C297-E109

SHIMADZU
Excellence in Science

Protein Sequencer

PPSQ-51A / 53A

Protein Sequencer

PPSQ-51A / 53A

Greater Simplicity and Reliability in the Determination of Amino Acid Sequences Software Compliant with FDA 21 CFR Part 11


LC-20AT
CTO-20A
SHIMADZU
PPSQ-53A
PROTEIN SEQUENCER

Analytical Stability and Higher Detection

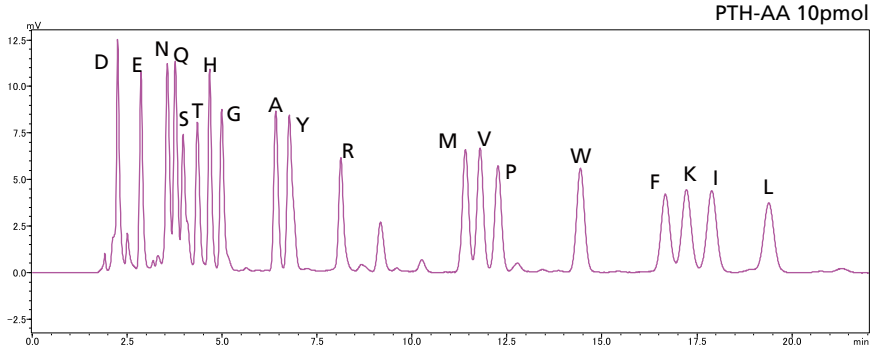
Baseline Stability

PPSQ series protein sequencers separate PTH-amino acids isocratically. This improves baseline stability and allows high-sensitivity analysis of PTH-amino acids.

Retention Time Reproducibility

Isocratic sequence analysis provides more stable retention times. Therefore, peaks detected in previous cycles can be cancelled using substation chromatogram processing, making it easier to identify sequences.

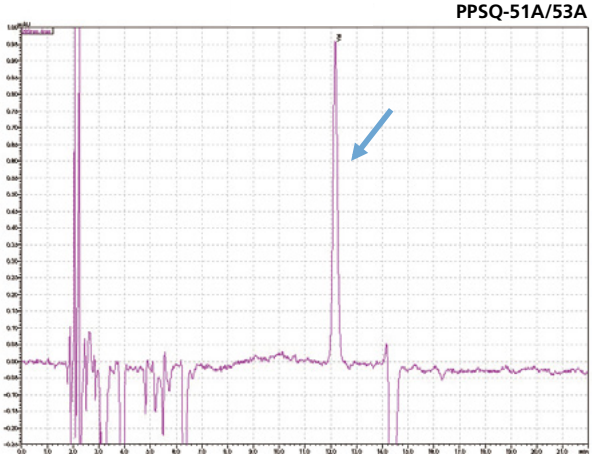
PTH-AA 10pmol



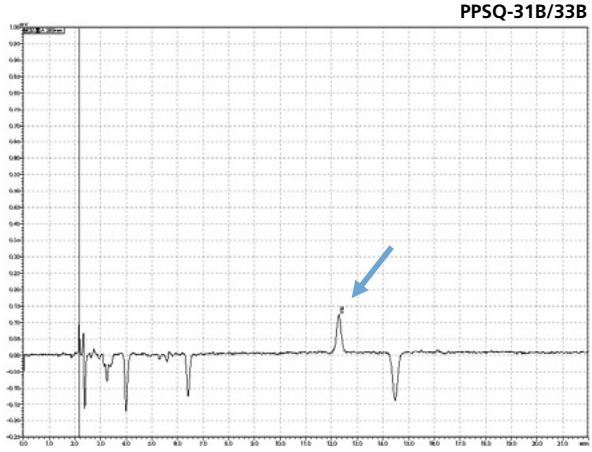
Higher Detection

Cycle 10 PTH-Val

PPSQ-51A/53A

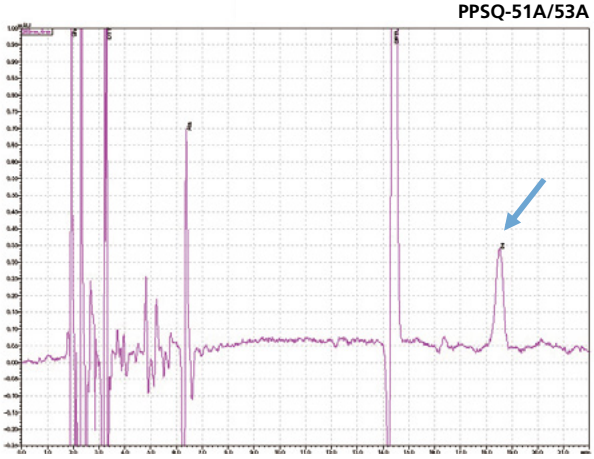


PPSQ-31B/33B

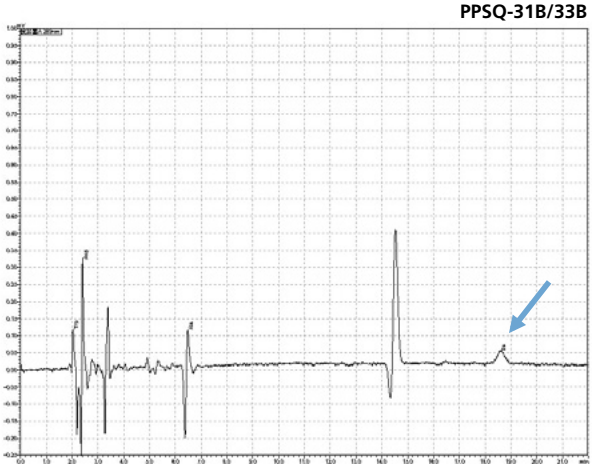


Cycle 21 PTH-Ile

PPSQ-51A/53A



PPSQ-31B/33B



Sample: Horse myoglobin 10pmol

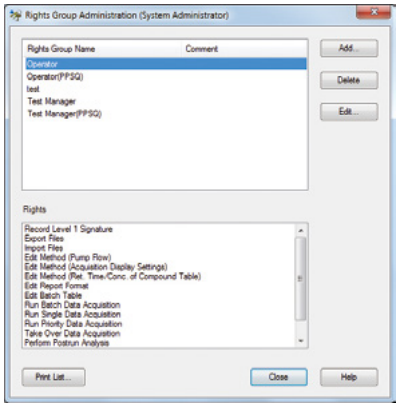
Results show the subtraction chromatograms by SPD-M30A (PPSQ-51A/53A) and SPD-20A (PPSQ-31B/33B) connected tandemly after Edman degradation.

Compliance with FDA 21 CFR Part 11

LabSolutions PPSQ software provides compliance with FDA 21 CFR Part 11 guidelines and enables compliance with the security, user management, and audit trail requirements specified by FDA 21 CFR Part 11.

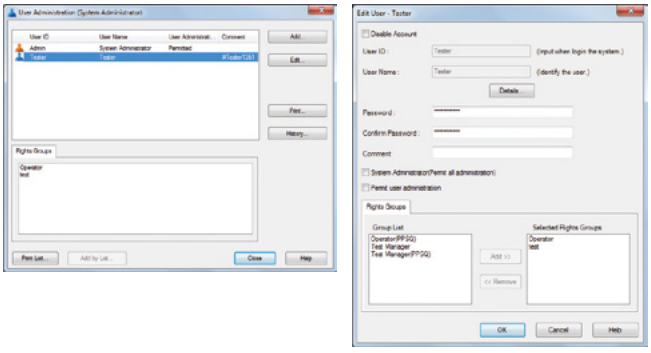
1 Security

Users are managed on the basis of groups, with each user being recognized by means of a username and password. Unique groups can be created by including persons having different access privileges. Clearly defining each user's access privileges prevents unauthorized changes to settings, instrument operation, and data access.



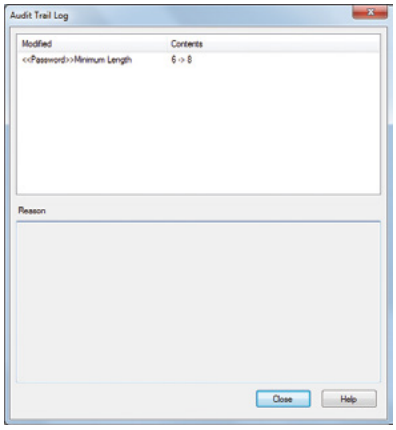
2 User Management

LabSolutions' user administration comprises the setting of rights groups and assignment of rights to users just as in Windows. Access rights required for each user can be set by assigning various levels of access to each user. This helps achieve effective user administration and more efficient laboratory operations.



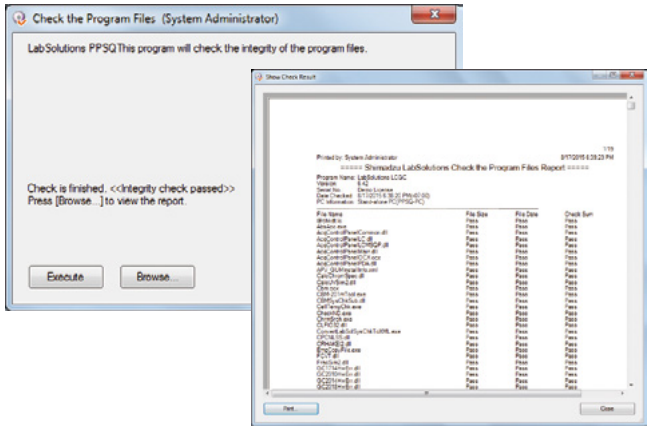
3 Audit Trail

Logins and logouts to the system, changes in users and groups, and the start and completion of acquisition, together with the username and the time, are all recorded. The recorded operational log can be registered in the database to provide traceability.



4 Software Validation

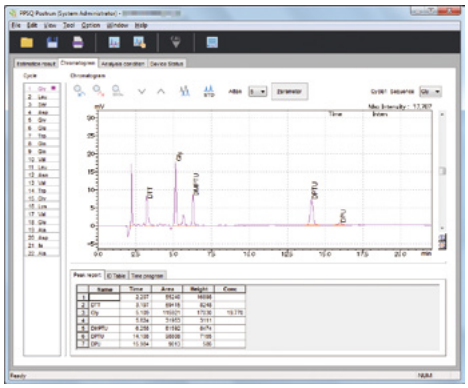
The integrity of the programs that comprise the system and the raw data acquired by instruments can be checked, ensuring the reliability of the system and data.
The results of these alteration checks can be managed as printouts.



Simple, Easy-to-Use Data Analysis Functions

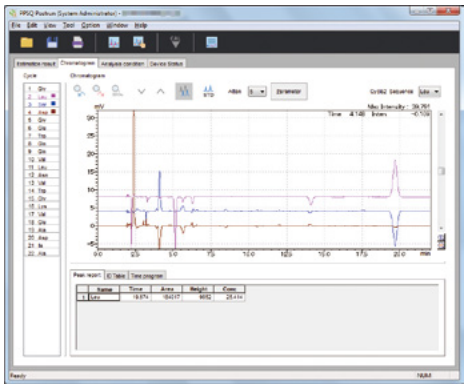
Specialized protein sequencer software makes it simple to perform the reprocessing of chromatograms, the overlay of multiple chromatograms, and the automatic estimation of amino acid sequences, which are required for sequence analysis.

Reprocessing of chromatograms required for data analysis



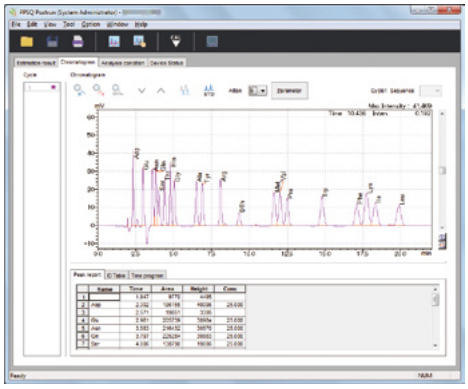
- Chromatogram peak integration, printing, and other processes can be performed on a per-sample basis.

Overlay of multiple chromatograms

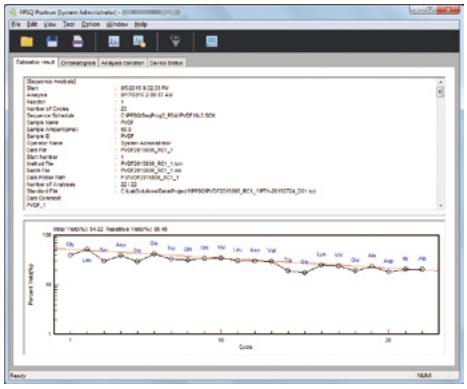


- Displays multiple chromatograms. Analysis cycles can be updated simply by clicking a button.
- Window allows easy identification of sequences.

Automatic estimation of amino acid sequences



- Calibrates PTH-amino acid retention times.
- Retention times can be edited simply by selecting a PTH-amino acid and clicking a peak.



- Automatically generates a report containing analytical parameters, estimated sequences, yield rates, and other information.

Automatic Sequence Estimation

Sequences are automatically estimated after analysis of each cycle is complete. Up to four candidate amino acids are displayed together with their certainty levels.

Customized Reports

Reports containing information such as analytical parameters, estimated sequences, and yield rates are automatically created.

Yield Graph Display

Initial and repeated yield rates are calculated and displayed in graph form. Amino acids used for calculations can be freely selected.

Specifications

Main Unit	PPSQ-51A/53A
Reaction method	Edman degradation
Reaction time	PPSQ-51A: 46.5 min/cycle PPSQ-53A: 48 min/cycle
Number of reactors	PPSQ-51A: 1 PPSQ-53A: 3
Sample immobilization method	Glass fiber disk (8 mm dia.) or PVDF membrane
Reactor temperature control range	10 °C above room temperature to 60 °C
Converter temperature control range	10 °C above room temperature to 70 °C
Number of reagents/solvents	7
Reagent/solvent delivery method	Nitrogen gas pressure
Dimensions	W510 × D500 × H540 mm
Weight	PPSQ-51A: 43 kg PPSQ-53A: 45 kg

Solvent Delivery Module	LC-20AT
Flow rate setting range	0.001 to 10.000 mL/min
Dimensions	W260 × D420 × H140 mm
Weight	11 kg

Detector	SPD-M30A
Wavelength setting range	190 to 700 nm
Dimensions	W260 × D500 × H140 mm
Weight	12 kg

Oven	CTO-20A
Temperature control range	10 °C above room temperature to 60 °C
Dimensions	W260 × D420 × H415 mm
Weight	20 kg

Control PC	
OS	Windows 7 Professional SP1 32/64 bit

Note: In the interests of product improvement, these specifications may change without notice.
Note: Windows is a registered trademark of Microsoft Corporation in the U.S. and other countries.

Standard Configurations

PPSQ-51A System

Configuration	PPSQ-51A (main unit)
	LC-20AT
	SPD-M30A
	CTO-20A

PPSQ-53A System

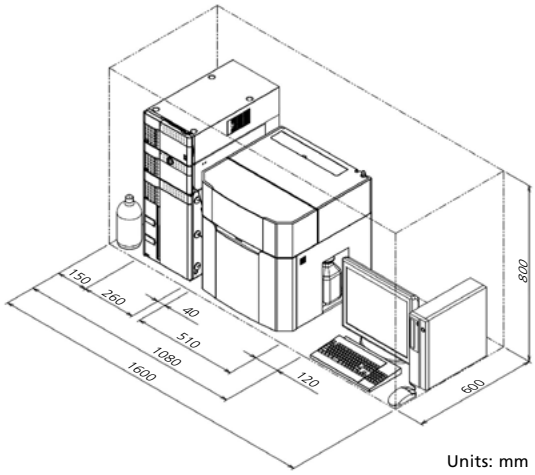
Configuration	PPSQ-53A (main unit)
	LC-20AT
	SPD-M30A
	CTO-20A

Other Items Provided by User

Installation space	Desktop: W1,600 × D600 × H800 mm min. Weight: Approx. 100 kg
Power supply	120-230 VAC, 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



Units: mm

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.

Shimadzu Corporation
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