

Protein Sequencer

PPSQ-51A/53A Gradient System



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PPSQ™-51A/53A Gradient System

Higher Sensitivity and More Reliable Analysis of
Protein N-terminal Amino Acid Sequences
FDA 21 CFR Part 11 Compliant

High-Sensitivity Analysis ▶ P. 4

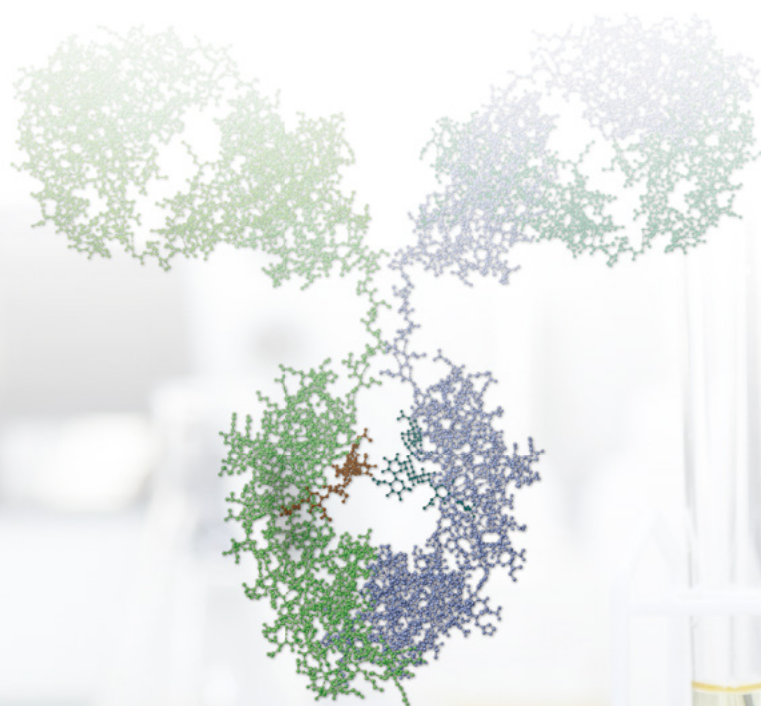
Gradient separation enables detection of trace PTH-amino acids.

Analysis Stability ▶ P. 4

Equipped with a high-performance detector and a solvent delivery pump that provides excellent pumping performance even in the micro flowrate range

Enhanced Functions for FDA 21 CFR Part 11 Compliance ▶ P. 6

Compliant with FDA 21 CFR Part 11 and PIC/S GMP Guideline when used with LabSolutions™ DB/CS

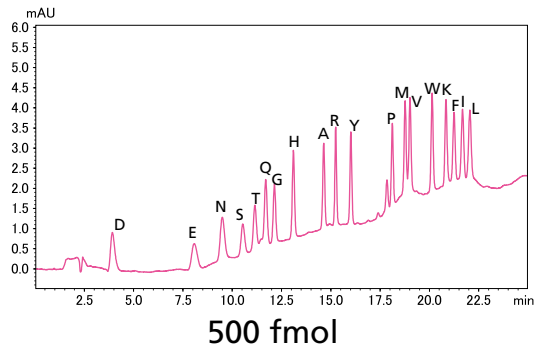
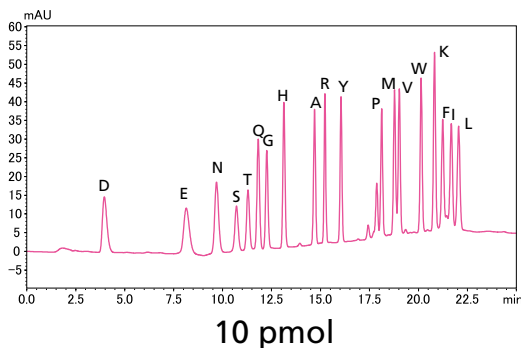




High-Sensitivity Analysis

A high-sensitivity flow cell enables high-sensitivity detection of PTH-amino acids, which allows for sequential analysis using trace samples.

Analysis of Standard PTH-Amino Acid Mixture

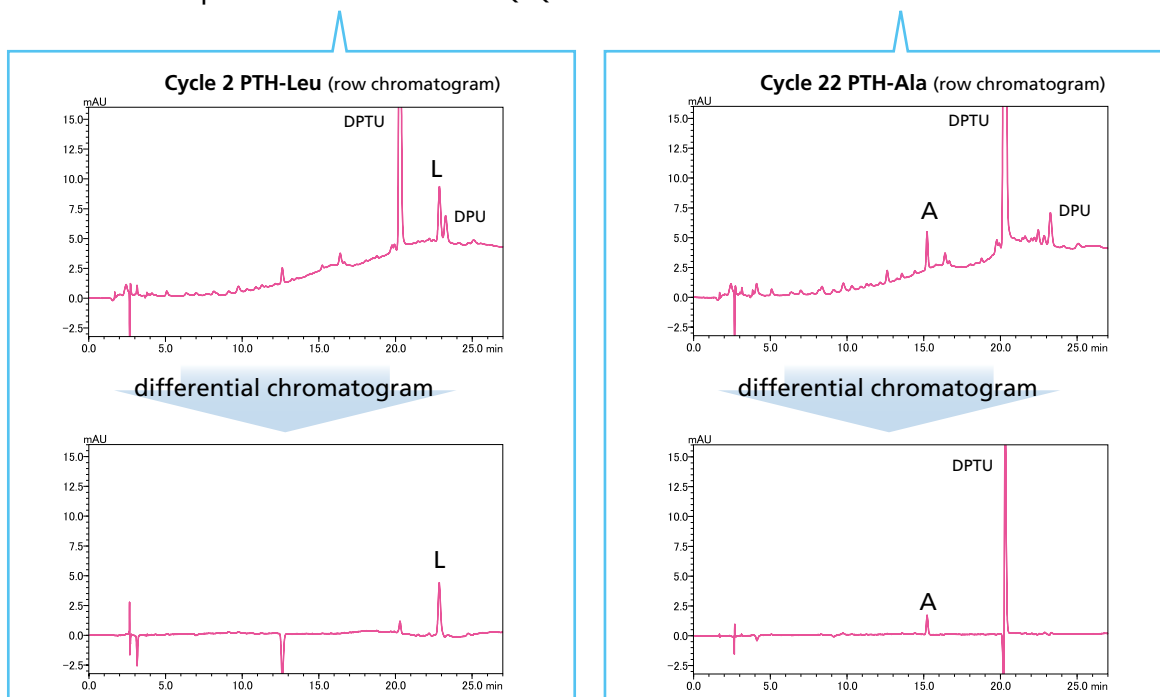


Analysis Stability

This system has high analysis stability because it is equipped with a high-performance detector and a solvent delivery pump that provides excellent pumping performance, even in the micro flowrate range, combine to ensure high analysis stability. Because chromatograms with good reproducibility can be obtained, peaks detected in the previous cycle can be canceled by performing differential chromatogram processing. This enables easy identification of PTH-amino acids even from trace samples.

Analysis of Horse Myoglobin (10 pmol)

Sequence: G-L-S-D-G-E-W-Q-Q-V-L-N-V-W-G-K-V-E-A-D-I-A-

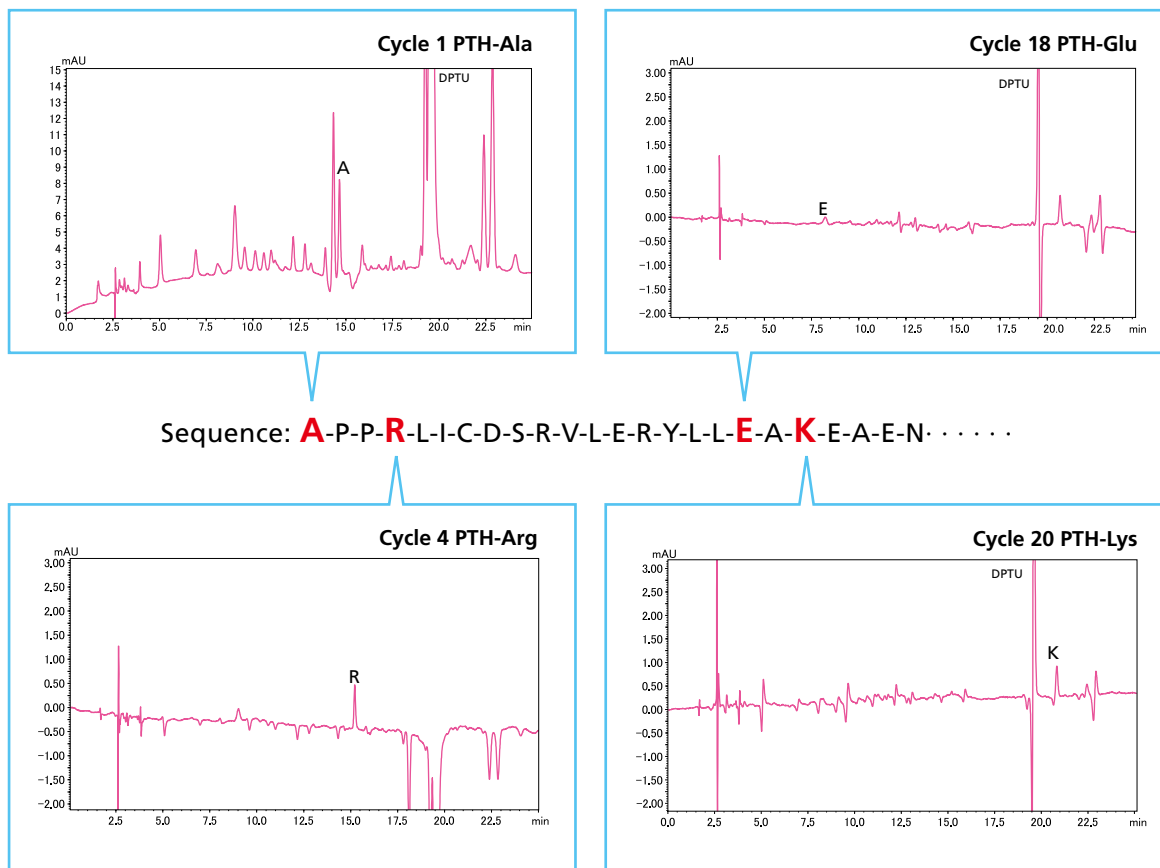


Example of High-Sensitivity Sequence Analysis Using Trace Samples

Erythropoietin Analysis

Erythropoietin is a hormone secreted by the kidney that stimulates red blood cell production.

Analysis of Erythropoietin (2 pmol)



Cycle 1: row chromatogram, Cycle 4,18,20: differential chromatograms (EPO; CALBIOCHEM® cat# 329871, Human, Recombinant)



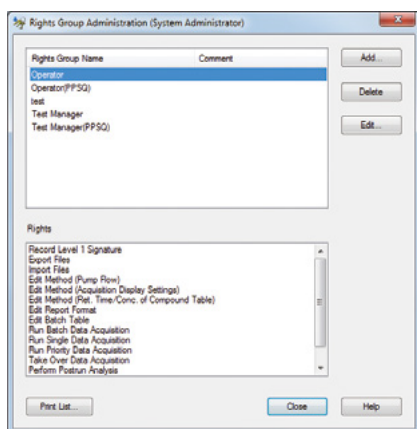
Enhanced Functions for FDA 21 CFR Part 11 Compliance

Instruments used in laboratories must comply with various regulations and guidelines, such as computerized system validation (CSV), FDA 21 CFR Part 11, PIC/S GMP Guidelines, Japanese Ministry of Health, Labour and Welfare guidelines on electronic records and electronic signatures, etc.

Numerous functions related to security policies, system policies, user authority, and user management enable compliance with these regulatory requirements and achieve more efficient system operations.

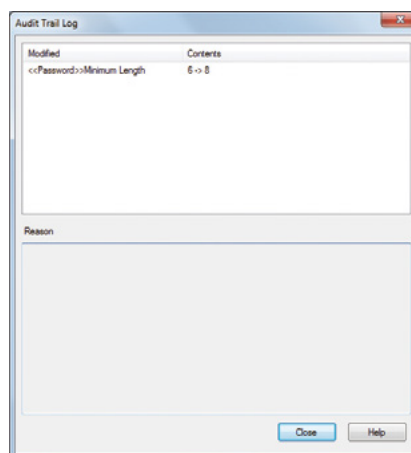
1 Security

Users are recognized from their user name and password and are managed in groups. Freely combining access authorities allows individual groups to be created. Clearly setting the access authority of each user prevents unauthorized setting changes, instrument operation, and data access.



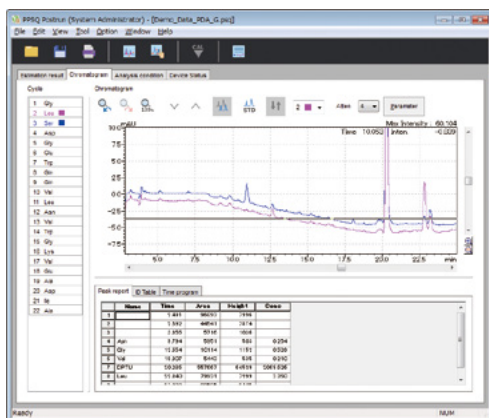
2 Audit Trail

Operation history such as logging in and out of the system, user/group changes, and the start and completion of measurement (audit trail) is recorded together with user name, date and time. The recorded operation history can be registered to a database so the history of the operation status and setting changes can be traced.

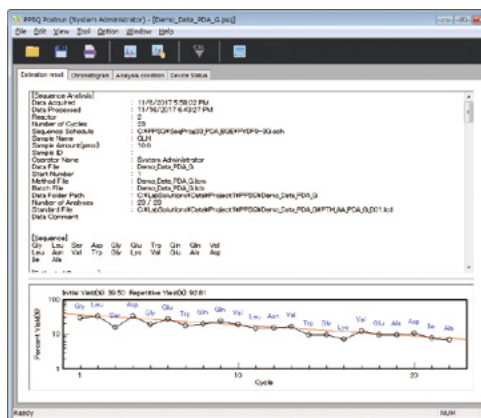


Simple and User-Friendly Data Analysis Function

Reprocessing of chromatograms, overlay of multiple chromatograms, and automatic estimation of amino acid sequences necessary for sequence analysis can be easily performed using dedicated protein sequencing software.



● The estimated sequences and sequence analysis results such as yield are displayed.



● Sequences can be easily identified on the screen by overlaying multiple chromatograms and moving chromatograms while they are overlaid.

Specifications

Main Unit	PPSQ-51A	PPSQ-53A
Reaction method	Edman degradation	Edman degradation
Reaction time	46.5 min/cycle	48 min/cycle
Number of reactors	1	3
Sample immobilization method	Glass fiber disk (8 mm dia.) or PVDF membrane	Glass fiber disk (8 mm dia.) or PVDF membrane
Reactor temperature control range	10 °C above room temperature to 60 °C	10 °C above room temperature to 60 °C
Converter temperature control range	10 °C above room temperature to 70 °C	10 °C above room temperature to 70 °C
Number of reagents/solvents	7	7
Reagent/solvent delivery method	Nitrogen gas pressure	Nitrogen gas pressure
Dimensions	W 510 × H 540 × D 500 mm	W 510 × H 540 × D 500 mm
Weight	43 kg	45 kg

PPSQ-51A Single Reactor



Offers highly cost-effective performance.

PPSQ-53A Triple Reactor
(Supports consecutive analysis of 3 samples.)



Using a triple reactor makes it possible to save time and effort, and gives greater freedom in the formulation of analysis programs.

Standard Configurations

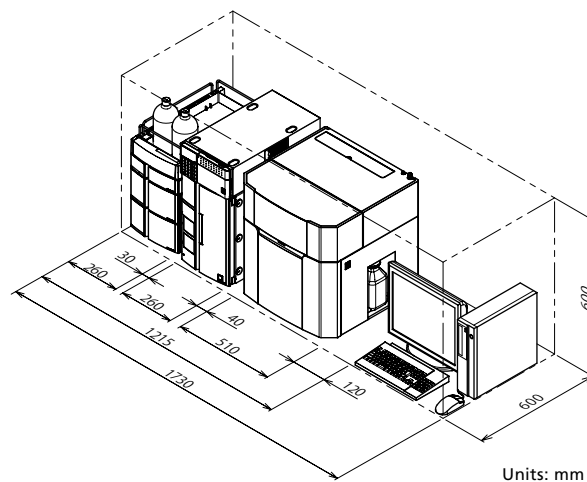
	PPSQ-51A System	PPSQ-53A System
Configuration	PPSQ-51A (main unit)	PPSQ-53A (main unit)
	LC-40D (two)	
	SPD-M30A	
	CTO-40C	
	DGU-403	

Other Items Provided by User

Installation space	Desktop: W 1,800 × D 600 × H 600 mm min. Weight: Approx. 120 kg
Power supply	120–230 V AC, 50/60 Hz, 1,500 VA max.
Nitrogen gas	Purity: 99.9999% min. A cylinder pressure regulator and gas tubing (10 m) are provided as standard accessories.
Exhaust equipment	In order to provide an exhaust for gases produced by waste liquids, an exhaust tube must either be connected to exhaust equipment or vented outside. An exhaust tube (20 m) is provided as a standard accessory.

Note: The required installation space and power supply may change according to the PC and display used.

Installation Example



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