

# AAA 3500

Automatic Analyzer of Amino Acids

 **Analytical**<sup>®</sup>  
Technologies Limited



Laboratory Instruments since 1995

AAA 3500 is a compact device designed for **determination of amino acids and biogenic amines**.

Thus, it can be used in the fields of biochemical research, research of human and animal nutrition, medical diagnostics, control of drugs, food and feedstock. The robust and sensitive method of ion exchange chromatography with post-column ninhydrin derivatization provides **high accuracy and reproducibility of analyses**.

AAA 3500 will provide results with maximum accuracy and reproducibility in continuous operation, saving purchasing, operation and maintenance costs.

# Compact device

AAA 3500 is a compact device with a unified control panel, which increases user convenience and facilitates control and handling of the device. AAA 3500 is normally controlled by a computer, the user may control the settings of the device with the use of a touch display as well.

**Gradient**  
6 gradient valves.

**Monitored quantity in bottles**  
The device monitors the current level of reagents during operation.

**User-friendly touch display**  
A large and user-friendly touch screen enables convenient control and operation of the device.

**Long service life of detector lamps**  
The used LED lights ensure a very long service life.

**Reactor and detector**  
The reactor with an easily replaceable insert has a programmable temperature in the range of 40 °C - 150 °C and is protected from overheating. The spectrophotometric detector simultaneously works on two wavelengths of 440 and 570 nm.

**Column thermostat**  
The thermostat ensures fast heating and cooling from 25 °C to 90 °C (adjustable with the increment of 0.1 °C), independently of the ambient temperature.

**Automatic dispenser**  
A dispenser with a cooled carousel and adjustable temperature of 3°C to the ambient temperature, 40 positions per 1.5 ml or 80 positions per 0.5 ml. Automatic rinsing prevents cross-contamination of individual samples.

**Pumps**  
A pair of high-pressure double-piston pumps with floating pistons ensures virtually impulse free operation in the range from 0.01 to 8.5 ml/min.

**Reagents**  
Buffers can be prepared simply from cheap and affordable chemicals. The user is not forced to buy costly ready-made buffers from the manufacturer of the AAA 3500 device, which considerably reduces the price of analyses.

**Variable dosing**  
In the range of 1 µl - 100 µl as standard, or 1 µl - 200 µl on request.

**Columns**  
Stainless-steel columns with variable dimensions are able to carry out up to 10.000 analyses per one filling. On request a column made of PEEK or glass may be delivered, which can be overfilled by the user.

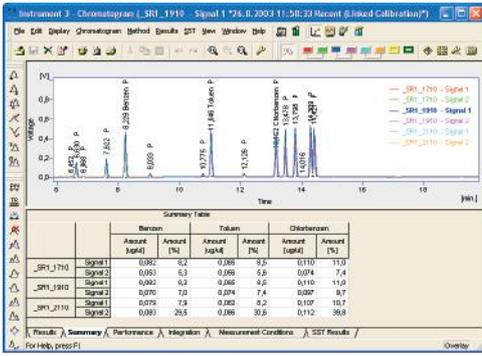
## Robust and sensitive method

AAA 3500 uses the principle of ion exchange chromatography with post-column NHD derivatization. Using this method you can safely determine amino acids in hydrolysates of proteins, peptides as well as free amino acids in physiological solutions and extracts, biogenic amines and some antibiotics.

## Saves on costs

The user can minimize the operation costs by producing reagents with the use of simple software from cheap and affordable chemicals (there is no need to buy overpriced ready-made buffers). In the Czech Republic maintenance of the devices is carried out directly by the ATL Company, abroad, maintenance services are provided by authorized distributors. Therefore, you can expect professional services at unbeatable prices from us.





## Clarity control software

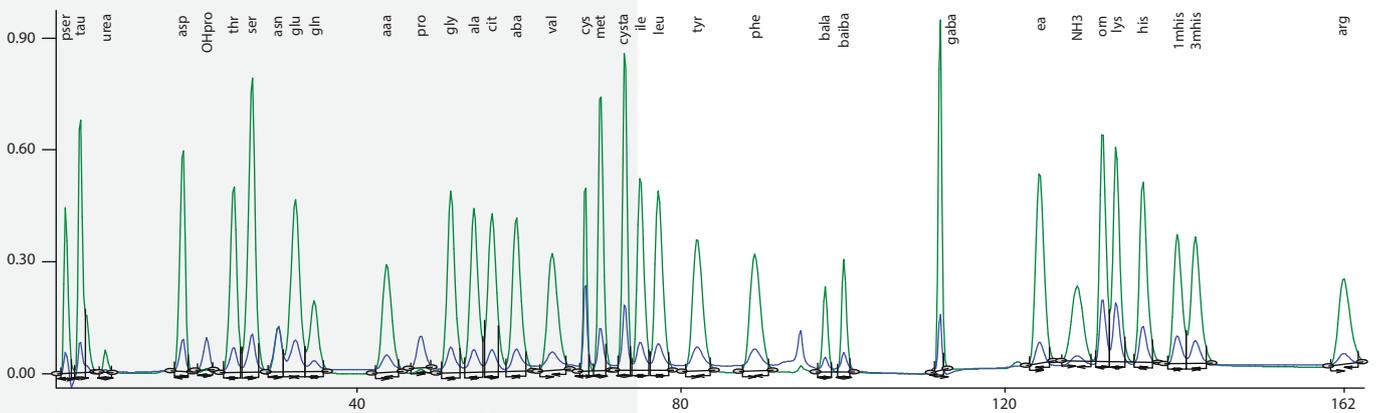
AAA 3500 is controlled by the Clarity software of the DataApex Company. This software ensures convenient and intuitive operation of the devices as well as work with data and their export to various formats. Clarity makes it possible to connect other equipment to AAA 3500, e.g. a fluorescence detector.

The device can be controlled remotely via the Internet or Maintenance diagnostic activities can also be carried out remotely.

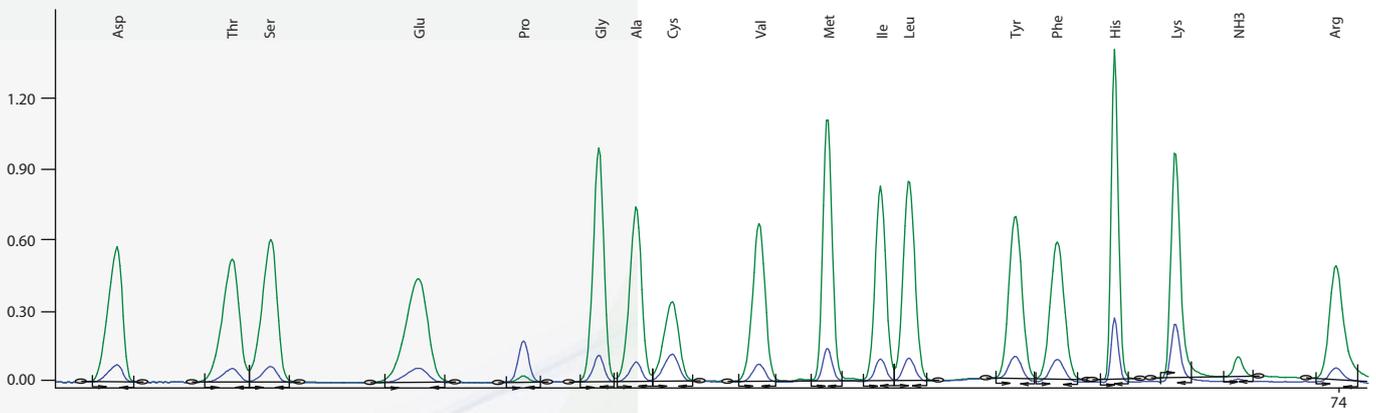
## High accuracy and reproducibility of analyses

AAA 3500 provides analyses with a low level of noise and drift. The ATL Company is able to produce a shortened or modified program for virtually all ninhydrin positive substances on the customer's request.

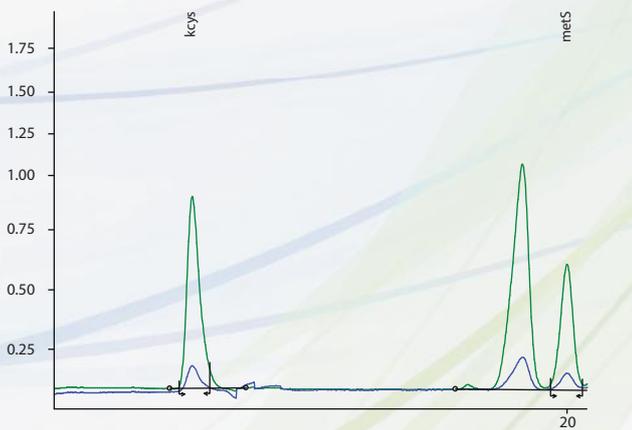
### Determination of free amino acids (standard)



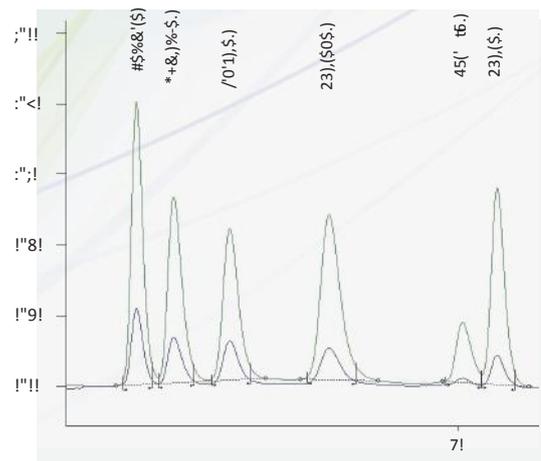
### Hydrolysate analysis (standard)



### Shortened determination of sulphurous amino acids (cystine and methionine)



### Determination of biogenic amines



# Technical specifications

Automatic Analyzer of Amino Acids 3500	
Drift	2.0 x 10 <sup>-5</sup> AU/hod
Reproducibility at 10 nmol	Retention times: 0.3 % (arg) Peak area: 1 % (ser, gly, his)
Pumping system	High pressure impulse-free pumps (pair of floating pistons)
- flow	0.01 to ≤10 ml/min
- pressure	0 – 25 MPa
Dispenser with cooling	
- no. of samples, cassette A	40 x 1.5 ml
- no. of samples, cassette B	80 x 0.5 ml
- variable dosing	1 - 200 µl with 1 µl increment
Cooling	Peltier
Temperature	Adjustable 3 °C (ambient temperature)
Columns	
- dimensions	4 x 250 mm or 4 x 150 mm
- material	stainless steel, PEEK, glass
Column thermostat	
- temperature	25 °C – 90 °C
- cooling and heating	Peltier
- setting accuracy	0.1 °C

Degasser	6-channel degasser
Double-channel photometer	400 and 600 nm
Cuvette volume	5 µl
Reactor	40 – 150 °C (overheating protection)
PC communication	LAN
Processing of results	Clarity
Colour display	8" diagonal
Power input	230V, 50Hz
- start	280 VA
- operation	120 VA
- standby	70 VA
Dimensions (W x H x D)	710 x 600 x 560 mm
Weight without bottles	46 Kg
Operation time without the user's intervention	approx. 7 days
Other applications	Biogenic amines Sugar analysis for reduced sugars

The ATL Company offers e.g. these laboratory instruments:

