Innovative solutions for the design, synthesis and optimisation of peptides and proteins

PeptLab

Special Lab and Special People
dedicated to your peptides

Services
Training
Expert team support

platform cy

Peptides are at the heart of research and scientific advances in several major medical, pharmaceutical and cosmetic industries.
The CY PeptLab platform offers private and public sector laboratories innovative solutions for the design, synthesis, and purification of peptides and proteins and their analogs in the fields of health, well-being, food, and heritage.

Professor A. M. Papini (founder and first director of the platform) created the CY PeptLab platform thanks to the award of a Chair of Excellence by the French National Research Agency (ANR 09-CEXC-013-01, PepKit project) which was incubated in the biological chemistry team (BCT*) of the BioCIS laboratory of CY Cergy Paris University.

CY PeptLab has:
- state-of-the-art research equipment,
- unique expertise in peptide synthesis and characterization.

The advantages
of CY PeptLab

The CY PeptLab platform is committed to offer its expertise and knowhow to support industrials in implementing research and development (R&D) projects for new peptide-based molecules.

CY PeptLab offers you:
- full and customized support devoted to your projects, the guarantee of fast implementation, the assurance of recognized quality, a high level of advice and proactivity in the follow-up of projects;
- a complete offer allowing us to propose the most suitable solution to your problems;
- the design and optimization of your peptide synthesis strategies;
- the development of an analysis methodology specific to your samples;
- customized training on state-of-the-art equipment.

CY PeptLab offers personalized support to private and academy laboratories with a high level of expertise and proactivity. Our mission is to create links between academic know-how and the needs of society by relying on our knowledge and a network of state-of-the-art equipment.

EElisa Peroni, platform director

* BCT-Team of chemical biology of BioCIS
This team includes researchers working on biomolecules for health.
BCT works on developing innovative synthetic approaches (exotic amino acids, fluorinated compounds,nucleosides, glycopeptides, etc.), the control of peptide structure, and biologically active molecules.

Services

CY PeptLab offers you high-performance equipment and the expertise of our specialists to carry out:

- Design, synthesis, and purification of custom peptides: modified peptides, cyclic peptides, labeled peptides...
- Structure-activity relationship (SAR) studies: minimum active sequence determination, Ala-scan...
- Optimisation of your active peptides: design & synthesis of analogs to improve stability, solubility, or reduce the production costs of your peptides of interest...
- Analytical reports (UPLC/MS analyses)
- Stability studies, solubility studies
- Development of analytical methods for : identification and quantification of metabolites, surfactants, amino acids, proteins, pollutants. identification and quantification of antibodies by ELISA test. Characterization of molecules (mass spectrometry, NMR, UV, DEDL)

CY PeptLab provides you with the platform's equipment and the corresponding expertise to promote technology transfer

Training course (theory & practice)meeting your needs:
- peptide synthesizers
- high and medium pressure chromatography systems coupled with different detectors (UV, DEDL, MS)
- Training dedicated to academy and industry

CY PeptLab offers you high performance equipment

Peptide synthesis

Possible application in the fields of:

- environment
- chemistry/ biochemistry
- medical
- food industry
- cosmetics
- materials

ZOOM ON

CUSTOM SYNTHESIS

CY PeptLab. Since 10 years at CY Cergy Paris University.
Our know-how for the production of your peptides:

- **HPLC purity: up to 98%,**
- **from 3 to 70 amino acids,**
- **unlimited choices of chemical modifications.**

Examples of modification:
- acetylation, amidation, phosphorylation, glycosylation ;
- introduction of non-proteinogenic amino acids, nonnatural amino acids... ;
- cyclisation: disulphide bridge, lactam, triazole, dicarbanalogues... ;
- coupling of fluorescent probes (FITC, rhodamine, dansyl, MCA, Alexa, TAMRA...).

GOOD TO KNOW

With the support of the Île-de-France region, CY PeptLab is scaling up and becoming a key player in large-scale peptide synthesis using a microwave strategy

LIBERTY PRO™ & LIBERTY BLUE™

Liberty™ automated peptide synthesizers have been developed for solid-phase peptide synthesis. They allow the production of peptides with a very high purity grade thanks to their unique methodologies based on microwave energy. They also feature accurate internal temperature control. The difference between the two types of equipment is that the Liberty Pro™ allows for large-scale (kg) production, while the Liberty Blue™ remains focused on lower quantity (mg). This equipment meets your needs to synthesize bioactive peptides in fields such as cosmetics, the environment, agrifood, and medical.

Liquid chromatography systems

Possible application in the fields of:

- safety
- environment
- chemistry/ biochemistry
- medical
- food industry
- cosmetics

SEMI-PREPARATIVE HPLC (WATERS)

Preparative HPLC chromatography plays an essential role in applications where compounds need to be synthesised, identified, isolated, purified, characterised, screened and tested. The semi-Prep purification system (Waters) is fully automated and driven by a UV detection system (2 wavelengths simultaneously). This equipment meets your needs for the purification and isolation of biomolecules such as proteins, peptides and polymers.

UPLC/MS (ULTRA PERFORMANCE LIQUID CHROMATOGRAPHY) COUPLED WITH A 3100 MASS SPECTROMETER (WATERS)

The ACQUITY UPLC system significantly reduces the time and cost required to analyse a sample, while ensuring higher quality results. UPLC technology is extremely robust, reliable and reproducible. The ACQUITY UPLC system differs from others thanks to hybrid particles smaller than 2 microns in size which offers significant advantages over HPLC systems with standard particle size columns. The ACQUITY UPLC system is coupled to a TUV detector and a single quadrupole electrospray ionisation mass spectrometer.
The system provides unique, complete solutions for all areas and applications including: food safety, bioanalysis, clinical studies, metabolite identification, method development, open access and routine analysis.

COMBIFLASH EZ PREP (TELEDYNE ISCO)

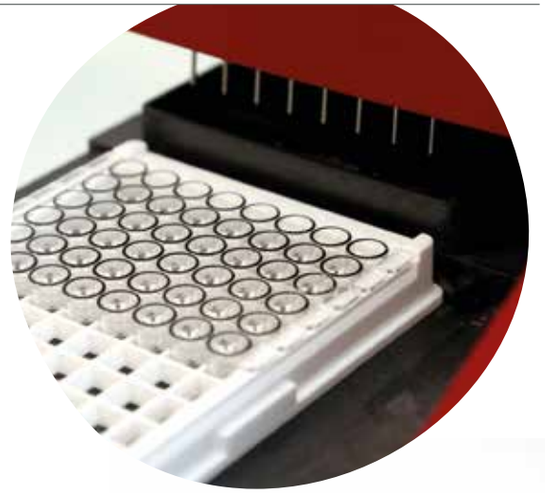
The Teledyne ISCO CombiFlash EZ Prep system is a dual function purification system that allows the user to perform either flash purification or preparative ones on the same instrument. Eliminating the need for two separate systems, the EZ Prep system offers the flexibility to easily switch between Flash and HPLC Prep modes, without compromising performance. A UV detector and a DEDL detector are coupled to this system.

Biological tests

The Hydroflex and Sunrise UV reader equipment are dedicated to the development of biomolecule detection tests.

HYDROFLEX™

It can automatically filter, separate and wash microplates. It enables automated vacuum filtration, bead separation and plate washing, increases productivity and provides reliable results for a range of applications in 96-well format, magnetic bead assays, ELISA assays and protein assays.



Tecan's Sunrise absorbance microplate reader offers all the functionality needed for numerous photometric applications, including advanced 12-channel optics for fast, multichannel absorbance reading of ELISAs, a temperature control function for enzyme kinetic assays, and a tunable wavelength function for wavelength scanning. This equipment meets your needs for Molecular Analysis & Characterisation in cosmetics and medical.

A training offer to meet your needs

The PeptLab team proposes a training offer specially designed to meet your needs, for both academics and industry:

- **training in the use of peptide synthesizers,**
- **training in the use of high and medium pressure chromatography systems coupled with different detectors (UV, DEDL, MS).**

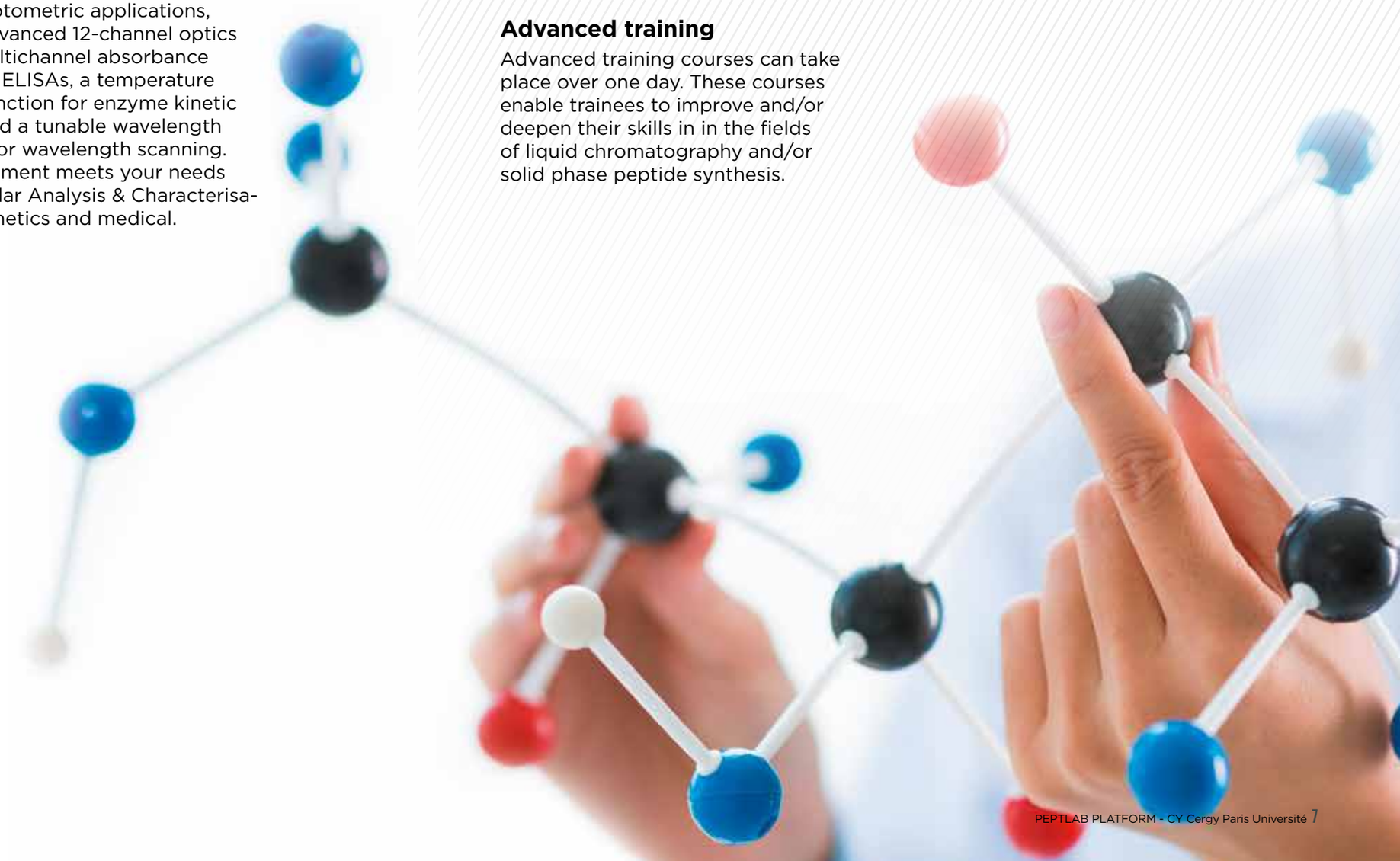
You will be assisted by an engineer from the platform, who will put his expertise at your disposal. The level of training is determined in advance with the client. The initial training courses are dedicated to people who wish to acquire the bases, while the advanced training courses are dedicated to people who already use these techniques but who wish to improve their knowledge or acquire new ones.

Initial training

Initial training courses last a minimum of two days. They include a theoretical part (25%) and a practical part (75%) enabling trainees to acquire good practices in the most common modes.

Advanced training

Advanced training courses can take place over one day. These courses enable trainees to improve and/or deepen their skills in in the fields of liquid chromatography and/or solid phase peptide synthesis.



They rely on us

Regulaxis
Synthesis, analysis and purification of biologically active peptides.

Laboratoire GBCM, CNAM
Design, synthesis, analysis and purification of peptides.
Coupling of peptides with immunogenic carrier proteins
for the development of vaccines.

Université Paris Descartes
Synthesis, analysis and purification of peptides.

Université Paris Saclay
Services and training for the BioCIS Saclay laboratory.

NYCO
Mass spectrometry of oils.

HIPI
Development of surfactant assays.

Partners

With the support of the Île-de-France region and the Agence nationale de la recherche, the CY PeptLab platform has obtained significant financial support. In particular, the Île-de-France region enabled it to acquire the Liberty Pro™ synthesizer (CEM, Charlottesville, VA, USA) in 2018, worth €331K. The Agence nationale de la recherche (French National Research Agency) provided financial support of one million euros between 2009 and 2013 within the framework of the Chair of Excellence, in particular to finance technical equipment originally housed in the BioCIS laboratory and since 2013, when it was created, located on the platform.

A network of Open Innovation Labs, the CY Genius Platforms

DID YOU **KNOW**

The CY Genius Platforms of Cergy Paris University make it possible to create links between research know-how and societal needs: networks of cutting-edge equipment dedicated to a particular field of application, opening up laboratory equipment and know-how to companies for R&D, places for experimentation and exchanges around new practices.

CY Microscopies & analyses is an innovation platform supported by the I-Mat federation. It offers equipment and know-how dedicated to analysis and imaging applied to materials, the environment and health.

https://cymicroscopies.cyu.fr/

CY Laserinnov is an innovation platform integrating equipment and know-how specialised in the use of lasers for non-destructive testing applied to health, aviation, security or heritage.

https://cylaserinnov.cyu.fr/

Cosmetomics@Paris-Île-de-France is a network of platforms of several institutions dedicated to the analysis, characterisation, measurement of efficacy and safety for cosmetic products.

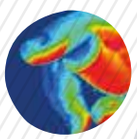
https://www.cosmetomics.com/

U-maker
L'atelier géosciences de solutions 3D

The U-MAKER micro-platform for designing and 3D printing of prototypes of educational objects for geology.

https://cyumaker.cyu.fr/

Find out more
https://cypeptlab.cyu.fr/



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