> Brazil-France Symposium on Medicinal Chemistry](#), Federal University of Pernambuco, Recife – Brazil, December 2-4, **2019** & [2<sup>nd</sup> Brazil-France Symposium on Medicinal Chemistry](#), Federal University of Paraíba, João Pessoa – Brazil, October 26-28, **2023**.
- ✓ Participation in the organization of the 11<sup>th</sup> symposium of the National Antiparasitic and Antifungal Consortium (CaPF), in Nantes June 2-3, **2022**, as part of the 2022 scientific days of Nantes University.
- ✓ Responsible for the local organizing committee of the 29<sup>th</sup> SCT Young Research Fellows Meeting, in Nantes July 4-6, **2022**.