

Detailed job description and selection criteria

Job title	Postdoctoral Researcher in Chemical Proteomics
Department	BioCIS – CNRS, CY Cergy Paris University, Univ. Paris-Saclay Institut Pasteur
Location	Paris (14th arr) and Neuville sur Oise, Ile-de-France, France
Grade and salary	€ 40 656 p.a. gross (indicative average) € 2992 to 4204 p. m. (indicative range)
Hours	Full-time research position No teaching duties
Contract type	Fixed-term for 12 months
Reporting to	Dr. Simon NADAL, CY Cergy Paris University (CYU) Dr. Martial REY, Institut Pasteur
Vacancy reference	UMR8076-SIMNAD-002
Additional information	The post is split between two research institutes at two sites : 2/3 rd at BioCIS – Chemical Biology Team, CYU, Neuville sur Oise 1/3 rd at Biological Mass Spectrometry group, Institut Pasteur Paris
Link to apply	https://emploi.cnrs.fr/Offres/CDD/UMR8076-SIMNAD-002/Default.aspx

This position is funded by:

I-SITE



PCSI



Overview of the role

- To design and generate synthetic proteins with defined post-translational modifications and use them in chemical biology and chemical proteomics experiments
- To apply and develop novel mass spectrometry-based proteomics workflows using synthetic proteins for the discovery of epigenetic mechanisms involved in cancer progression (e.g. multiple myeloma)
- To engage in experimental and translational research in identifying novel molecular markers and drug targets of diseases (e.g. multiple myeloma) and in understanding the molecular pathways involved in the onset and evolution of this disease.
- To liaise between the CYU BioCIS lab (Nadal) and Pasteur MS lab (Rey, Chamot-Rooke) and coordinate proteomics experiments.
- To assist in the day-to-day management of the laboratory.
- To aid fellow scientists and graduate students working in the theme related projects.
- Communicate and report on a regular basis with the coordinating PIs, present at internal seminars, keep accurate scientific records, disseminate findings at conferences and in publications

Responsibilities/duties

- Express and purify proteins of interest recombinantly in *E. Coli*
- Chemically modify proteins of interest through posttranslational mutagenesis
- Synthetise chemical reagents used for mutagenesis
- Perform experiments in chemical proteomics and crosslinking mass spectrometry (MS)
- Participate in collaborative projects with external institutions or small research facilities offering specialist expertise, instrumentation or software in proteomics or molecular biophysics
- Develop and implement MS-based proteomics workflows in close collaboration with the Pasteur Mass Spectrometry for Biology Lab (Julia Chamot-Rooke group) and the Pasteur Proteomics Platform.
- Develop and optimize chemical proteomics protocols for a range of biological material such as cell lines, serum/plasma and biopsy tissues.
- Utilise biochemical techniques such as western blotting, FACS, ELISAs to investigate in depth molecular mechanisms, as well as human cell culture.
- Test hypotheses and analyse experimental data from a variety of sources including bioinformatics software, reviewing and refining working hypotheses as appropriate
- Accurately record experimental findings and effectively communicate these findings in the wider research community.
- Collaborate in the preparation of scientific reports and journal articles and present papers and posters
- Comply with quality standards and partake in external and internal quality control schemes to ensure that laboratory quality standards are met.
- Develop an in-depth knowledge of recent scientific developments in the fields of chemical biology and chemical proteomics and undertake supplementary training to develop both knowledge and skills.
- To attend appropriate scientific seminars, meetings and training courses in novel technologies and experimental methods. Act as a source of information and advice to other members of the group on scientific protocols and experimental techniques
- To participate in the education and training of other staff as necessary and appropriate.
- To supervise and provide training and management to PhD students and research assistants.
- Complex liaison and networking to ensure the smooth running and coordination of multiple research projects between the two collaborating labs

Location

The position is shared 2/3 with UMR 8076 BioCIS CNRS-UPSaclay-CYU and 1/3 with UAR 2024 MSBio CNRS-Pasteur. You will be a member of Team 5 "Biological Chemistry" of UMR BioCIS, located in Neuville sur Oise (95) and whose main supervisory body is CY Cergy Paris Université, your primary affiliation. Through the UMR, you will also have access to the shared resources of the CNRS and the Université Paris-Saclay. You will also be a visiting scientist at the Mass Spectrometry for Biology unit of the Institut Pasteur, which hosts the proteomics platform and is located in the 14th district of Paris.

Hazard-specific / Safety-critical duties

This job includes the following hazards or safety-critical activities which will require successful pre-employment health screening through our Occupational Health Service (*médecin du travail*) before the successful candidate will be allowed to start laboratory work:

- Working with serum, human cell lines and human tissues in BSL-2 laboratories
- Working with genetic material and microorganisms in BSL-1 laboratories
- Working with complex instrumentation under high voltage (mass spectrometers)
- Work with organic solvents, chemical products and compressed gas
- Work with any substance which has any of the following pictograms on their MSDS:



Selection criteria

Essential

- PhD in chemical biology, biochemistry or cell biology and a proven track record in interdisciplinary research. We also welcome applications from candidates with a PhD in organic chemistry and a strong desire to orient their career towards the biological sciences
- Previous knowledge in proteomics related methods including sample preparation for mass spectrometry analysis
- A responsible nature with a methodical and careful approach to working in the laboratory.
- The ability to communicate results clearly and to discuss scientific ideas.
- The ability for self-motivation, to organize work-time efficiently and to perform experiments accurately using a defined protocol.
- An active interest in undertaking scientific research and motivation to participate in courses and training sessions.
- Experience and understanding of Good Laboratory Practice.

Desirable

- Familiarity with methods used for mass spectrometry-based proteomics, such as label-free quantitative proteomics or crosslinking mass spectrometry.
- Previous experience in protein modification chemistry or the incorporation of unnatural amino acids into proteins
- Previous experience in human / mammalian cell culture
- A flair to work with analytical equipment, and the ability to teach and train other researchers in this area.
- Bioinformatics: familiarity with proteomics software or "omics" data analysis

About CY Cergy Paris University

CY Cergy Paris University is a young university with the ambition to become one of France's leading research universities. Created through the fusion of the former university of Cergy-Pontoise, the renowned ESSEC business school and several local schools and research institutes, it offers its students and researchers a young, dynamic and inclusive environment focussed on innovation and academic excellence. Freedom of thought, creative thinking and societal challenges are at the heart of its projects, anchored in the "Design your Life" motto. Despite its comparably small size, its rise through the ranks has already shaken up the French university landscape. CYU has been very successful in attracting national and international funding: it is part of the French Government's Excellence Initiative, the EUTOPIA European university network; the university has received funding for several large research equipments and sets-up an average of 6 new public-private partnerships each year. The university has obtained the HR Excellence in research (HRS4R) label.

The science campus of CYU is located in Neuville sur Oise, a 40 min public transport commute from Paris central Chatelet station (RER A train). The campus is located directly at the train station "Neuville Université". The campus hosts 5 large research units (UMRs) in chemistry and biology, as well as the following platforms / SRFs : PeptLab (peptide synthesis), Cosmetomics (cell culture), CY Microscopies (advanced microscopy and analytics SRF), LaserInnov (laser technology).

To "see why" people are talking about our university, visit:

<https://www.cyu.fr/universite/media-et-communication/actualites/cy-universite>

The BioCIS research unit – UMR 8076

The CNRS BioCIS UMR (Biomolecules: Design, Isolation, Synthesis) is a large research unit located within the Pharmacy Department (Paris-Saclay University) and the Department of Chemistry at CY Cergy Paris University and affiliated to the French National Center for Scientific Research (CNRS). It has expertise in the field of biologically active natural substances, the development of synthesis methodologies, the rational design of new chemical entities (NCEs) for therapeutic purposes and the development of novel chemical biology tools. Its research efforts in therapeutic innovation focus primarily on neurodegenerative diseases and rare diseases (PAH, epilepsies), anti-infectious, antiparasitic and anti-tumour agents.

BioCIS consists of five teams: Natural Product Chemistry (Saclay) ; Medicinal Chemistry (Saclay) ; Organofluorine chemistry (Saclay) ; Antiparasitic molecules (Saclay) ; **Chemical Biology (CYU)**. BioCIS is a constituting member of the **IPSIT Drug Discovery Institute** providing access to state-of-the-art preclinical drug discovery platforms (=SRFs).

For more information please visit: <https://www.biocis.universite-paris-saclay.fr> and <https://biocis.cyu.fr> and <http://ipsit.universite-paris-saclay.fr/>

The Nadal research group

The Nadal research group develops chemical biology and chemical proteomics methods for biomedical research, with an emphasis on multiple myeloma. Our expertise relies on the generation of synthetic proteins carrying defined post-translational modifications through posttranslational chemical mutagenesis and their use in biochemical assays. We further synthesise reagents for proteomics (e.g. small molecule or protein-based affinity matrices) and develop tailored tandem mass spectrometry methods.

For more information visit: www.nadal-lab.eu

About Institut Pasteur

The Institut Pasteur is a world-renowned institution at the forefront of scientific research and discovery. Established in 1887 by the pioneering scientist Louis Pasteur, the institute boasts a storied history of groundbreaking achievements in microbiology, immunology, and infectious diseases. With a commitment to advancing global health and well-being, the Institut Pasteur provides an exceptional environment for scientists, offering state-of-the-art laboratories and access to extensive resources that empower researchers to make transformative discoveries.

Joining the Institut Pasteur means becoming part of a community dedicated to pushing the boundaries of scientific knowledge and improving public health on a global scale. With a rich tradition of excellence and a commitment to nurturing talent, the institute offers numerous opportunities for professional growth and development. The institute has obtained the HR Excellence in research (HRS4R) label.

For more information please visit <https://www.pasteur.fr/en/careers/why-join-us>

The Department of Structural Biology and Chemistry at Pasteur

Fellows in the Structural Biology and Chemistry Department study complex biological systems through a range of integrated approaches and collaborate with scientists from all other departments at Pasteur. Our department has built a strong focus on structural biology, chemistry (carbohydrates, peptides, proteins, heterocycles and nucleic acids), molecular biophysics, cellular physiology and in silico simulations.

Our research relies on advanced core facilities housed within a central hub of 8 technological platforms:

<https://research.pasteur.fr/en/department/structural-biology-chemistry/>

The Mass Spectrometry for Biology research group – UAR 2024

The Mass Spectrometry for Biology Laboratory is a mixed Institut Pasteur/CNRS Unit (UAR2024) and is headed by Julia Chamot-Rooke (DR1 CNRS). The lab includes the Pasteur proteomics platform and a research group, dedicated to the development of top-down proteomics and structural mass spectrometry. The laboratory is part of the C2RT (Center or Technological Research and Ressources) and of the Structural Biology and Chemistry department. It is IBISA labeled since 2012 and ISO 9001:2015 certified since April 2018. The platform, headed by Dr. Mariette Matondo, provides service and collaboration in bottom-up proteomics. It is open to external users. The research group develops four main axes: Top-down proteomics, crosslinking MS, Native MS, Hydrogen-Deuterium Exchange MS.

<https://research.pasteur.fr/en/team/mass-spectrometry-for-biology/>

Information for candidates

Pre-employment screening

Please note that the appointment of the successful candidate will be subject to standard pre-employment screening, as applicable to the post. This will include right-to-work, proof of identity and references.

Occupational Health consultation (*Médecin du Travail*)

Please note that in order to conduct laboratory work in France, a mandatory doctor's appointment with the Occupational Health Service (French: médecin du travail) is required by law. This assessment will be carried out by the on-campus university doctor shortly after the start of the contract.

Occupational Health Tracking (*Fiche d'exposition aux risques*)

Researchers working in the BioCIS research unit are required by law to track exposure to carcinogenic, mutagenic or reprotoxic (CMR) chemicals. Well-established Standard Operating Procedures are followed to monitor exposure and strict adherence to risk mitigation. This information is archived for every researcher.

Data Privacy

Please note that any personal data submitted to the CNRS and the University as part of the job application process will be processed in accordance with the GDPR. For further information, please see the University's Privacy Notice and Policy on Data Protection at:

<https://emploi.cnrs.fr/DonneesPersonnelles.aspx>

<https://www.cyu.fr/en/legal-notice>

Equality of Opportunity

Entry into employment with the University and progression within employment will be determined only by personal merit and the application of criteria which are related to the duties of each particular post and the relevant salary structure. In all cases, ability to perform the job will be the primary consideration. No applicant or member of staff shall be discriminated against because of age, disability, gender reassignment, marriage or civil partnership, pregnancy or maternity, race, religion or belief, sex, or sexual orientation.

For any general questions relating to the recruitment process and policies at CY Cergy Paris Université, please contact: recrutement@cyu.fr

Both institutions have obtained the HR Excellence in Research label.



HR EXCELLENCE IN RESEARCH

Benefits of working at CY Cergy Paris University & Institut Pasteur

University sports facilities

CYU staff can use the University Sports Centre in Cergy discounted rates, including a fitness centre, powerlifting room, and swimming pool. See: www.cyu.fr/campus/campus-sportif
Members of Institut Pasteur can participate in activities of the ASIP sports club and its gym.

Information for international staff

The University hosts the welcome office “Acc&ss Paris-Nord” on the Neuville Science Campus (EURAXESS accredited). It offers personalised support and advice to international staff, including help with administrative formalities and visas.

See <https://access.ciup.fr/access-paris-nord/> and www.fnak.fr/en

Further, CYU and the city of Cergy-Pontoise host an International Welcome Desk with a Whatsapp community: www.cyu.fr/campus/international-welcome-desk-2023

Social security in France

Employment in France automatically entitles you to access welfare, healthcare and social services.

See <https://www.campusfrance.org/en/social-security-doctoral-students-researchers>

Disabled staff

We are committed to supporting members of staff with disabilities or long-term health conditions. For further details, including information about how to make contact, in confidence, with the University’s Staff Disability Advisor, see www.cyu.fr/campus/au-quotidien/accompagnement-du-handicap

Campus life and staff networks

The University has a number of staff networks, clubs and societies. An overview can be found at: www.cyu.fr/campus

Institut Pasteur’s association for young researchers (StaPa) organises social and scientific activities, the institute further hosts its own music and theatre activities (“La Pasteurale”).

Commuter ticket

The University takes over 50% of monthly or yearly public transport commuter subscription (This position requires Pass Navigo Zones 1-5)

<https://www.iledefrance-mobilites.fr/en/tickets-fares/detail/navigo-monthly-ticket>

Personalised Career Support

Institut Pasteur provides extensive career development services, mentoring and coaching:

<https://www.pasteur.fr/en/careers/why-join-us/get-personalized-career-support?language=fr>

Additional benefits

The University provides several other support services and alumni networks. Local childcare services, organised by the city councils, are available in proximity of both workplaces.