Liberty XL

Mid-Scale Microwave Peptide Synthesizer

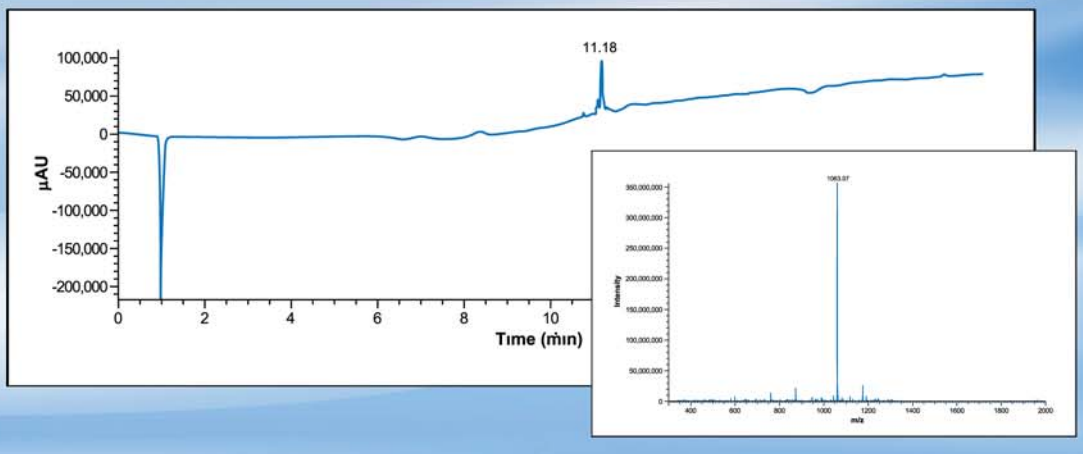
Developer of the first microwave peptide synthesis system, CEM is the leader in the field and we continue to expand the scope of this technology to provide systems to satisfy the needs of all peptide chemists. The Liberty XL is a mid-scale microwave peptide synthesizer capable of preparing hundreds of grams of peptide in an automated fashion with all the speed and efficiency of microwave technology. Using the Liberty XL, chemists can now quickly generate enough peptide material to fulfill further testing or for a pre-clinical trial in high purity and yield.

Features

- 2.5 L reaction vessel providing a synthesis scale range up to 100 mmol
- Cycle time of less than 30 minutes
- Direct and accurate temperature control with fiber optic probe
- 20 amino acid positions with either aliquot or full volume delivery
- Inert atmosphere for reagents and reaction vessel
- Efficient washing and agitation
- Fully automated operation or semi-automated for critical synthesis steps
- Easily transfer methods from Liberty Blue system
- Simple vessel design makes resin transfer and clean up easy



Even at the 100 mmol scale, the Liberty XL requires less than 30 minutes to deprotect, wash, and couple the next amino acid. This allows for the rapid synthesis of hundreds of grams of peptide in a fraction of the time it would take to prepare conventionally. ACP 65-74 was synthesized at the 100 mmol scale in less than 5 hours on the Liberty XL to give the peptide in 83% crude purity.



CEM

We are peptide synthesis



The Microwave Advantage

Utilizing microwave energy to drive peptide reactions is one of the major breakthroughs in peptide synthesis since Bruce Merrifield invented solid phase peptide synthesis in the 1960s. Though it is a well-known fact that heating chemical reactions makes them proceed faster, microwave energy brings more to peptide synthesis than a rapid change in temperature. Microwave energy directly couples at the molecular level with polar and ionic species. The movement of the molecules trying to align themselves with the electric field of the microwave causes motion, and thus, produces heat. However, it is this transfer of kinetic energy that makes all of the difference in microwave peptide synthesis. The constant realignment of the peptide chain in the microwave field accelerates the reaction and helps to keep it from aggregating, significantly improving results of the synthesis.

- License included with each system allowing the use of microwave energy for both the coupling and deprotection steps
- Fastest cycle times available
- Unparalleled peptide purity and yield compared to conventional synthesis
- Significantly reduces purification time and waste
- No concern for thermal run-away with instant on/off power control
- Access to peptides impossible to synthesize under conventional conditions

US7393920; US7582728; US8058393; EP1491552; JP4773695
Additional worldwide patents pending

Specifications

Synthesis Scale	10 – 100 mmol
Reaction Vessel Sizes	2.5 L
Chemistry	Fmoc only
Activation Method	In situ or pre-activation, standard activators
Amino Acid Reagents	20 (1 L capacity)
External Bottle Positions	4
Temperature Measurement	In situ Fiber-optic
Fluid Measurement	Timed delivery One Shot Option
Fluid Transfer	Positive nitrogen pressure for amino acids Independent pumps for each external position and RV drain
Agitation	Mechanical
Waste Container	Variable reservoir with overflow detection
Controller	Laptop with wireless option standard
Reports	Printable PDF file for each method created Log created during each run of every step performed
Power	200/208/230 VAC (200-253 VAC), 60 Hz, 15A @ 230 VAC 220/240 VAC (202-250 VAC), 50 Hz, 15A @ 240 VAC
Dimensions	48"W x 29"D x 64"H (121.9 cm x 73.7 cm x 162.6 cm)
License	The purchase of this instrument includes a grant of a limited, non-transferrable license to use this instrument for microwave peptide synthesis utilizing microwave energy for both the coupling and deprotection steps.
Patents	US7393920; US7582728; US8058393; EP1491552; JP4773695, with additional worldwide patents pending

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