

Protein Sequencer

# PPSQ-51A/53A



Protein Sequencer

# PPSQ<sup>™</sup>-51A/53A

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

## **Analytical Stability and Higher Detection ▶ P. 4**

Baseline stability  
Retention time reproducibility  
Higher detection

## **Compliance with FDA 21 CFR Part 11 ▶ P. 5**

Security  
User management  
Audit trail  
Software validation

## **Simple, Easy-to-Use Data Analysis Functions ▶ P. 6**

Reprocessing of chromatograms  
Overlay of multiple chromatograms  
Automatic estimation of amino acid sequences



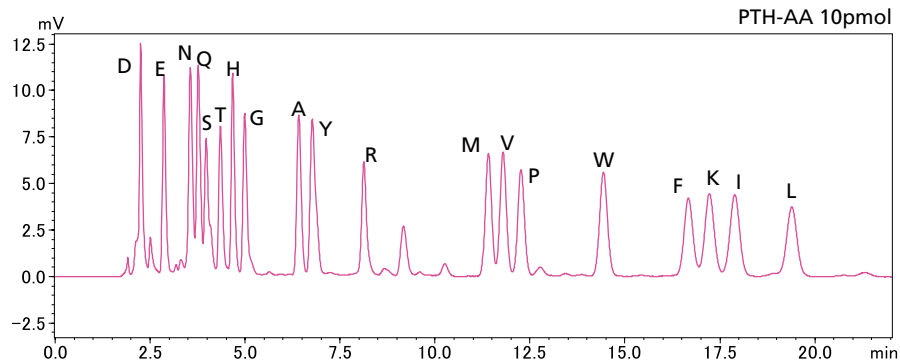
# Analytical Stability and Higher Detection

## Baseline Stability

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

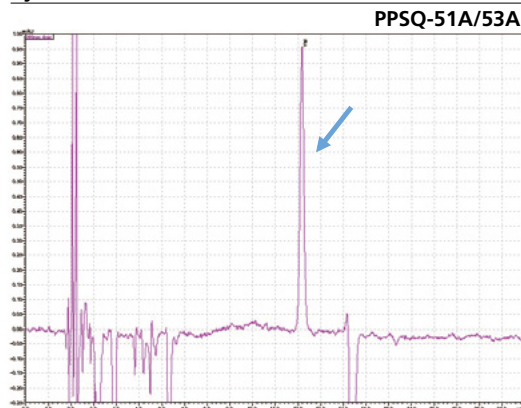
## Retention Time Reproducibility

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

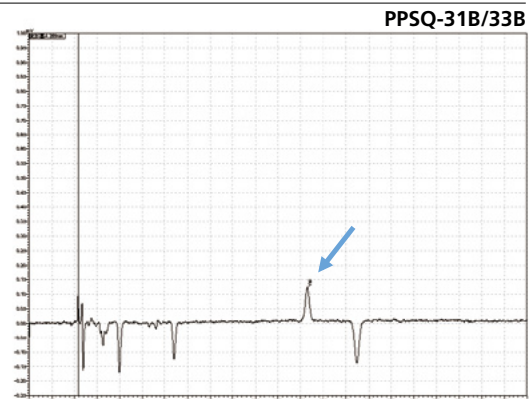


## Higher Detection

### Cycle 10 PTH-Val

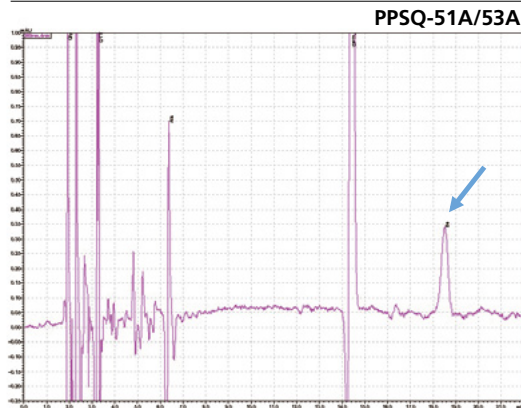


PPSQ-51A/53A

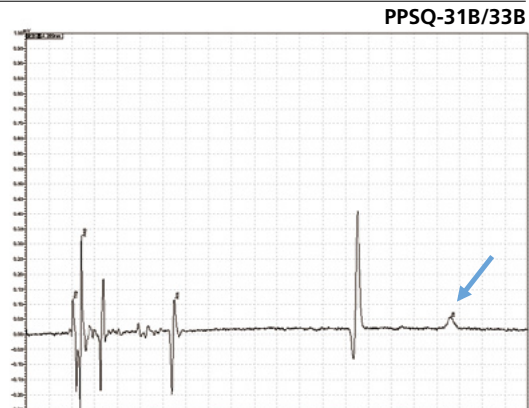


PPSQ-31B/33B

### Cycle 21 PTH-Ile



PPSQ-51A/53A



PPSQ-31B/33B

Sample: Horse myoglobin 10pmol

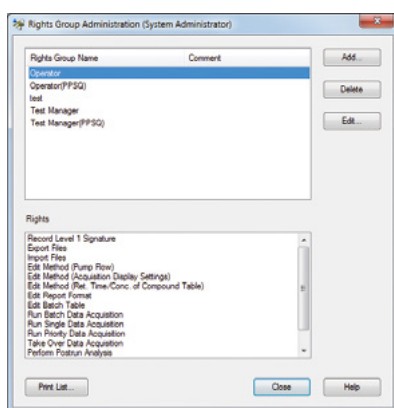
Results show the subtraction chromatograms by SPD-M30A (PPSQ-51A/53A) and SPD-20A (PPSQ-31B/33B) connected tandemly after Edman degradation.

# 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.

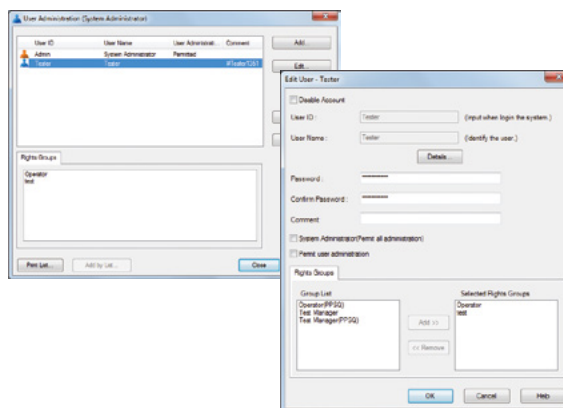
## 1 Security

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.



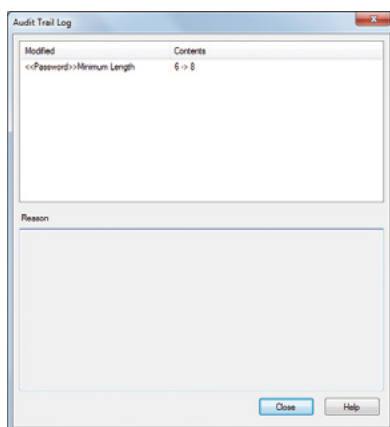
## 2 User Management

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

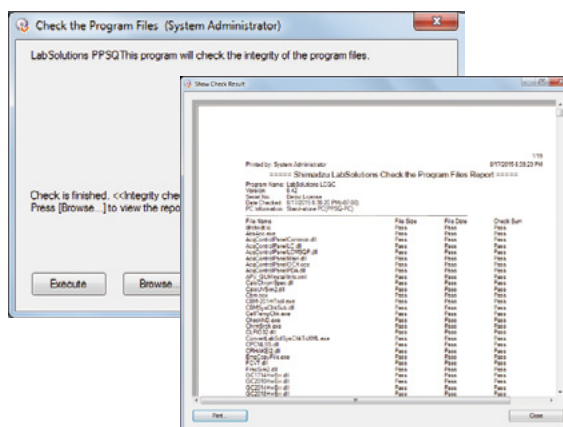
Logins and logouts to the system, changes in users and groups, and the start and completion of acquisition, together with the username and the time, are all recorded. The recorded operational log can be registered in the database to provide traceability.



## 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.



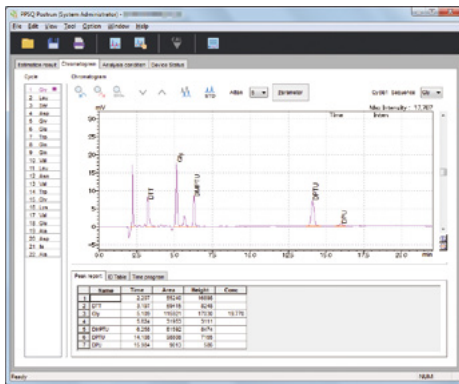
# Simple, Easy-to-Use Data Analysis Functions

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.

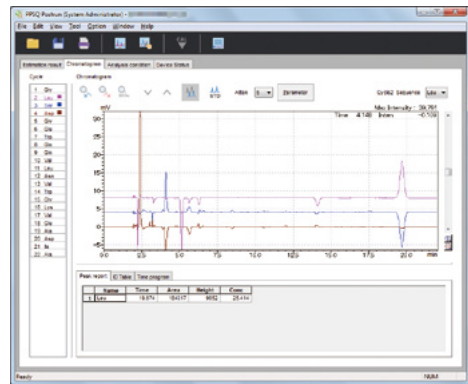
**Reprocessing of chromatograms required for data analysis**

**Overlay of multiple chromatograms**

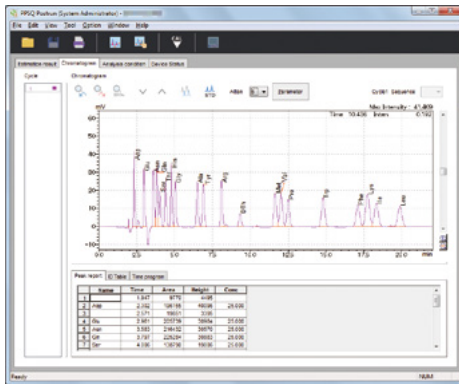
**Automatic estimation of amino acid sequences**



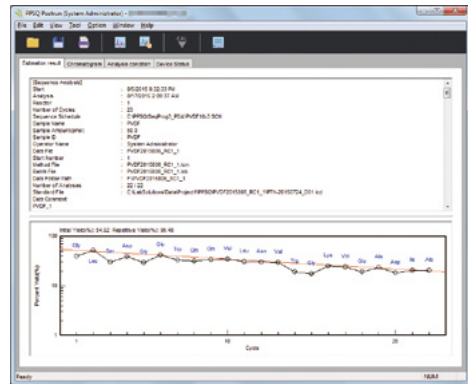
- Chromatogram peak integration, printing, and other processes can be performed on a per-sample basis.



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

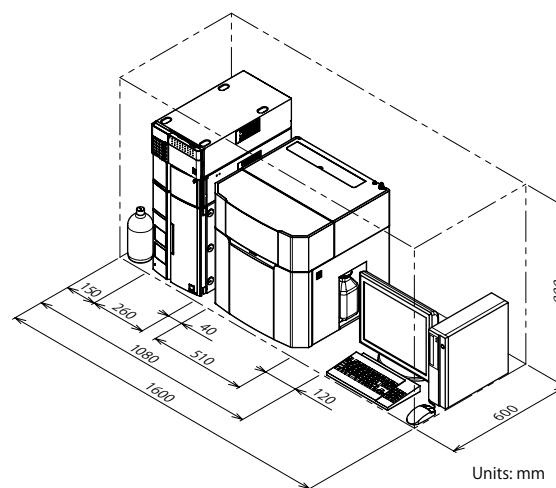
## Standard Configurations

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

## Other Items Provided by User

Installation space	Desktop: W 1,600 × D 600 × H 800 mm min. Weight: Approx. 100 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.

## Installation Example



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

PPSQ and LabSolutions are trademarks of Shimadzu Corporation.

# ООО «Диаэм»

**Москва**

ул. Магаданская, д. 7, к. 3 ■ тел./факс: (495) 745-0508 ■ [sales@dia-m.ru](mailto:sales@dia-m.ru)

[www.dia-m.ru](http://www.dia-m.ru)

**Новосибирск**  
пр. Академика  
Лаврентьева, д. 6/1  
тел.  
(383) 328-0048  
[nsk@dia-m.ru](mailto:nsk@dia-m.ru)

**Казань**  
ул. Парижской  
Коммуны, д. 6  
тел.  
(843) 210-2080  
[kazan@dia-m.ru](mailto:kazan@dia-m.ru)

**С.-Петербург**  
ул. Профессора  
Попова, д. 23  
тел.  
(812) 372-6040  
[spb@dia-m.ru](mailto:spb@dia-m.ru)

**Ростов-  
на-Дону**  
пер. Семашко, д. 114  
тел.  
(863) 303-5500  
[rnd@dia-m.ru](mailto:rnd@dia-m.ru)

**Пермь**  
Представитель  
тел.  
(342) 202-2239  
[perm@dia-m.ru](mailto:perm@dia-m.ru)

**Воронеж**  
Представитель  
тел.  
(473) 232-4412  
[voronezh@dia-m.ru](mailto:voronezh@dia-m.ru)

**Армения**  
Представитель  
тел.  
(094) 01-0173  
[armenia@dia-m.ru](mailto:armenia@dia-m.ru)

**Узбекистан**  
Представитель  
тел.  
(90) 354-8569  
[uz@dia-m.ru](mailto:uz@dia-m.ru)