PERFORMANCE
RELIABILITY
FLEXIBILITY
SUPPORT

Symphony®
Multiple Peptide Synthesis Station

Protein Technologies, Inc.
Put the Symphony to work for you

The Symphony Multiple Peptide Synthesizer provides superior

- Performance
- Reliability
- Flexibility
- Support

Performance

All peptides require special treatment. The Symphony allows you to assign unique coupling conditions to each residue. Reliable and consistent reagent additions, efficient mixing, and flexible chemistries assure that even challenging peptides are made right the first time.

Reliability

Peptide chemists at pharmaceutical, biotech, university and contract labs have been relying on the Symphony for over 10 years. The patented matrix valve – a simple, yet flexible, fluid distribution system – is the heart of the synthesizer. Wetted materials are compatible with and resistant to all synthesis reagents. Very few moving parts minimize wear and tear.

Flexibility

Some days you need many iterations of a short sequence; on other days you need more material of a long peptide. And two other people in your group are sharing the same instrument. The flexible, multi-channel Symphony allows a variety of users and applications to proceed concurrently. Without compromise.

Support

PTI offers the best support in the industry. Our experienced support team is focused solely on solid-phase synthesis instrumentation and chemistry. The team takes pride in being responsive, thorough, and helpful. Service and maintenance agreements are customized to fit your specific needs. Ask your colleagues who own a PTI instrument, they can attest to our excellent field support.

Read on to learn more about why Symphony has become the instrument of choice for professional peptide synthesis.
What is it?

12 Independent Reaction Vessels
- Individually controlled for:
  - sequence
  - scale
  - coupling conditions
- Fluid sensors confirm deliveries and drains
- Glass reusable or plastic disposable reaction vessels

Automated Cleavage
- Direct ventilation eliminates TFA fumes
- Dedicated fluid path
- Programmable cleavage protocols
- Adjustable start times:
  - upon completion of synthesis
  - delay to specific time/date

20 Amino Acid/Reagent Positions
- Use PTI pre-weighed or bulk reagents
- Fluid sensors and filters on all lines
- Simple to prime, flush, and clean

Integrated Solvent Cabinet
- Provides secondary containment
- Positions for solvents, reagents, and waste
- Enclosed, vented, and easily accessible
- Fluid sensors and filters for each bottle

Easily Fits In Your Lab
- Eliminates need for fume hood
- Ventilation through standard 4” duct
- Standard 115 V or 230 V power
- Floor standing with wheels for easy service
Why does it work so well?

The Symphony is built around a patented*, field-proven, chemically resistant solvent distribution system. Proprietary software controls simultaneous and asynchronous solvent movement to each reaction vessel. You have complete control of each step of each reaction for each residue of each reaction vessel. Pre-set coupling programs are provided to get you started, or you can customize and save almost any reaction conditions you desire.

Liquid sensors on each line control and verify solvent delivery, washes, priming, and waste. Lines are purged with nitrogen between each procedure. A report file records each step as it occurs, giving you a complete history for each synthesis.

For example: When solvent A is required for reaction vessel 4 (RV-4), the computer instructs the Symphony to send a measured volume to RV-4. Concurrently, reagent 5 (e.g. proline) is added to RV-12 to begin coupling while reagent 16 (e.g. isoleucine) is added to RV-3. RVs -2 and -8 may be in the middle of a coupling reaction. RV-9 and RV-10 might be available for use. RV-1 and RV-5 are beginning a cleavage procedure. RV-7 is paused in mid-synthesis for a manual addition of a special reagent.

The Symphony is essentially 12 completely independent synthesizers in one unit!

*The Symphony is manufactured under U.S. Patent 5,203,368.
Performance: both speed and quality

How fast can you go?

How about 12 couplings per hour? For syntheses in the 0.005 mM to 3 mM scale, there is no instrument as fast as the 12 channel Symphony. Using standard coupling conditions, the Symphony can easily perform 12 couplings per hour. That’s one coupling every 5 minutes when using all 12 reaction vessels. Each coupling cycle includes all washing, deprotects, activation and coupling.

How does the Symphony give quality peptides?

- Consistent and reliable reagent additions
- Efficient mixing
- Flexibility in control of coupling conditions
- Flexibility in reagents/monomers
- All reactions under nitrogen
- Manual intervention programmable

Through reliable control and implementation of these variables, reaction parameters can be customized to fit your specific needs.

PTI – the choice of professionals

Protein Technologies Inc. has been a global leader in automated peptide synthesis instrumentation since 1990. Innovators of the venerable Symphony, PS-3, Prelude and Sonata suite of synthesizers, PTI’s greatest commitment is to its loyal and growing customer base. For the best in performance, reliability and throughput, along with unparalleled field support, choose PTI synthesizers and reagents for your lab.

Performance Example - difficult sequence

LC/MS analysis of crude 30-mer peptide, synthesized using Fmoc chemistry on a Protein Technologies, Inc. Symphony peptide synthesizer. Thanks to Clifford Quan, Genentech, Inc. South San Francisco, CA

Peptide Sequence: RQIKIWFQNRRMKWKKLQLRDAAPGGAIVS

HPLC traces of 12 crude peptides synthesized overnight on a single Symphony Multiple Peptide Synthesizer. Peptides range from 10 to 16 residues and all were completed and cleaved in less than 16 hours.
Assign a peptide sequence to an open reaction vessel and monitor progress of all reactions

Type in your sequence and assign a coupling program to each residue

Create, view or edit coupling programs

Other software features:

- Automated cleaning procedures
- Complete manual control of individual RVs
- Create and save customized coupling protocols
- Programmable stop/pause steps for manual intervention
- Create personalized reagent and solvent tables
- Calculate amino acid, activator, and solvent amounts for synthesis setup
- Synthesis record of each reaction step for each RV
- Flexible re-start functions for interrupted syntheses
- Diagnostics and error reporting
For maximum performance

PTI Reagents – The Right Stuff

Other than choosing the right synthesizer, nothing is more important to synthesis success than the quality of the reagents used with your instrument. Use PTI brand amino acids to maximize performance of your automated peptide synthesizer. Our amino acids are quality screened and optimized for use on PTI instruments and will help ensure high quality peptides and reliable operation of your instrument.

Benefits of using PTI reagents include:

- Your instrument will run better
  - Minimize downtime and service calls caused by impure and unstable reagents

- Better synthesis results
  - Consistent quality reduces synthesis variability
  - Save time by making your peptide right the first time

- Rapid and reliable setup
  - Convenient, affordable, pre-weighed – get your synthesis started quickly and accurately

Instrument Service and Support

We understand how much you rely upon the equipment in your lab. In addition to supplying superior instrumentation, PTI offers the finest in technical support and field service. Our service team specializes in one thing – supporting PTI synthesis instruments. From installation to preventative maintenance, our responsive field service group will make sure that you get the most out of your investment. We will earn your trust.

- Varying levels of service agreements are available
- Please contact PTI for terms and pricing
Specifications:

Number of reaction vessels ...................................... 12 on full Symphony, 4 on Quartet
Synthesis scale range .............................................. 0.005 mM to 3.0 mM
Reaction vessel volume ............................................. Plastic disposable - 25 ml, larger size optional
                                                        Glass reusable with screw-cap access
                                                        3 sizes available - 13 ml, 25 ml, 35 ml capacities
Number of solvent positions/sizes ............................. 1 primary solvent position, 20 L capacity
                                                        5 user-defined solvent positions, 0.5 L - 4 L capacities
Number of amino acid positions ................................. 20 Amino Acid/Reagent positions
                                                        120 ml capacity standard, larger size optional
Chemistries supported ............................................ Fmoc, t-Boc, organic, peptoid, combinatorial, others
Activation .............................................................. HBTU, HATU, HCTU, TBTU, PyBOP, others
Throughput .............................................................. User defined
Fluid measurement technique ................................. Fixed loop measurement with optical fluid sensors
Fluid transfer method ............................................... Positive pressure with nitrogen
Agitation method ..................................................... Nitrogen bubbling, adjustable and programmable
Cleavage ................................................................. Automatic, programmable (for Fmoc chemistry only)
Waste containers .................................................... (1) 20 L container with overflow sensor
Control interface ...................................................... Proprietary Symphony control software
                                                        Stand-alone computer and flat panel monitor included
Reporting ............................................................... Real-time log of each instrument function, print to file,
                                                        screen, or printer
Power ................................................................. 115 V/60 Hz or 230 V/50 Hz
Dimensions ............................................................ 35” W, 23” D, 63.5” H (89 cm W, 58 cm D, 161 cm H)
Weight ................................................................. 550 lbs. (250 kg)
Warranty ................................................................. One year, parts and labor

Ordering Information:

<table>
<thead>
<tr>
<th>Cat. No.</th>
<th>Description</th>
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<tbody>
<tr>
<td>SMPS-115</td>
<td>Symphony/Multiplex Peptide Synthesizer, 115 V. Includes solvent cabinet, computer, flat panel monitor, printer, vacuum pump, 12 glass reaction vessels (25 ml), 20 polypropylene reagent reservoirs</td>
</tr>
<tr>
<td>SMPS-230</td>
<td>Symphony/Multiplex Peptide Synthesizer, 230 V. Includes solvent cabinet, computer, flat panel monitor, vacuum pump, 12 glass reaction vessels (25 ml), 20 polypropylene reagent reservoirs</td>
</tr>
<tr>
<td>SMP-K5</td>
<td>Fmoc Amino Acid Start-up Kit for Symphony. Contains 1 each of all 20 amino acids (5 mmol), 0.9 L each of deprotectant and activator, 100 g HBTU</td>
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For more information:

800-477-6834

www.peptideinstruments.com

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