

Peptlab@UCP:

A prototype platform for cGMP large scale peptide synthesis to favour phase I and II clinical studies.

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Peptides are the core of research and scientific advances in several major medical, pharmaceutical and cosmetic industries. Peptides are molecules with a important role not only in several biological functions but also as active ingredients in cosmetics.

Since 2010, the *University of Cergy-Pontoise* is internationally recognized in the field of peptide custom synthesis thanks to the Openlab *Peptlab@UCP*, a technological platform specialized in the preparation of natural and/or synthetic peptides.

With the support of *Ile-de-France Region*, Peptlab@UCP is changing scale and becoming a **key player** in the **cGMP synthesis of peptides** on a large scale by microwave strategy (CEM Liberty PRO instrument) and **purification** by a patented process called **Inexiotech**.

This real opportunity will allow the *University of Cergy-Pontoise* to become the first French university to support industrial partners who want to develop and put into the market peptide drugs.

Peptlab@UCP services

Peptlab@UCP is characterized by a strong Know-how in organic, pharmaceutical chemistry, synthesis as well as purification of small molecules, peptides, oligonucleotides, proteins and their molecular and biological characterization.

Our clients range from Academic institutions to small/medium size Biotech companies.

Our services:

- ❖ Custom R&D in synthesis and analysis:
 - ✓ Modified peptides (cyclisation, glycosylation, biotinylation, labelling with fluorescent dyes...)
 - ✓ HPLC, Mass spectrometry, Flash chromatography, Ion exchange...
- ❖ GMP services
We offer multi scale synthesis from 100g to 1kg per batch

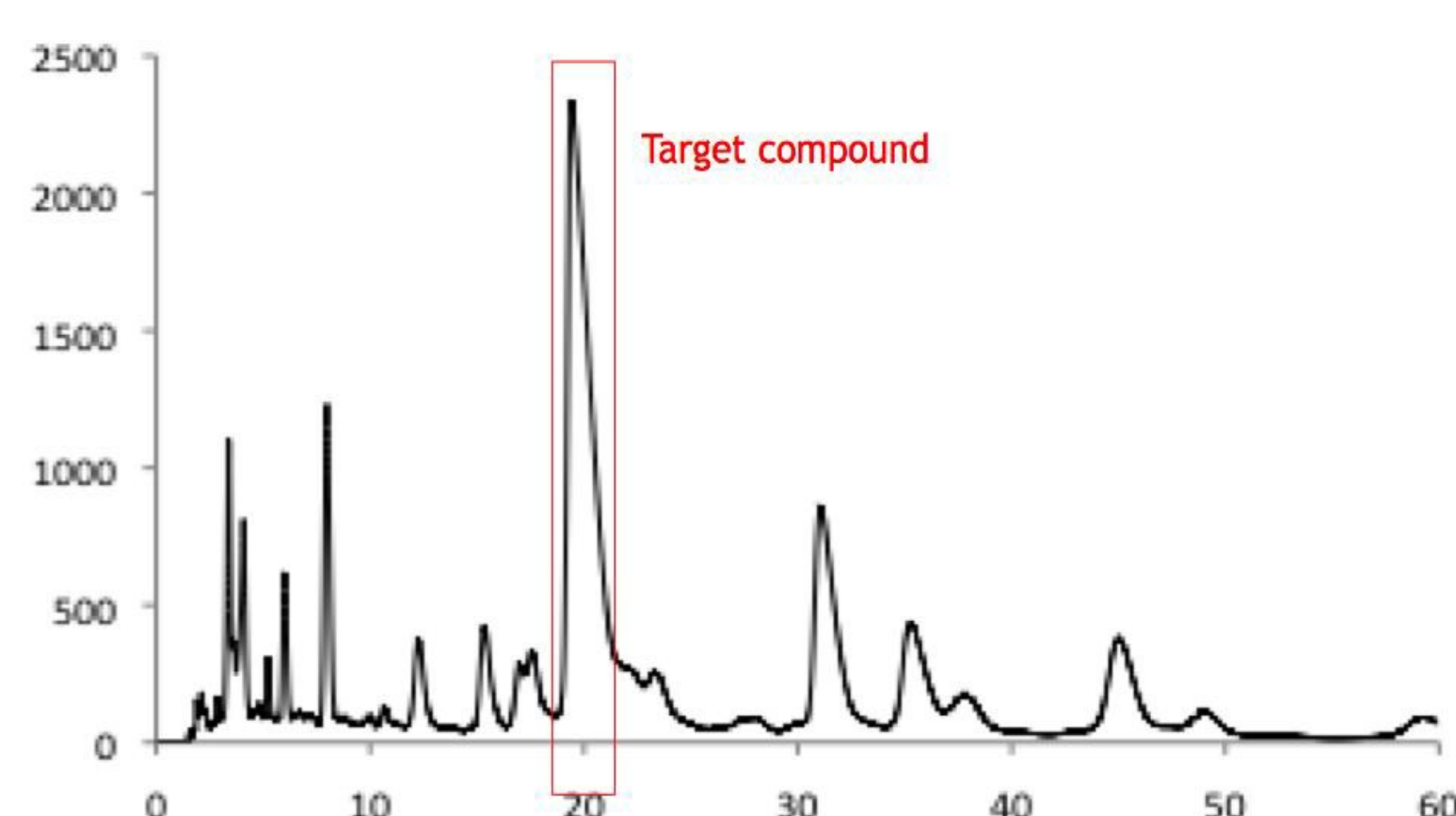
Purification process

Peptlab@UCP and Inexios Society are creating a joint venture to purify peptides through GMP processes.

Inexiotech is a patented technology transforming a discontinuous purification process into a continuous one. This technology halves the purification time and buffer consumption for the same final purity. You can save around 30% of energy and 25% of room space.

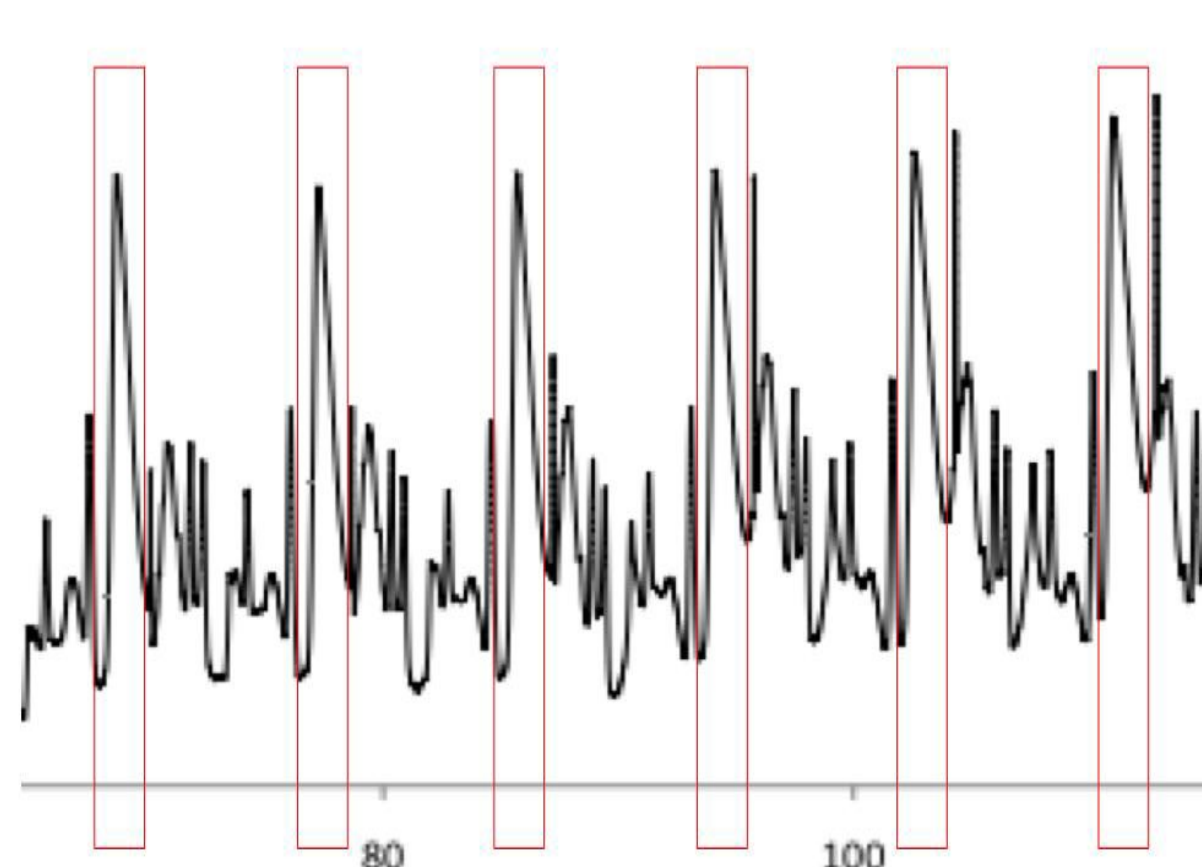
The Inexiotech process is GMP compatible, reducing considerably the size of chromatographic equipment (columns, lyophilisator, pumps...).

Proof of concept



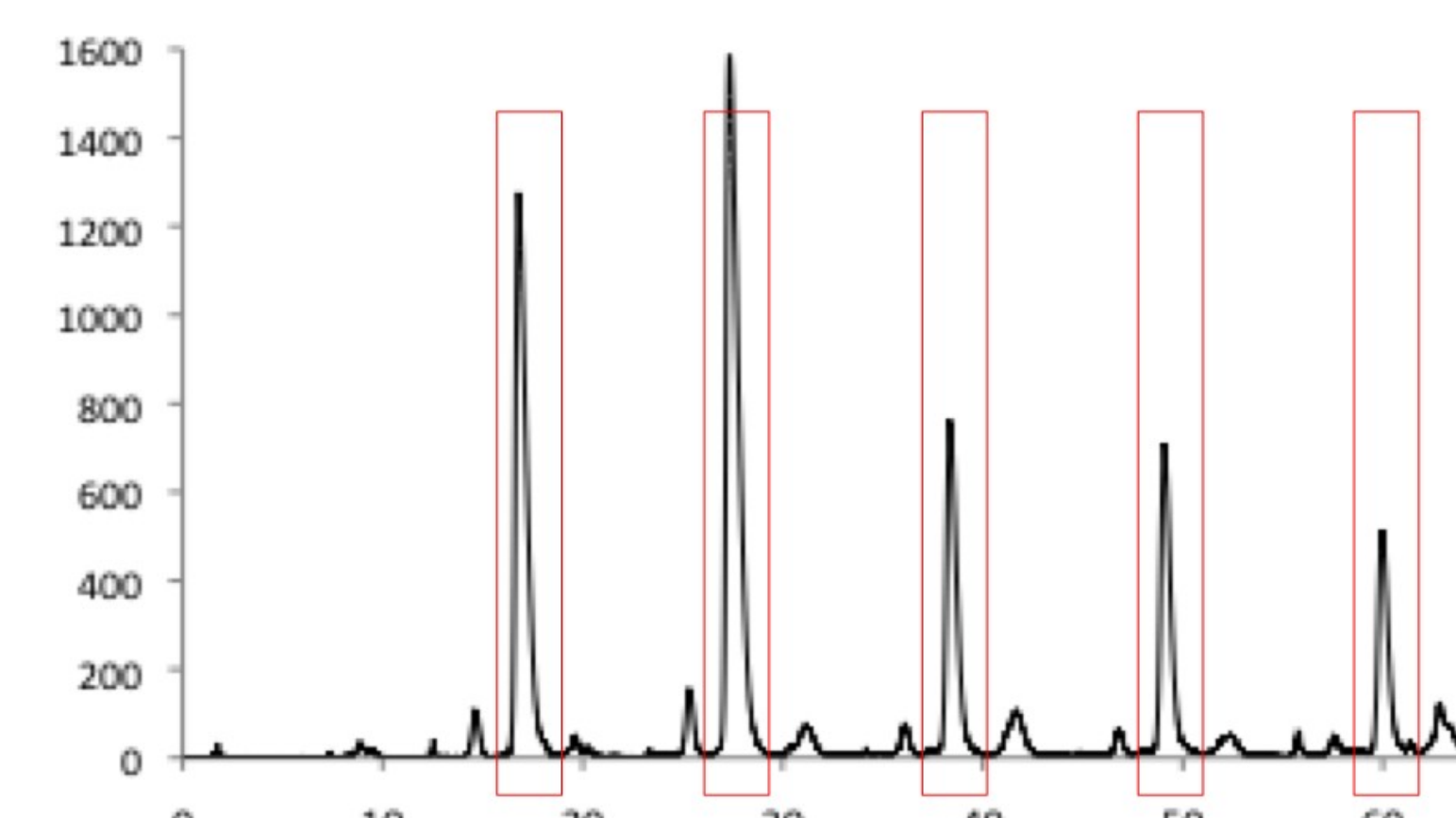
Natural extract, 300 mg/ml. Injection 20 ul, Semi-prep C18 column 150 x 9.1 mm, Isocratic conditions

1st PASS



View of the first pass, overlaid injections.

2nd PASS



Collection of the pure target



Microwave Synthesis



Liberty Blue™

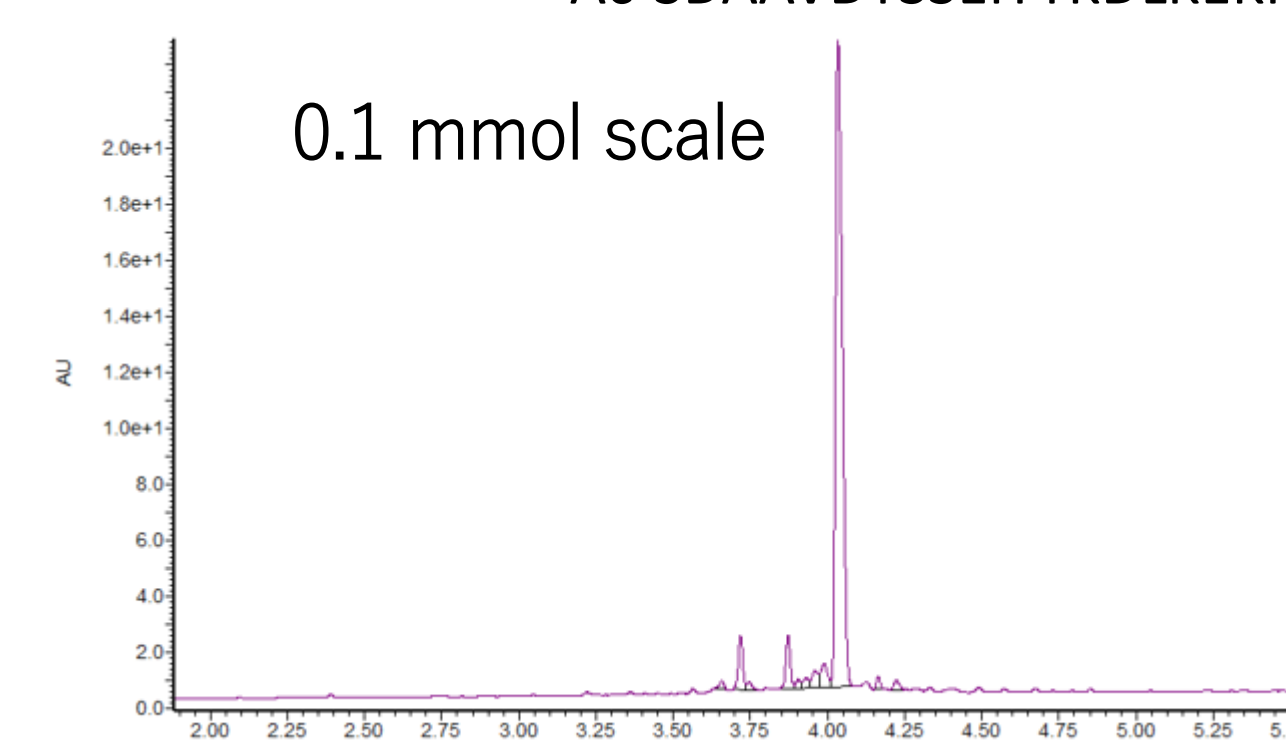
- 0,005 to 5mmol scale
- 4 min cycle time
- 27 amino acid positions
- Integrated camera

Liberty PRO™

- 3L, 7L, 15L reactor size, up to 1kg of crude peptide in single batch
- Remarkable scability from R&D (Liberty Blue™) scale to production
- cGMP production of API's

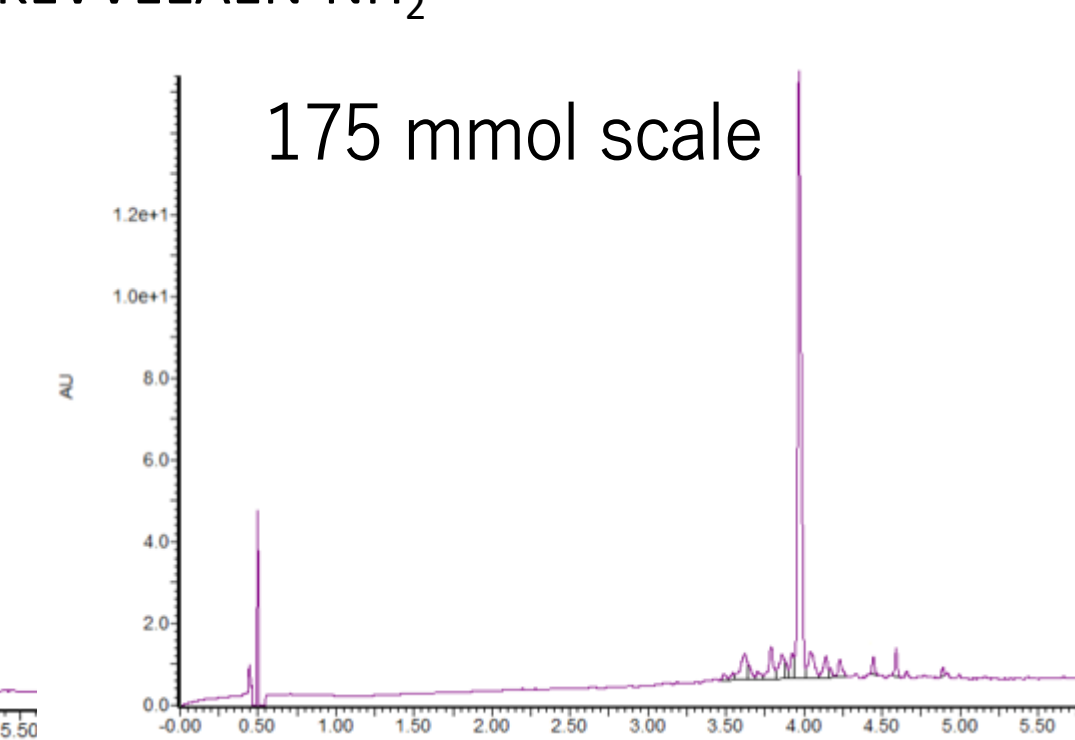
Ac-SDAAVDTSSSEITTKDLKEKKEVVEEAEN-NH₂⁺

0.1 mmol scale



- 0.20 mmol/g Rink Amide ProTide
- Double coupling towards end
- Fmoc-Asp(OMpe)-OH & Fmoc-Ser(trt)-OH

175 mmol scale



- 0.61 mmol/g Rink Amide ProTide
- 5-Fold reagents
- * This study was carried out by CEM