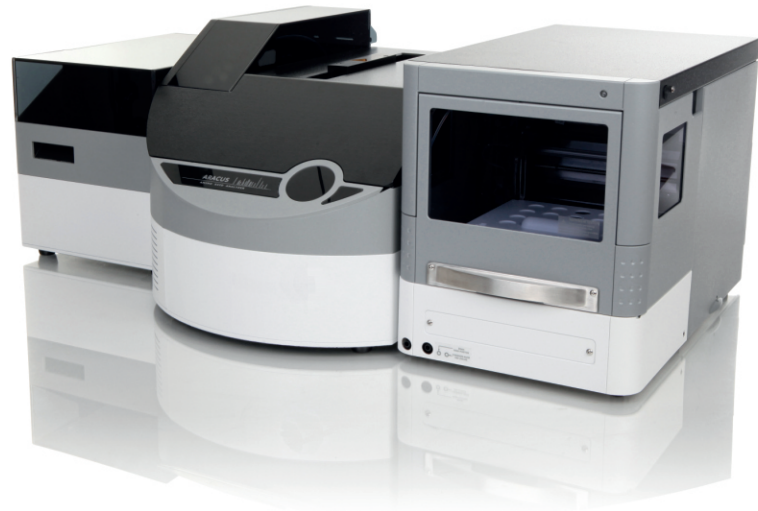


# ARACUS

*Highest accuracy  
in analysis of amino acids*



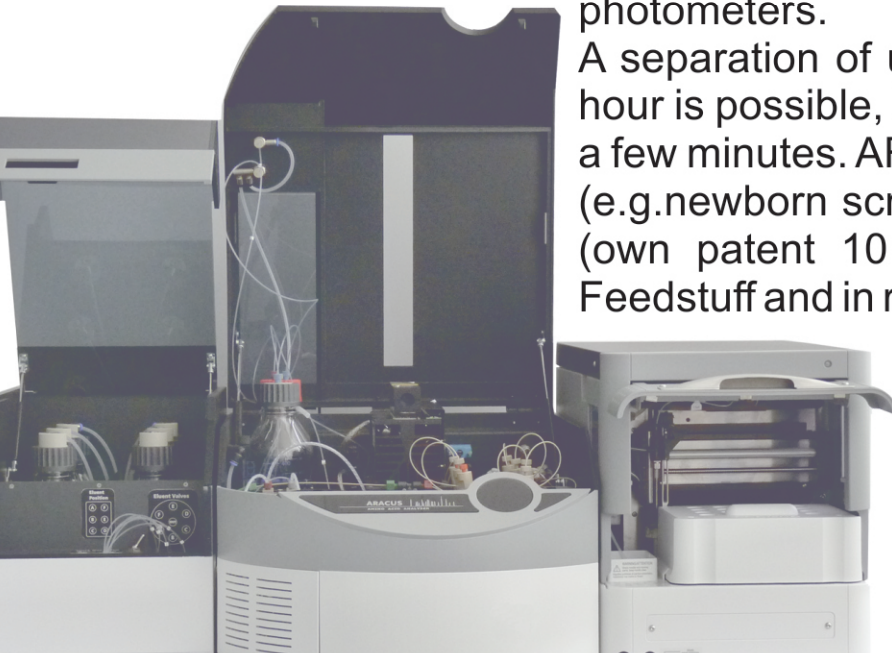
**AMINO**  
ACID ANALYZER



# AMINO ACID ANALYZER

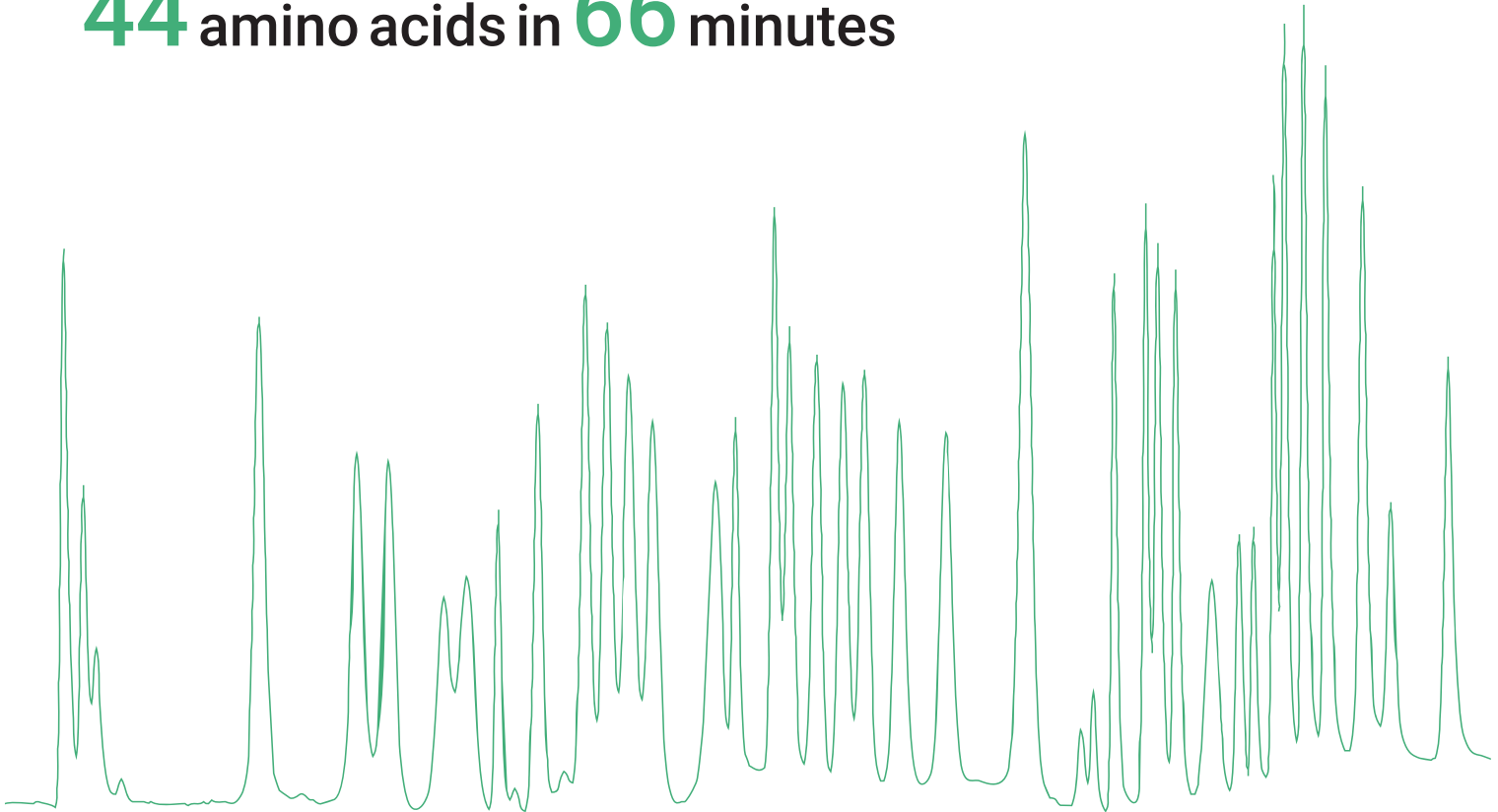
ARACUS works according to gold standard of post column derivatization with ninhydrin, with detection at 440 nm and 570 nm using maintenance free LED photometers.

A separation of up to 44 amino acids in about one hour is possible, but also of a few amino acids within a few minutes. ARACUS is used in clinical laboratory (e.g. newborn screening), in quality control for Food (own patent 10 2016 010 887), Beverages and Feedstuff and in research.



**55 %** faster than traditional

**44** amino acids in **66** minutes





The setup of the instrument allows the continuous analysis of 96 samples in a cooled autosampler. The pump allows the simultaneous operation of two fluid lines (eluent side and reactive side), which guarantees a constant mixing.

Eluents and reagent solution are selectively chosen through valves and are ideally mixed to each other. The addition of ninhydrin provides a quantitative analysis statement. A washing routine of the injection valve and syringe pump avoids cross contaminations. The level of the individual reagents can be monitored during the runs and warns the user if the quantity is no longer sufficient.

## Applications

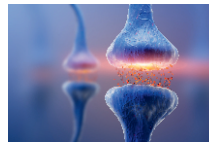
### Determination of free/ physiological amino acids in blood plasma, serum, saliva and urine

- newborn screening
  - Argininemia (ARG)
  - Arginosuccinic aciduria (ASA)
  - Citrullinemia (CIT)
  - Homocystinuria (HCY)
  - Hyper methioninemia (MET)
  - Maple syrup urine disease (MSUD)
  - Ornithine transcarbamylase deficiency (OTC)
  - Phenylketonuria (PKU)
  - Tyrosinemia (TYR)
- cardiovascular diseases
- Diabetes type II



### Determination of biogenic amine for the investigation of metabolic processes

- plant
  - growth factor: Tryptamine
- animal & human
  - neurotransmitter: Histamine, Serotonin, Dopamine etc.



### Determination of hydrolysed amino acids in food, beverages and feedstuff

- food
  - meat
  - cheese



- beverages
  - beer
  - milk
  - juice
  - tea
  - wine



- feedstuff
  - fish feed



## Technical Specifications



method	post column derivatization
autosampler	2 racks, each of them with space for 48 vials, sample cooling dosage in 3 different injection modes: full loop (100 $\mu$ L), partial loop (5 - 50 $\mu$ L), microliter pickup (1 - 35 $\mu$ L)
column	stainless steel, cation exchange resin reproducibility of retention time < 0.1 % RSD reproducibility of peak area ~ 0.5 % RSD
column oven	20 - 80 °C, accuracy 0.1 %
reactor temperature	20 - 130 °C
spectroscopic detection	LED photometers (440 nm + 570 nm), 8 years warranty measuring range: high, low flow cell: 10 $\mu$ L volume, 3 years warranty

## Technical Specifications

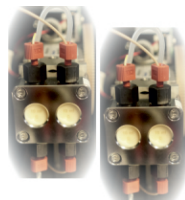
detection limit	< 5 nmol/mL
quantification limit	> 10 nmol/mL (with OPA method < 1 nmol/mL)
pump system	single pump (ARACUS), dual pump (ARACUS advanced) max. pressure: 400 bar   flow rate: 0.01 - 10.00 mL/min reproducibility of low rate: 0.1 % RSD at 100 µL/min
ready to use kits	kits including eluents, reagent and additional dilution buffer, ammonia adsorber and separation columns for 500 - 1000 runs
control software & Data acquisition	Clarity (21 CFR Part 11 compliant) or AminoPeak
dimensions, weight, power	1080 x 370 x 690 mm*, 60 kg, 110 - 230 V

\* 800 mm with opened main unit

## Options

### ARACUS advanced

2 pump system allows to operate in a single fluidic line for buffer and reagent.



### software 21 CFR Part 11 compliance

Manual and automatic peak integration with integrated IQ/OQ procedure for software (only available with software Clarity)

### inert gas

It supplies the main unit and eluent box with a protective gas atmosphere by reducing the presence of atmospheric oxygen to enhance the signal to noise ratio.



### level control

Active control of fluid volume by weight cell of each bottle. (only available with software Aminopeak)



### OPA method

Sensitive fluorescent detection reagent for amines with o-phthalaldehyde (OPA). Configuration ARACUS advanced is needed.





# AMINO ACID ANALYZER



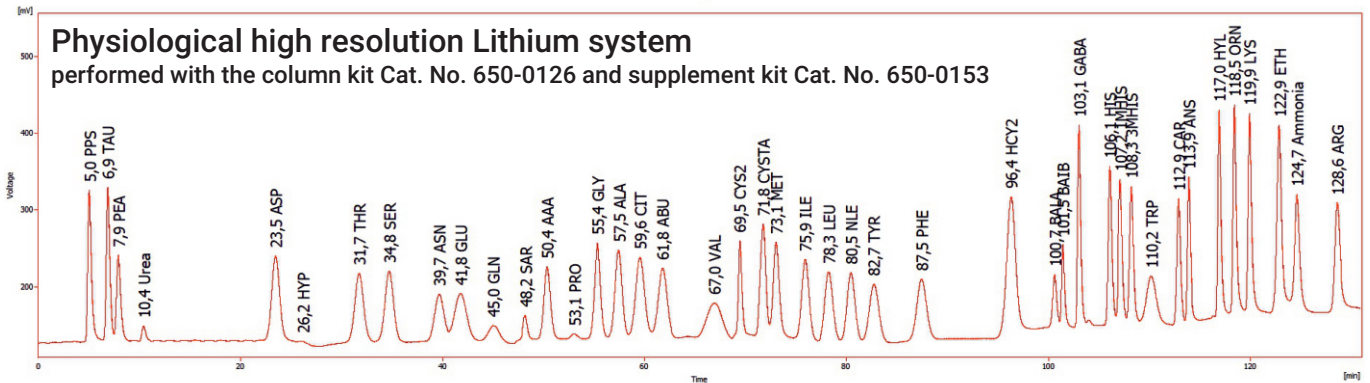
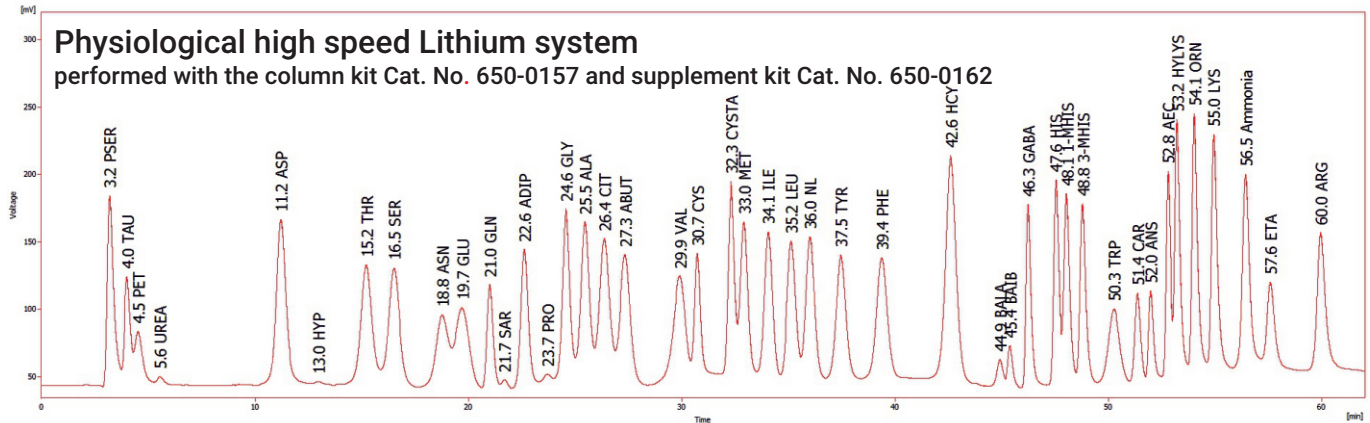
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## Separation performance



# Separation performance

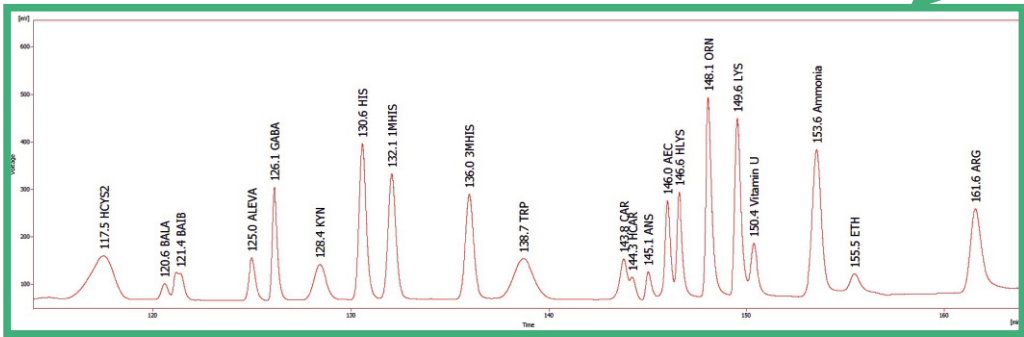
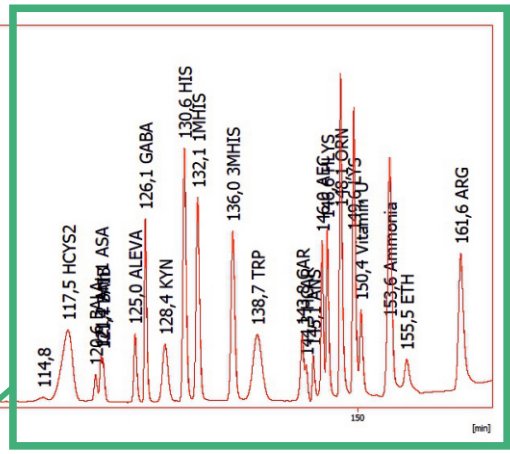
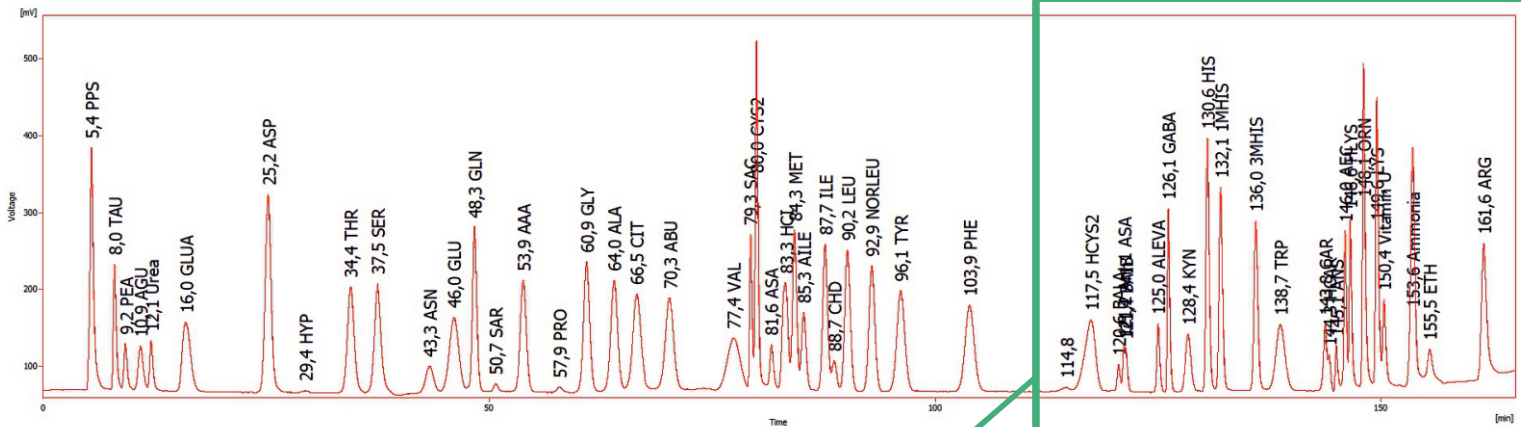


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Physiological advanced plus  
Lithium system  
performed with the column kit  
Cat. No. 650-0178 and supplement kit  
Cat. No. 650-0131



# AMINO ACID ANALYZER



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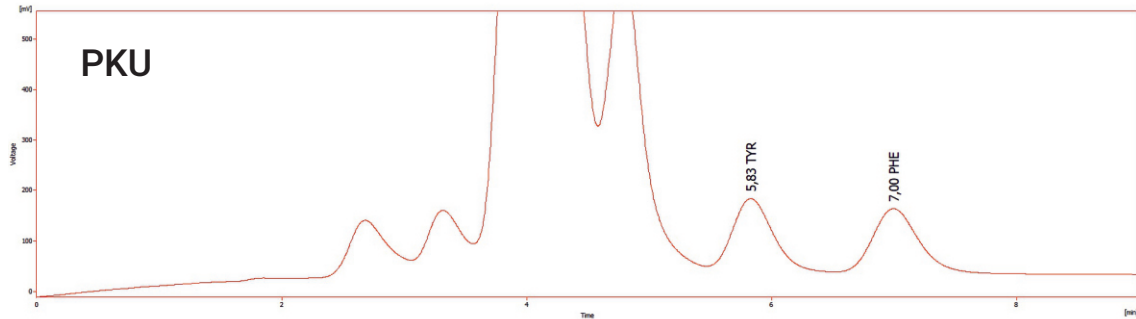
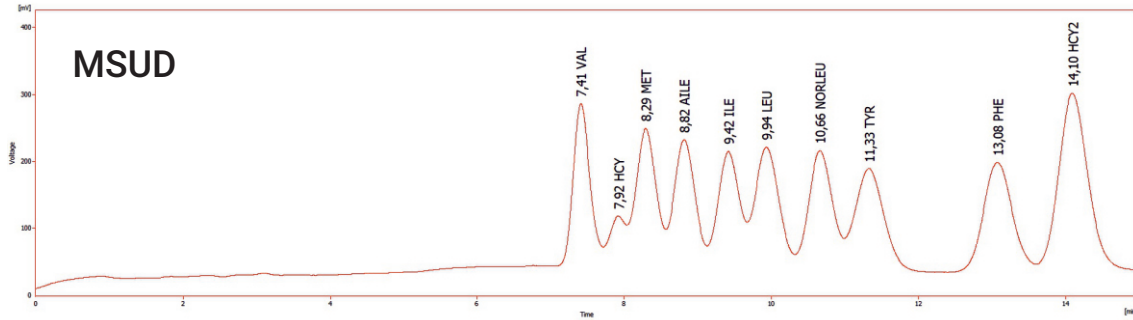
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## Separation performance

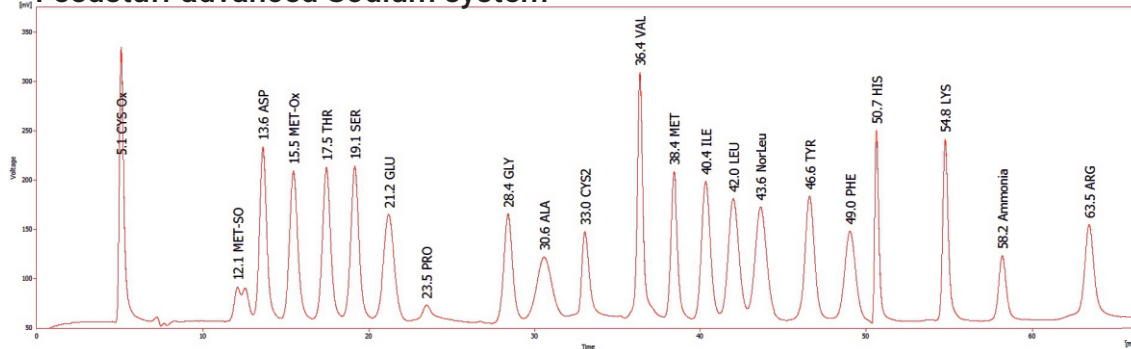
### short programm (adjusted to applications)

MSUD & PKU were performed with the column kit Cat. No. 650-0157 and supplement kit Cat. No. 650-0162

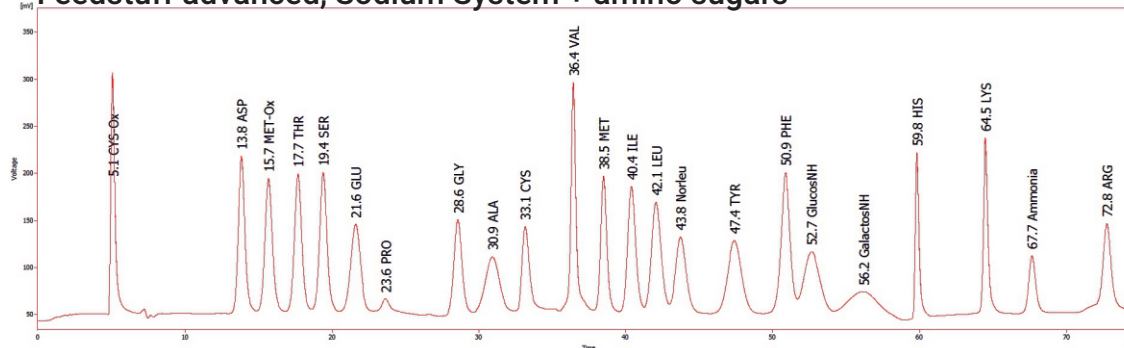


# Separation performance

## Feedstuff advanced Sodium system



## Feedstuff advanced, Sodium System + amino sugars



both chromatograms were performed with the column kit Cat. No. 650-0165 and supplement kit Cat. No. 650-0167

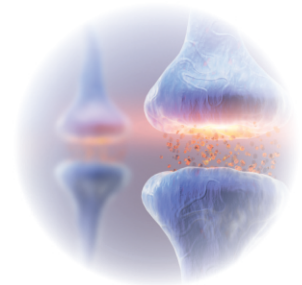
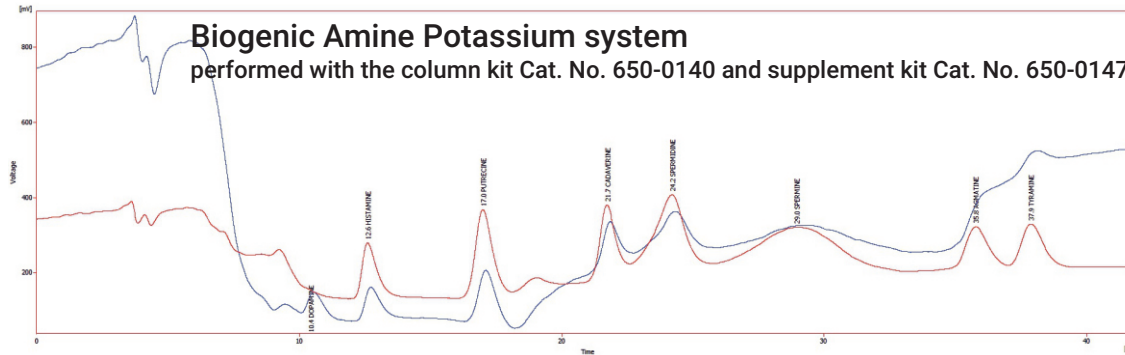
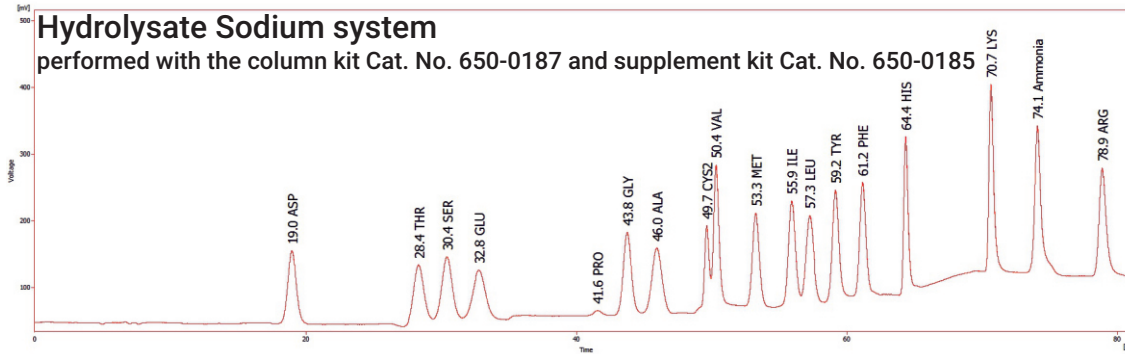


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## Separation performance



## Columns & Supplement Kits

Description	Cat. No.	suitable supplement kit* (Cat. No.)
Lithium High Speed	650-0157	650-0162
Lithium High Resolution	650-0126	650-0153
Lithium Advanced Plus	650-0178	650-0131
Sodium High Speed	650-0187	650-0185
Sodium High Resolution	650-0190	650-0196
Sodium Advanced	650-0165	650-0167
Potassium Biogenic amines	650-0140	650-0147

\* each buffer, eluent and reagent can be ordered separately



## Consumables

Description	Cat. No.
Standard Physiological (42 amino acids)	650-0035
Standard Hydrolysate (18 amino acids)	650-0036
Standard Feedstuff (20 amino acids)	650-0037
Standard Canonical (20 amino acids)	650-0120
Standard Biogenic Amines (8 amines)	650-0150
Standard Newborn Screening (MSUD/PKU)	650-0119
Standard Norleucin ( <i>internal Standard</i> )	650-0069
sample preparation kit (150 analysis)	650-0022
pre column (ammonia adsorber)	650-0020
documents for IQ/OQ validation	915-0045

*Made in Germany, more than 25 years...*



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Tel.: +49 3302 - 201 20 0

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