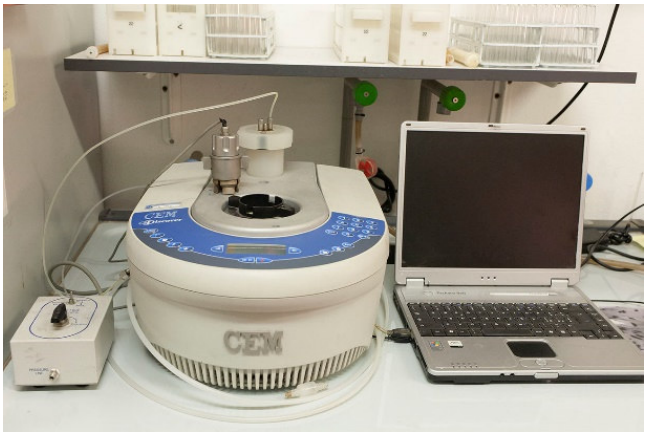
## 1. ***MICROWAVE SYNTHESIZER (Cem)***

Microwave synthesizer with an automated overpressure venting capability which allows reactions up to 300 psi (20 bar). An integrated software provides an automated control of reaction conditions and data handling.

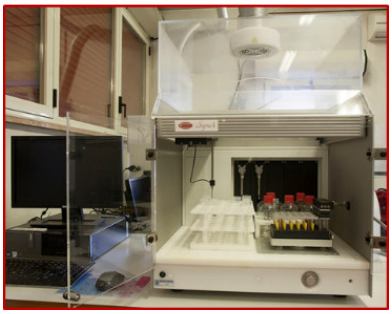



## 2. ***MEDIUM PRESSURE CHROMATOGRAPHIC PURIFICATION SYSTEM (Biotage)***

Automated system for performing medium-pressure flash chromatographic purifications of complex organic compound mixtures (100mg to 50g) using prepacked cartridges.

### 3. ***PEPTIDE SYNTHESIZERS (Multisyntech)***

Fully automatic, computer controlled peptide synthesizers utilizing one (Syro I) or two (Syro II) arm pipetting robot. Optimal mixing of the reactants is provided by a variable speed vortexer, and a 24-position reactor block allows for parallel synthesis of peptides.



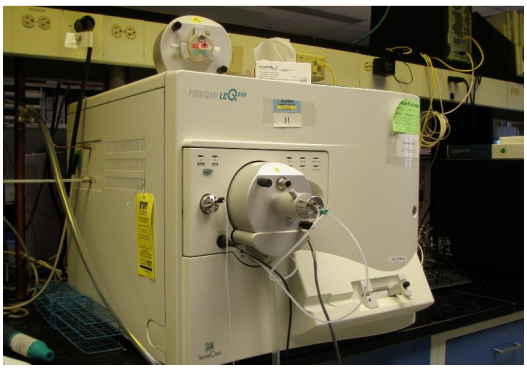
## 4. NMR SPECTROMETER (Varian)

Model Mercury Plus, 400 MHz, equipped with an Oxford 9.4 Tesla magnet and inverse and direct probe multinuclear. $^{1}H$, $^{13}C$ e $^{31}P$ mono- and bi-dimensional experiments are carried out at room temperature.

Model Gemini, 300 MHz, equipped with an Oxford 7 Tesla magnet and inverse and direct probe multinuclear. 1H, 13C e 31P mono- and bi-dimensional experiments are carried out both at room and at variable temperature.

## 5. ***MASS SPECTROMETER (Thermo-Finnigan).***

Thermo-Finnigan LcQ-Duo. Ion-trap based instrument equipped with an ESI ion source. It is capable of operating in both positive and negative ion modes and can also perform MS/MS tandem mass spectrometry experiments. Mass range: 150 to 2.000 amu.



## 6. ***GASCHROMATOGRAPH (Thermo).***

Focus model. Single-channel instrument equipped with a flame-ionization detector (FID). It is mainly employed with chiral stationary-phases.

## 7. ***MICROWAVE SYNTHSIZER (Biotage)***

Biotage Initiator. It allows to perform reactions (0.2-20 mL volume) at temperatures and pressures of up to 300 °C and 30 bar, within the power range 0-400 Watt


## 8. ***HPLC (Waters).***

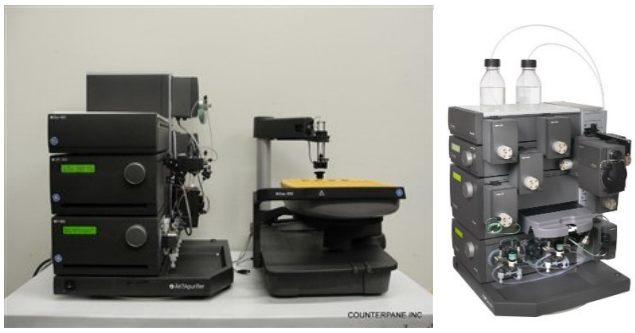
The system is composed of a Waters 600 pump and a Waters 486 single-Channel tunable ultraviolet/visible (UV/VIS) detector.

## 9. ***OLIGONUCLEOTIDE SYNTHESIZER (ÄKTA)***

It is a flexible and fully automated DNA/RNA oligonucleotide synthesizer designed for use in research, process development laboratories, and production. This instrumentation is a compact, pump-driven system employing flow-through reactor technology, which results in significantly reduced reagent consumption, enables exact control of reaction rates and contact times, and allows smooth scale up. It allows to synthesize chemically modified oligonucleotide within two ranges, 1-50µmol and 50µmol-9mmol.

## 10. ***PREPARATIVE CHROMATOGRAPHS (ÄKTA)***

Liquid chromatographs that allow quick separation and purification of synthetyc oligonucleotides for different research purposes and both in-vitro and in-vivo tests.

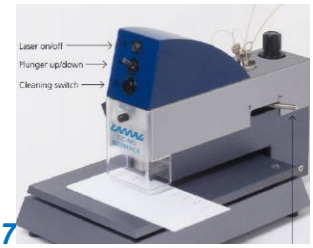


### 11. ***SPECTROPHOTOMETER (Varian)***

Model Cary 100 Bio allows quantitative analysis of samples for reaction kinetics, purity check of nucleic acids and their thermal analysis.

### 12. ***INTERFACE TLC-MS (Camag)***

It allows to excise spots from TLC/HPTLC and MS analysis by means of APCI or ESI interface for qualitative purposes.






### 13. ***SOLVENT DELIVERY AMD2 (Camag)***

It allows to deliver solvents under gradient elution condition for Thin Layer Chromatography (TLC).

### *14. VISUALIZER (Camag)*

It allows to view and to archive digitally images of TLC separations with record of retention factors and perform semi-quantitative analysis.


### *15. DENSITOMETER (Camag)*

It permicts determination and quantification of TLC spots.