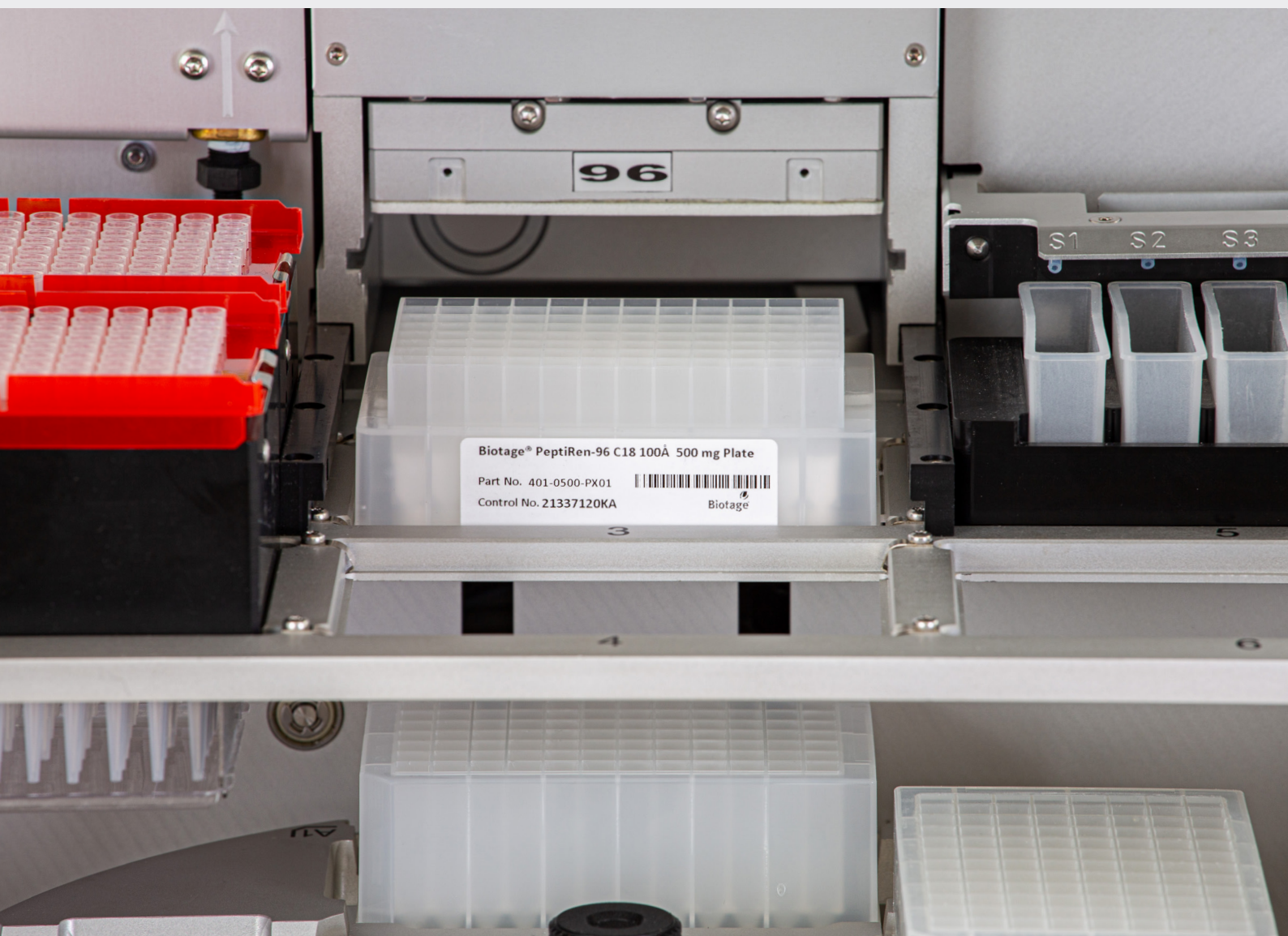


Biotage® PeptiRen-96 and Biotage® Extrahera™

Automated High-Throughput Parallel Peptide Purification

Unparalleled Peptide Drug Discovery Workflow Solutions



Welcome to our World

Biotage is a Global Impact Tech Company committed to solving society's problems. We offer workflow solutions and products to customers in drug discovery and development, analytical testing and water and environmental testing.

Biotage is contributing to sustainable science with the goal to make the world healthier, greener and cleaner – **HumanKind Unlimited.**

Our customers span a broad range of market segments including pharmaceutical, biotech, contract research and contract manufacturers as well as clinical, forensic and academic laboratories in addition to organizations focused on food safety, clean water and environmental sustainability.

Biotage is headquartered in Uppsala in Sweden and employs approx. 500 people worldwide. The Group had sales of 1,566 MSEK in 2022 and our products are sold in more than 80 countries. Biotage's share (BIOT) is listed in the Large Cap segment on the NASDAQ Stockholm.

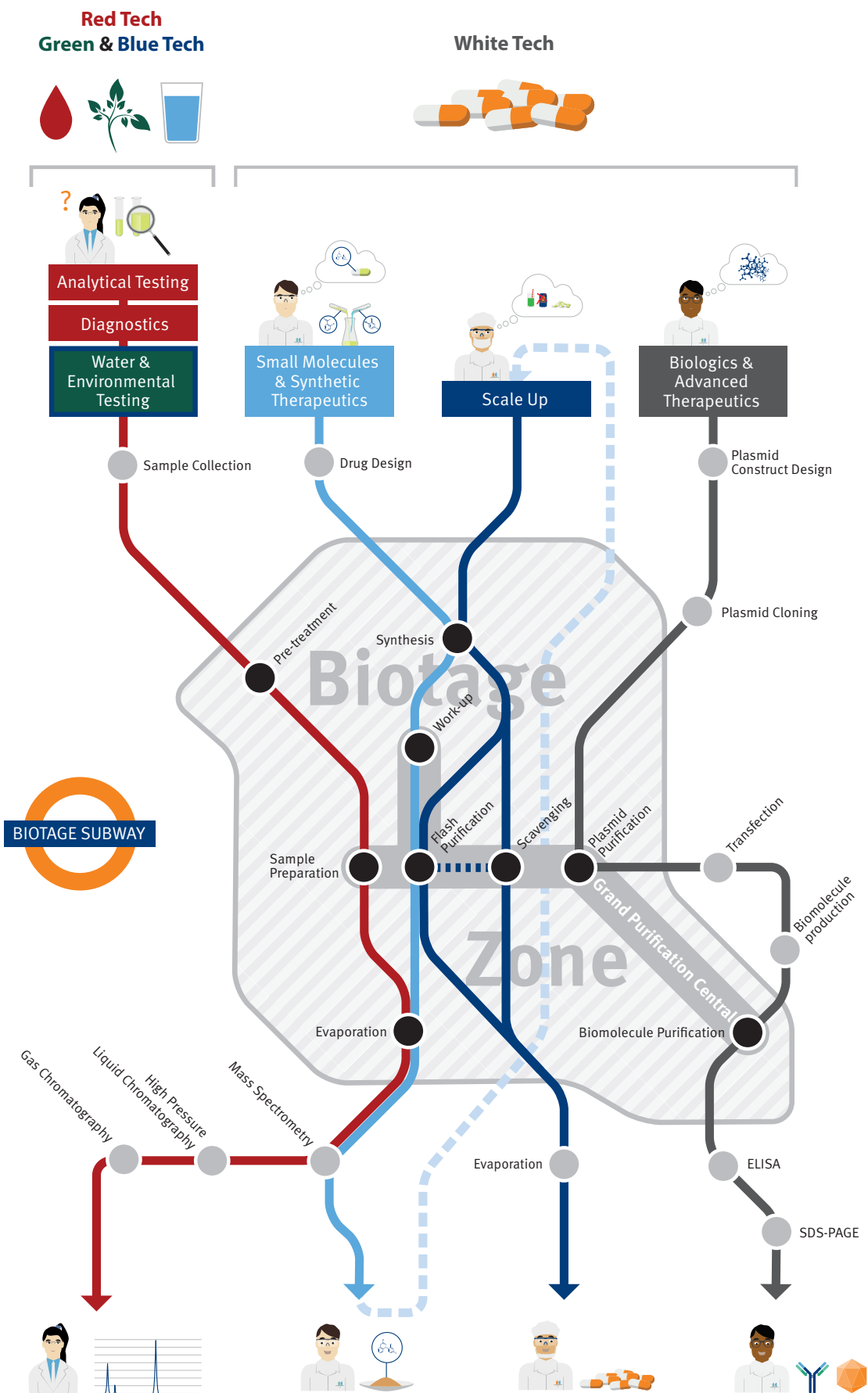
Vision

Biotage does its part for the future of our planet by helping to shape the sustainable science of tomorrow.

Mission

We help our customers make the world a healthier, greener, and cleaner place





High-Throughput Parallel Peptide Purification

Peptide drug discovery has resulted in numerous globally approved drugs and many more in clinical development for treating diseases such as cancer, metabolic diseases, and cardiovascular diseases.

Despite advances in high-throughput automated peptide synthesis, purification technologies remain challenging and are a major bottleneck in producing peptide libraries. Solid Phase Extraction (SPE) is a simple and well-known technique for purifying compounds that can be used in high-throughput workflows. SPE technology allows parallel processing and improved purity of complex sample mixtures, delivering peptides of sufficient purity for use in biological assays to support workflows in peptide drug discovery. To leverage this technology in peptide purification, Biotage have developed the Biotage® PeptiRen-96 C18 SPE well plate, designed specifically for the enrichment and cleanup of crude peptide mixtures.

Biotage is an expert in providing peptide workflow solutions and offers this SPE technology as a fast, sustainable, and automated parallel peptide purification solution, when used on the Biotage® Extrahera™ Peptide workstation. This approach enables simpler, faster, and greener purification of up to 96 peptides simultaneously, with reduced processing costs, compared to traditional sequential HPLC strategies.

- » **Simpler** – A simple routine protocol to improve peptide purity
- » **Faster** – Reduced purification time through parallel operation; up to 96 peptides at a time

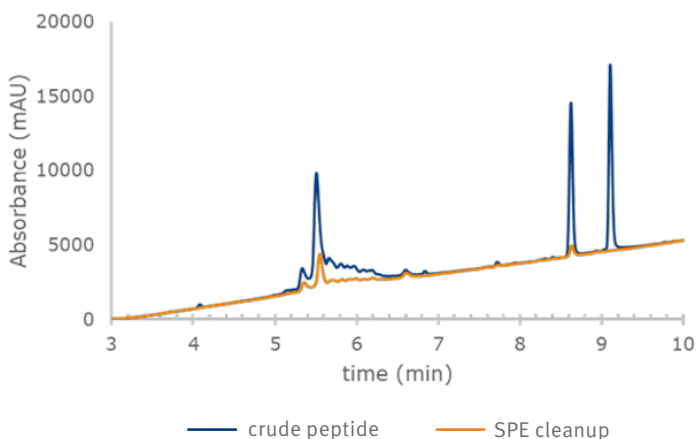


Figure 1. Crude peptide mixture cleaned up using Biotage® PeptiRen-96 C18 SPE technology.

- » **Greener** – Less consumption of organic solvents compared to traditional sequential HPLC chromatography
- » **Cost effective** – enabling increased workflow efficiency and productivity

Why should you use Biotage® PeptiRen-96 C18 SPE technology with Biotage® Extrahera™ in your laboratory?

- » Enables high-throughput cleanup of 96 peptides simultaneously for screening applications
- » C18 SPE sorbent proven to be effective for peptide purification
- » Remove disruptive by-products such as salts and residual side chain protecting groups
- » Easily remove chromatographically distinct components
- » Exchange salt counter ions
- » Sustainable purification; save on solvents, save time, and save money
- » Clean up cyclic and linear peptide sequences
- » Maximize recovery with known HPLC elution conditions
- » Have sufficient yield and purity for downstream bioactivity assays
- » Biotage® Extrahera™ SPE methods for peptide purification are pre-optimized and included
- » Biotage® Extrahera™ is a proven workhorse in laboratories around the world





Purification Method	Time (H)	Solvent Consumption (L)	
Parallel processing Biotage® PeptiRen-96 plate	1.55	1	 
Sequential processing RP-HPLC (35 min run)	56	50	 x36  x50

Table 1. Time and solvent consumption for purification of 96 peptides

Biotage® Extrahera™

The Biotage® Extrahera™ has revolutionized automated sample preparation since its introduction in 2015, offering precision engineering, user-friendly software, and flexible formats for various analytical applications. Widely used in forensic, clinical, and doping labs globally, this positive-pressure driven workstation now enables the processing of 96 fixed well plates for peptide library purification.

Equipped with industry-standard automation tips and intelligent tip reuse options, the Extrahera features two tip rack positions for reagents/solvents and samples. Its compact design maximizes lab space, with an enclosed processing area and integral exhaust fan for safety. The clean and simple user interface streamlines system setup, reducing programming time and allowing for more efficient processing.



Figure 2. Biotage® Extrahera™ - Peptide

Solid phase extraction (SPE)

Solid phase extraction (SPE) uses a solid media with physical or chemical adsorption interactions to separate analytes. The media is typically mounted on a sorbent material in the form of a disk, cartridge, or plate. The analytes are retained on the media as the sample passes through the sorbent material and are then eluted using a solvent in which they are soluble. This solution is then retained for analysis, similar to liquid chromatography. To purify crude synthetic peptides by SPE, a reversed phase stationary phase is used, consisting of silica with a C18 bonded phase. This method has been proven effective for peptide purification via reversed phase high-performance flash chromatography.

The process of using the Biotage® PeptiRen-96 C18 plate for peptide purification involves five main steps:

1. **Condition:** Before loading samples onto the Biotage® PeptiRen-96 C18 plate, it's necessary to solvate (condition) the sorbent to ensure a proper phase interface between the sorbent and the sample.

- 2. **Equilibrate:** The next step involves using a solvent system with low organic concentration (mobile phase) to prepare the media for sample load. This process is called equilibration.
- 3. **Load:** After equilibration, peptide samples can be loaded onto the Biotage® PeptiRen-96 C18 plate and retained on the sorbent.
- 4. **Wash:** The wash step is performed to remove un-retained compounds (impurities) from the sorbent. Multiple wash conditions can be employed depending on the specific requirements of the sample.
- 5. **Elute:** Once the impurities have been removed, the compounds of interest can be eluted from the sorbent and collected for further analysis.

We are using SPE to enrich the purity of the target peptide of interest in the sample.

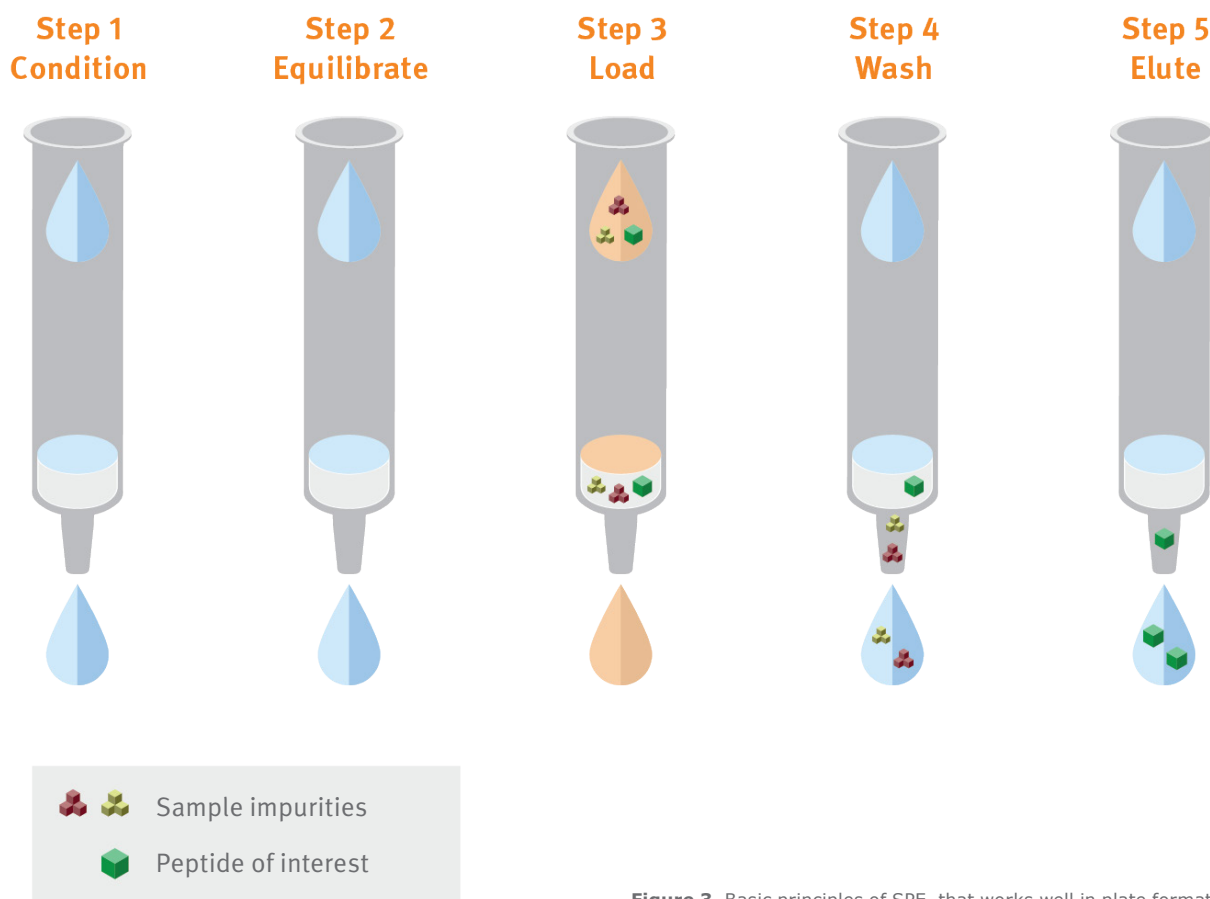


Figure 3. Basic principles of SPE, that works well in plate format.

Biotage® PeptiRen

Biotage® PeptiRen-96 C18 plate is a silica-based end-capped C18 solid phase extraction (SPE) sorbent in 96-well format, designed for the purification of peptides.

Scale of synthesis

1-10 μmol , ~1-15 mg crude sample per well

What's in the box?

96 well plate containing 500 mg of C18 100 Å media in each well

Ordering information

Part number: 401-0500-PX01

Description

Biotage® PeptiRen-96 C18 100 Å 500 mg Plate (1/pk)

System and Required Accessory

419123SP Biotage® Extrahera™ - Peptide

- » Biotage® Extrahera™
- » Vacuum Pump ME1C
- » Accessory Kit, Vacuum pump ME1C

419124SP Configuration Kit for 96 Positions – Peptide

- » Configuration Kit – 96 Positions Dual Flow
- » Solvent Safety Kit – GL45 Caps, Filters, & 1 L Glass Bottle (5/qty)
- » 100 mL Solvent Rack
- » 100 mL Solvent Reservoirs
- » 1000 μL Clear Tips
- » 1000 μL Wide Bore Clear Tips

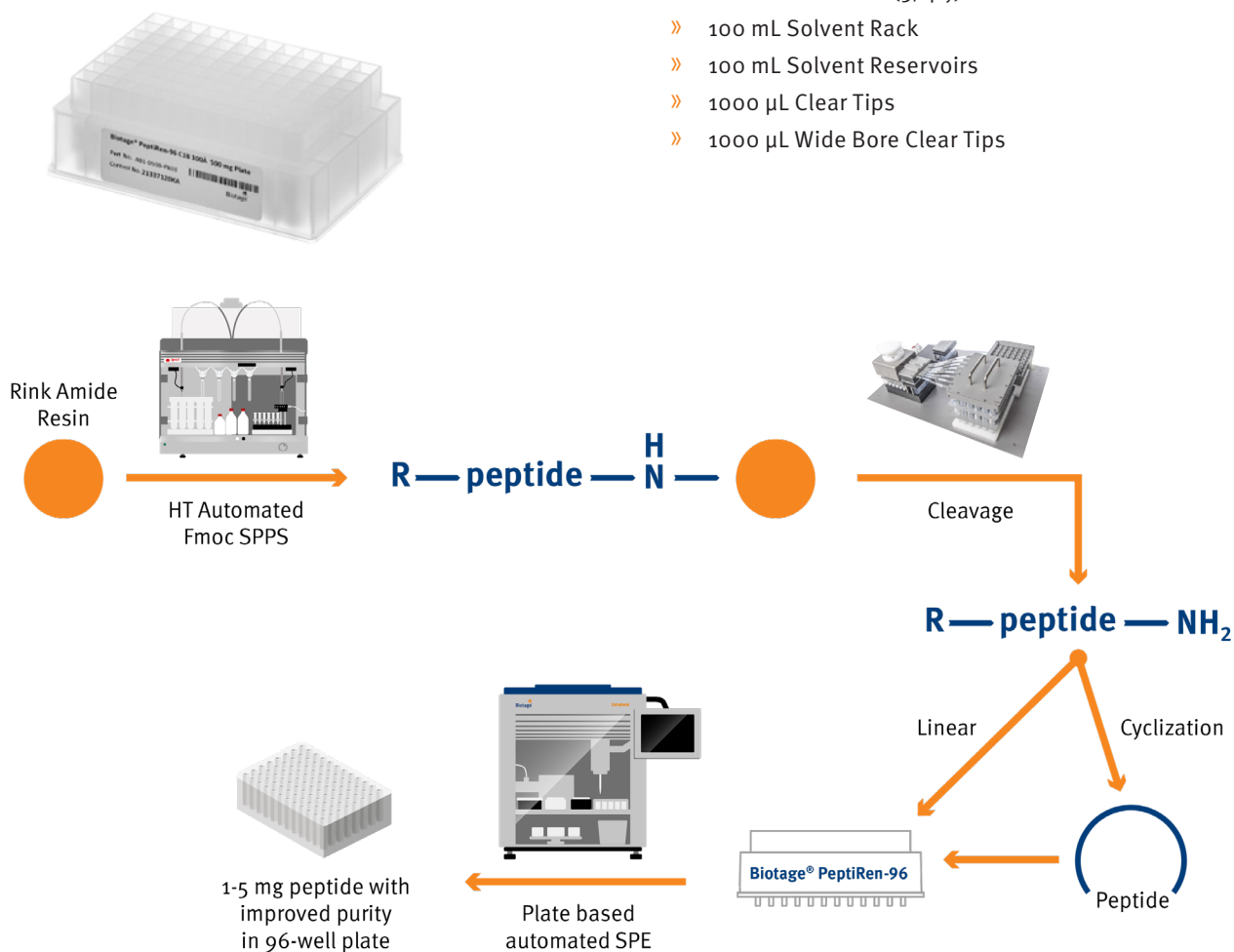


Figure 4. Schematic example of high-throughput automated peptide synthesis workflow in big pharma/CRO

Your Complete Partner for Effective Chemistry

Biotage is a worldwide supplier of instruments and accessories designed to facilitate the work of scientists in life sciences. With our deep knowledge of the industry, academic contacts and in-house R&D teams, we can deliver the best solutions to your challenges. We take great pride in our flexibility and ability to meet our customer's individual needs. With strong foundations in analytical, organic, process, and biomolecule chemistry, we can offer the widest range of solutions available on the market.

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Literature Number: PPS714

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