membraPure
Water Purification Systems • TOC Analyzer • Chromatography

Amino Acid Analysis

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Technical Specifications

Pump

Simultaneous 2- piston technology of reagent and eluent lines
Pump head made of titanium material
Max. pressure: 400 bar
Flow rate: 0,01 - 10,00 mL/min
Reproducibility of flow rate: 0,1 % (RSD) at 100 µL/min

Tubings

PEEK and FEP

Microphotometer

Wave length: 570 nm, 440 nm
Noise: 0,02 mAU, 1s
Drift: < 1,0 x 10^{-5} AU / h
Linearity deviation: 0,3 % bei 1 AU
Measuring range: high, low
Analog signal: 0 - 5 V
Base line adjustment: free programmable
Auto-Zero function: free programmable
Flow cell: 10 µL volume
maintenance free

Separation column

Cation exchange resin: 3µm
Different dimensions; Stainless steel or PEEK
Temperature adjustment by Peltier elements
Temperature range: 20 - 100° C
Temperature accuracy: 0,1° C

Autosampler Option 1

Patented x y z- robot; sample cooling 8° C by Peltier elements
Syringe pump, motor- injection valve
Sample rack: 4 x 48 Vials (1,5 mL Standard) or
2 micro plates (96 format)
Dosage: 1 - 40 µL in 1 µL- steps free programmable

Autosampler Option 2

sample cooling as low as 4° C possible by Peltier elements
Syringe pump, motor- injection valve
Sample rack: 2 x 48 Vials (1,5 mL Standard)
Dosage: full loop (100 µL) or 1 - 25 µL in 1 µL- steps free programmable

Eluents and Reagent

Reagent- and washing solution, integrated into central unit
5 eluent bottles, 1 regeneration bottle integrated in eluent unit

Reactor

Highly inert material
Peltier elements
Temperature range 50 - 150° C
Auto-Shut-down safety routine in case of failure alarm

Control- Software

32 bit software ***iControl***
including optimized separation programs
comfortable creation & modification of separation programs
automatic log-file generation of analysis parameters

Data-acquisition/ handling Software

Data- acquisition and Data- analysis by ***aminoPeak*** software
specially designed for amino acid analysis,
fast and user-friendly

Interfaces

2 USB Ports for ARACUS- operation and
signal registration of photometers

Ready to use reagent kits

Kits including eluents, reagent and additonal dilutions buffers,
pre- and separation column for 500 or 1000 analytical runs
Reproducibility of retention time: <0,1%, RSD
Reproducibility of peak area: <1,2%, RSD

ARACUS

Amino Acid Analyzer

innovative technology combined
with classical method

www.membrapure.de

All information is subject to change without further notice

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Your local distributor:

ARACUS - highest precision - easy handling

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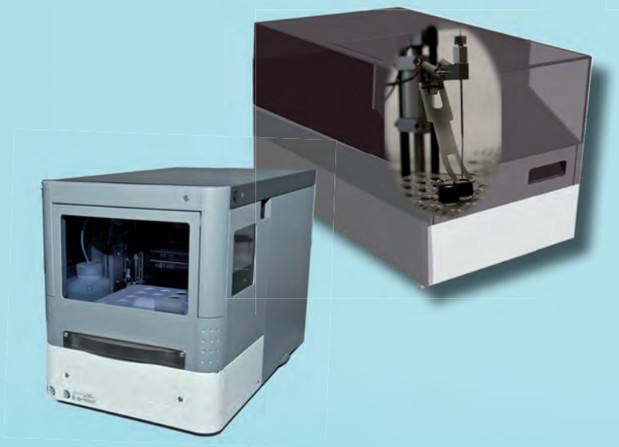
The amino acid analyzer ***ARACUS*** with its modular concept is the ideal instrument for the analysis of amino acids in research, quality control and in the clinical laboratory.

It combines innovative technologies with the classical routine analysis of amino acids by the post- column derivatisation with ninhydrin.

This produces on the day by day use results with the highest precision, reproducibility and accuracy.



The setup of the instrument allows the continuous analysis of up to 192 samples (4 x48 vials, autosampler option 1) or 96 samples (2 x48 vials, autosampler option 2).

The samples are stored in the cooled autosampler and the samples are injected without sample loss.

A washing routine of the injection valve and syringe pump guarantees zero cross-contamination.

As a third option the ***ARACUS*** instrument is available with a manual injection system.

The eluent rack contains 6 glass bottles. The fluid volume of each bottle is actively monitored during operation.

Eluents, ninhydrin and washing reagent are selectively chosen through buffer selection valves and degassed in micro vacuum chambers. The innovative technology of the pump allows the simultanous operation of two fluid lines (eluent side and reagent side), which guarantees a constant mixing.

The maintenance free photometers detect the separated amino acids at 570 nm and 440 nm and the signals are registered by the software ***aminoPeak***.

Physiological amino acids

Analysis of free amino acids in biological and medical applications (serum, plasma, urine, culture media) or food.

Proteinogenic amino acids

Analysis of proteins, peptides, feedstuff or nutrition after hydrolysis.

Analysis of specific amino acids

PKU or homocysteine are two examples of specific applications with dedicated short run programs.

Innovative chemistry

The concept of the ready-to-use eluent and reagent kits allows the reproducible analysis of the amino acid samples. Each kit is produced under standardized procedures, tested and certified before shipping.

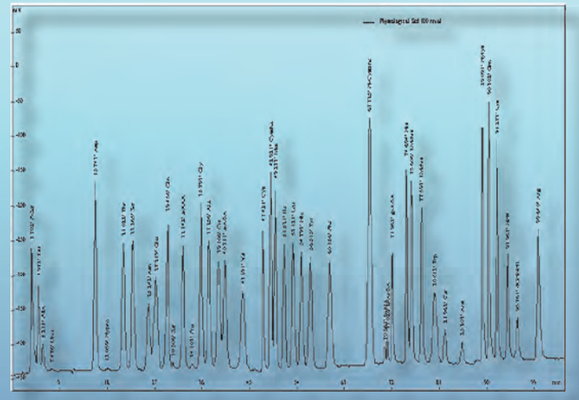
Depending on the application, the eleunt and reagent kit contains the necessary amount for 500 or 1000 analysis runs.

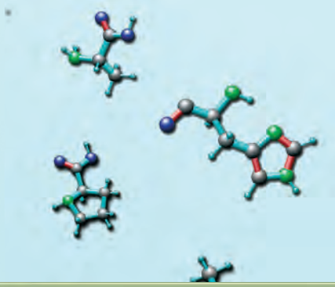
Operation Control

ARACUS is operated with the user friendly, self-explanatory software ***iControl.*** Implemented, optimized separation programs are correlated with each sample for the analysis. Correlation with new samples can be done when the instrument is analyzing a sample.

The current status of important instrument parameters is shown as well as the fluid volumes of each eluent and reagent bottle. As soon as a minimal value is reached, different alarm levels inform the operator.

All operation parameters and events of each analysis are documented in a log-File.





Data Acquisition and Handling

The datat acquisition and analysis software ***amino-Peak*** records simultaneously two analogue channels (570 nm, 440 nm). Chromatograms are shown on-line.

Internal data bank allows the fast peak identification. Quantitative calculations are performed with internal or external standards, dilution and/or multiplication factors.

Several analysis runs can be compared using compiler programs. The results of each analysis is documented in an individual report.