

Procise

Protein Sequencing System























the gold

For the past two decades, PE Biosystems has set the standard in protein sequencing for sensitivity, reliability, and ease of use.



The Procise® Protein Sequencing System continues that tradition by combining precise, hands-on control with convenient, hands-off automation.

standard

The Procise Protein Sequencing System dates back to the Model 470, and every detail of the instrument is the result of years of experience, including electronic pressure regulation and fluid delivery, sequencerready sample preparation devices, and state-of-the-art capillary HPLC. In its standard configuration, the Procise system provides picomole sensitivity and high throughput for Edman sequencing. The instrument features new cycles for even higher throughput, and comes ready to sequence with standard protocols and chemistries. With its high productivity, low cycle costs, and full, walkaway automation, the Procise system is the ideal instrument for service laboratories.

The Procise cLC combines capillary HPLC with full instrument automation to take Edman sequencing to the level of femtomole analysis. With chemistry cycles designed to reduce background and smaller cartridges that minimize losses, Procise cLC offers sensitivity for sequencing intact proteins that outperforms all other sequencers.

Procise C, the newest member of the Procise family, offers direct sequence information from the carboxyl terminal of proteins or peptides, critical for verification of protein expression and quality control for therapeutic proteins.

Take Edman Sequencing to a New Level with Mixed Peptide Sequencing.

By simultaneously sequencing multiple fragments of the same protein, you can break through blocked proteins and achieve same-day, positive protein identification. The process is simple:

- Use sequence-specific chemistry to cleave the protein into 2–5 fragments.
- Sequence all the protein fragments simultaneously.
- Search online protein databases using all the amino acids identified for each fragment.
- When two or more fragments align, identify your protein with confidence.



precision

Procise[®] cLC: Femtomole Protein Sequencing

If you can see it, you can sequence it.

The Procise cLC offers enough sensitivity to sequence virtually any protein spot on a 2D gel. Even 200 femtomoles of protein are sufficient to call seven or more residues for positive protein identification.

Procise cLC combines full automation with capillary HPLC and features the first capillary column for PTH analysis. The result is a five-fold increase in sensitivity with good repetitive yields.

The Procise cLC also features custom chemistry cycles, special reagents, and a scaled-down reaction chamber designed to minimize artifacts and maximize sensitivity, so you get optimal performance, every time.



2D gel in cancer research



Starting the run



Procise[®] cLC 200fmol of bacterial, permeability-increasing protein

Procise[®] Protein Sequencer: High-Throughput Edman Sequencing

Expert and novice users alike get great results.

The Procise Protein Sequencer comes with standard protocols, so you can start sequencing proteins right from the start. Simply complete the sections on the menu page and press "start."

Electronic controls maintain consistent pressure, verify fluid delivery, and pause the run when errors are detected, preserving your sample and saving you time.

control



Procise® C: C-Terminal Sequencing

Data direct from the carboxyl terminal. Procise C offers direct sequence information from the carboxyl terminal of proteins or peptides, critical for verification of protein expression and quality control for therapeutic proteins.

The instrument features a patented carboxyl-terminal degradation (C-alkylation) method, which activates the Cterminal only once at the start of the chemistry cycle, prevents detection of background amino acids, and increases the accuracy of sequence calling.

MicroBlotter[™] Sample Preparation System

Preparing samples for protein sequencing and mass spectrometry.

New approaches to sample preparation are critical for researchers characterizing smaller and smaller amounts of protein, because you can lose both sensitivity and resolution when you separate trace levels of proteins on conventional columns.

The MicroBlotter system prepares samples for both mass spectrometry and sequence analysis, combining state-of-the-art capillary HPLC with a unique, on-membrane collection device to capture submicroliter peak volumes. Following trypsin digestion of a phosphorylated protein, researchers can use the MicroBlotter to detect peptides with phosphorylation sites, cut them out, and prepare them for sequencing on the Procise system.



One nanomole myoglobin residues 5/6



Phosphopeptide chromatogram



The Keys to the Procise Protein Sequencer's Performance:

- Two decades of rigorous instrument testing and quality performance
- Micromachined valve blocks for microliter deliveries
- Fluid sensors for controlled fluid delivery
- Automated pressure regulation
- One-, two-, and fourcartridge sequencers



a flexible

Focus on the Future

The Procise® system has the precision and versatility to match the priorities of research environments from industry to academia.

A final check for biopharmaceutical companies.

Reliable data is critical to the successful production of pharmaceutical proteins. Researchers are regularly called upon to demonstrate that their instruments are performing to specification, and companies are required to confirm the amino acid sequence and full-length expression of each lot in drug manufacturing.

The Procise Protein Sequencer delivers accurate, verifiable, reproducible results, and captures the information you need to establish data credibility. In addition, PE Biosystems offers installation and operational qualification to assist with your regulatory requirements.



platform



PTH analysis column



Overlay of PTH standards

The Procise system features advanced automation and GMP-quality certified reagents, which minimize background interference, facilitate sequence calling, and enable longer sequencing runs. As a result, researchers can sequence some proteins from N- to C-terminus.

Sensitivity and ease of use for basic research.

As a scientist, your focus is discovery—not instrumentation. As a result, the instruments you rely upon must have the sensitivity to identify novel proteins and quantify protein interactions, and the simplicity to make that process hassle-free. The Procise cLC Protein Sequencer, which was engineered specifically for the basic research environment, offers both.

We designed the fluid path to minimize internal volume and developed the first capillary-PTH column to maximize sensitivity. Just apply your sample and let the Procise system do the rest—even for tough jobs such as long-read sequencing.



Residues 47 and 48 of a 61mer scorpion toxin

Long length of read.

The tough samples, such as proteaseresistant proteins, almost always end up on the Edman sequencer. Most researchers request full-length sequencing for these proteins. For example, the scorpion toxin shown below was sequenced in its entirety on the Procise.

Robust performance for core and service labs.

Your lab is profitable only when your instruments are running smoothly; you can't afford downtime or inefficient operations. The Procise Protein Sequencer offers complete automation, remote operation, high throughput, and reliable results to help you meet your customer's timeline within normal laboratory operation. If you currently employ one full-time operator per sequencer, the Procise system has the potential to double your productivity and reduce your labor costs per sample.

World-class Service and Support

As soon as you place your order for a Procise Protein Sequencer, we begin a process to ensure the successful installation and operation of your instrument.

From the leader in sequencing technology

As a Procise Protein Sequencing System customer, you will continue to benefit from our protein sequencing experience long after you purchase the instrument. Our established network of technical support experts and field specialists, and our continued research in protein chemistry, guarantee a lifelong partnership of innovations in protein sequencing.

PE Biosystems confirms pre-installation requirements before shipping your order, installs and tests the instrument according to performance specifications, trains your researchers and technicians, and provides continuing support, both on-site and online. For the regulated laboratory, we offer IQ/OQ support and make our software source code available upon request.

Flexibility by design

The system's open architecture allows you to continue to adjust the system to meet your needs. For example, you can convert your Procise Protein Sequencer to a Procise cLC, and you can also upgrade from one to two or four cartridges following initial installation.

Worldwide Sales Offices

PE Biosystems vast distribution and service network, composed of highly trained support and applications personnel, reaches into 150 countries on five continents. For international office locations, please call headquarters or refer to our web site at www.pebiosystems.com.

Headquarters

850 Lincoln Centre Drive Foster City, CA 94404 USA Phone: 650.638.5800 Toll Free: 800.345.5224 Fax: 650.638.5884

For technical support, please call: Toll Free: 1.800.831.6844

www.pebiosystems.com



850 Lincoln Centre Drive Foster City, CA 94404 USA

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