



ARACUS

INNOVATIVE TECHNOLOGY COMBINED
WITH CLASSICAL METHOD



THE AMINO ACID ANALYSER 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 ninhydrine.

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 96 samples (2 x48 vials).

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.

The **ARACUS** instrument is also 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, ninhydrine and washing reagent are selectively chosen through buffer selection valves and degassed in micro vacuum chambers. The innovative technology of the pump allows the simultaneous operation of two fluid lines (eluent side and reagent side), which guarantees a constant mixing.

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



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 eluent and reagent kit contains the necessary amount for 500 or 1000 analysis runs. No inert gas necessary for the eluents due to our innovative formulation.

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. Data analysis, reintegration and chromatogram view of previous samples can be done while instrument is analysing a sample.

The current status of important instrument parameters are 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 data acquisition and analysis software aminoPeak 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.

As option Clarity can be used if 21 CFR Part 11 conformity is required.



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.

SPECIFIC AMINO ACIDS

MSUD IS A EXAMPLE OF A SPECIFIC APPLICATION WITH DEDICATED SHORT RUN PROGRAM.

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AMINO

ACID ANALYSIS

TECHNICAL SPECIFICATIONS

PUMP

- Simultaneous 2- piston technology of reagent and eluent line
- Pump head made of biocompatible ceramic
- 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: $< 1,0 \times 10^{-5}$ 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
- Stainless steel
- Temperature adjustment by Peltier elements Temperature range: 20 - 100°C Temperature accuracy: 0,1° C

AUTOSAMPLER

- 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 in 3 different modes: full loop (100 µL), microliter pickup (1 - 35 µL) or partial loop

ELUENTS AND REAGENT

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

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 - OPTIONS

- Data- acquisition and Data- analysis by aminoPeak software
- specially designed for amino acid analysis,
- fast and user-friendly
- 21 CFR Part 11 conform Data- acquisition and Data- analysis by Clarity software to work in regulated environments

READY TO USE REAGENT KITS

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

