



## The Biochrom 30 series of Amino Acid Analysers

PARTNERS IN SCIENCE

**biochrom**



## Biochrom Ltd and Amino Acid Analysis

Biochrom has been a leading supplier of quality instrumentation to science and industry for more than 30 years. Tens of thousands of our analytical instruments have been supplied around the world, sold as own-label brands through our distribution partners.



Amino Acid Analysis is a technique based on ion exchange liquid chromatography, used in a wide range of application areas from Clinical to Feedstuffs, to provide qualitative and quantitative composition analysis

Based on established Ninhydrin detection technology to provide rapid specific analysis, these Biochrom state of the art products are fully integrated into a complete package incorporating ceramic and PEEK active components for long life, freedom from contamination and minimal maintenance.

With its long experience of manufacturing reliable and proven products you can be sure that the new Biochrom 30 Series of compact user friendly instruments offers you the complete analytical solution

The new series consists of three compact bench top, PC-controlled liquid ion exchange chromatography systems dedicated to rapid and specific amino acid analysis within the Clinical, pharmaceutical, proteomics, food and feedstuff industries.

Biochrom 30 is dedicated to the analysis of Physiological samples

Biochrom 31 is dedicated to the analysis of Protein Hydrolysate

Biochrom 32 is dedicated to the analysis of Oxidised Protein Hydrolysate

Instrument	Biochrom 30 Physiological	Biochrom 31 Protein	Biochrom 32 Oxidised
Type of sample	CSF, Urine, Plasma, Tissue, Plant, Fermentation products, Fruit Juices	Protein	Feedstuffs
Standard Amino Acids detected	1 sulfocysteine, 2 phosphoserine, 3 taurine, 4 phosphoethanolamine, 5 urea, 6 aspartic acid, 7 hydroxyproline, 8 methionine sulfoxide, 9 threonine, 10 serine, 11 asparagine, 12 glutamic acid, 13 glutamine, 14 sarcosine, 15 $\alpha$ -aminoadipic acid, 16 proline, 17 glycine, 18 alanine, 19 citrulline, 20 $\alpha$ -aminobutyric acid, 21 valine, 22 homocysteine, 23 homocitrulline, 24 cystine, 25 saccharopine, 26 pipercolic acid, 27 methionine, 28 allsoleucine, 29 cystathionine, 30 isoleucine, 31 leucine, 32 argininosuccinic acid, 33 norLeucine, 34 tyrosine, 35 cystine-homocystine mixed disulfide, 36 $\beta$ -alanine, 37 phenylalanine, 38 $\delta$ -aminolevulinic acid, 39 $\beta$ -aminoisobutyric acid, 40 homocystine, 41 $\gamma$ -aminobutyric acid, 42 ethanolamine, 43 ammonia, 44 hydroxylysine, 45 ornithine, 46 lysine, 47 1-methyl histidine, 48 histidine, 49 tryptophan, 50 3-methyl histidine, 51 anserine, 52 carnosine, 53 arginine	Asp, Thr, Ser, Glu, Pro, Gly, Ala, Cys, Val, Met, Ile, Leu, Nle, Tyr, Phe, His, Lys, Arg	Cysteic Acid, D-M Sulph, L-M Sulph, M Sulphone, Asp, Thr, Ser, Glu, Pro, Gly, Ala, Cys, Val, Met, Ile, Leu, Nle, Tyr, Phe, His, Trp, Orn, Lys, Arg

Biochrom over 30 years of Continuous Support in Amino Acid Analysis



## Biochrom 30 Series

Dedicated Amino Acid Analysis chromatography system

- “Load and Go” Amino Acid Analysis
- Customised Applications
- Performance Monitoring
- System Integration
- Bench top
- Cost Effective Analysis

### The systems offer:

- **Convenience:** Load and Go Post-column photometric detection of amino acids with no additional derivatization procedures
- **Flexibility:** Integrated software enables automatic sample set-up, flexible sample analysis, networking and exporting of data
- **Versatility:** A wide variety of sample types can be analysed using the available range of programs and columns
- **Compact:** Bench top design requiring minimum lab space
- **Serviceability:** Ergonomic design for ease of maintenance



The analytical column, pump head and fluidics fittings are manufactured from a combination of inert ceramic and polymer PEEK to eliminate contamination and ensure longevity of instrument operation. The cation exchange resin is extremely robust and can be regenerated to maintain optimum performance giving an almost infinite lifetime. Elution buffer programming is totally flexible with a selection of up to six buffers controlled via the PC allowing any number of steps, including pulsing techniques for generation of microgradients and stepwise gradients. The instrument is also equipped with a post analysis system flush which cleans the reaction coil and flow cell and removes any trace of residual chemicals. These features will provide you with the most flexible system available today with the ability to grow as your applications evolve.

Biochrom 30 Series use computer-controlled 32-bit software operating in the Microsoft™ Windows environment, providing the user with real time information and on-line monitoring of the status of the instrument. A buffer usage monitoring function gives the user a reminder to top up buffers and reagent before running a series of samples. Standard analysis programs are stored via a network or on hard disk and can be used as the basis for building up a library for each and every specific need. A calculator-style function operated via the mouse or keypad is used for program input and editing. This provides flexible and extensive programming of buffers, flow rates and temperatures giving the instrument the ability to run a large number of programs day or night without user intervention. The sample log keeps a record of all the samples loaded and the analysis program may be copied and printed to give a daily or weekly record.



### Chemicals and Consumables

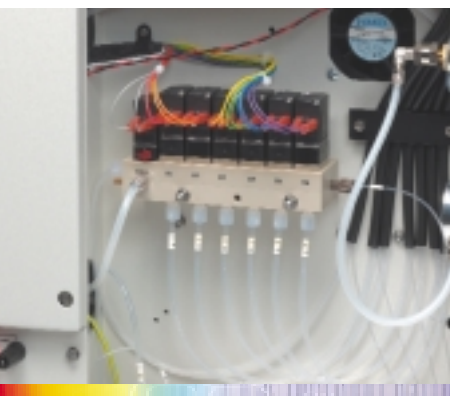
Biochrom chemicals are manufactured from high quality materials and subjected to rigorous control procedures, under the ISO 9001 Quality System. Our buffers are guaranteed to give accurate and reproducible results for up to 3 years from manufacture, provided the storage conditions are adhered to. All reagents have been formulated so they no longer require cooling, providing stable chemistry with ease of use.

Biochrom 30 Series is supplied with the appropriate chemical kit for the system ordered. These kits contain the chemicals and consumables needed for most routine analyses. Kits or individual buffers and consumables may be purchased to enable continuity of analysis. In use on the instrument, the buffers and detection reagent are stored under an inert atmosphere to ensure stability.



### Columns

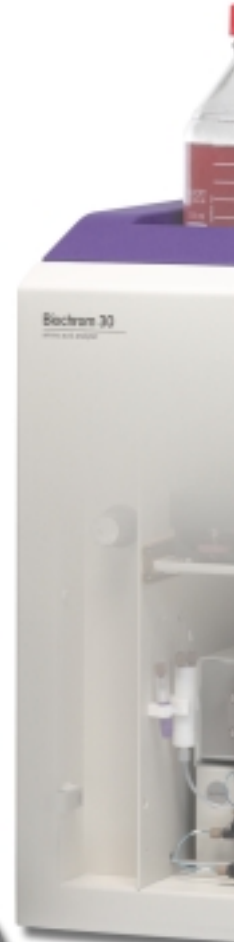
Biochrom 30 Series is supplied complete with the analytical column of your choice. For high-speed analysis, select from a range of high-performance columns. When perfect separation is essential, choose from a range of high-resolution columns. Manufactured from PEEK material, the columns are free from corrosion and metal contamination and are packed with optimally sized, cation-exchange resin. The columns are attached with finger-tight fittings so no special spanners are required to ensure a leak-free seal. Precise temperature programming within the range 20–99 °C is rapidly achieved using Peltier elements to provide the necessary heating and cooling for the column.



### Innovative Valving System

The Biochrom 30 series incorporates the latest valving technology to give reliable and reproducible results over the lifetime of the instrument.

All services to the Biochrom 30 series are routed to the side of the instrument to allow convenient location on a laboratory bench



## Autosampler

The autosampler gives customers the ease-of-use of an injection straight from the vial with excellent reproducibility of sampling. Up to 84 samples and three large vials for transport liquid can be loaded and stored on the standard refrigerated carousel. Sample volumes can be programmed from 1  $\mu\text{l}$  to 5000  $\mu\text{l}$  depending on the loop fitted, with up to nine injections per vial. Samples can be loaded in three possible ways: Full flushed loop, partial loop fill and microlitre pick up. These injection methods have reproducibilities of 99.7%, 99.5% and 99% respectively (over 10  $\mu\text{l}$ ). Advantages - no sample wastage, wide loading range etc. The standard 1.8 ml vials are suitable for most purposes but 300 $\mu\text{l}$  reduced volume vials can also be used where only small sample volumes are available. Using Biochrom 30 Series control software, the functions of the autosampler are controlled so that vial number, sampling method and injection volume are all specified in the sample list editor.



## Electronic Ceramic Pumps

The new ceramic pumps give total control of the flow rate via the control software. The metal free pumping surfaces ensure constant flow, low pulsation and eliminate corrosion. Very little maintenance is required because all the pumps have an automatic piston flush system.



## New Technology

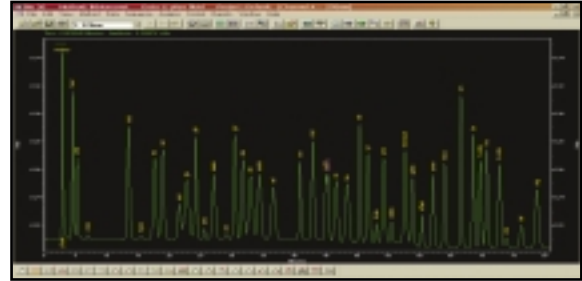
One of the most important aspects to Biochrom's business is its support to its existing customers. One of the main ways it achieves this is by developing an upgrade path for most of the new technology used on current instruments. In this way customers can significantly extend the useful life of their instruments.



## Biochrom 30 Physiological

Designed for metabolic disorder screening and research

Lithium High Performance Columns perform a full routine analysis of physiological fluids, enabling the determination of up to 53 different amino acids, including physiologically important amino acids for early detection of hereditary metabolic disorders and the effectiveness of nutrient absorption.



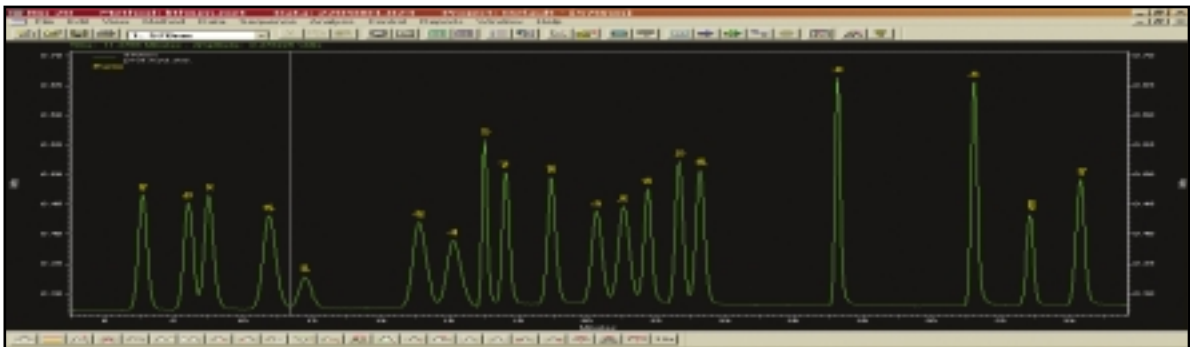
## Biochrom 31 Protein

Designed for quality control in drug synthesis

The Biochrom 31 offers full automation for the fast and reliable quality/authenticity analysis of generic drugs and infusion fluids to a high standard that satisfies legislation. Long-life columns can tolerate various matrices and a high-salt content in the analysis of infusion liquids and recombinant or synthetic peptides.

Process control and authenticity testing

The ability of Biochrom 31 to rapidly deal with complex samples, requiring virtually no sample preparation makes it a powerful quality-control technique for the analysis of soft drinks and beverages.

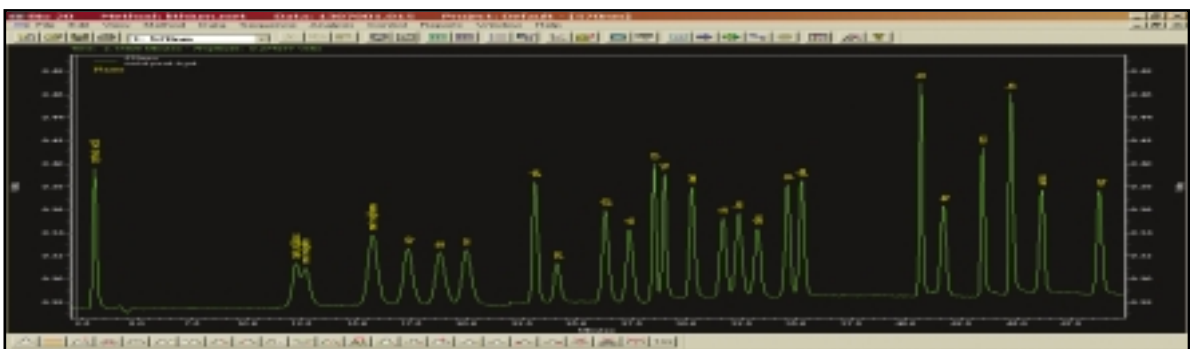


## Biochrom 32 Oxidised Proteins

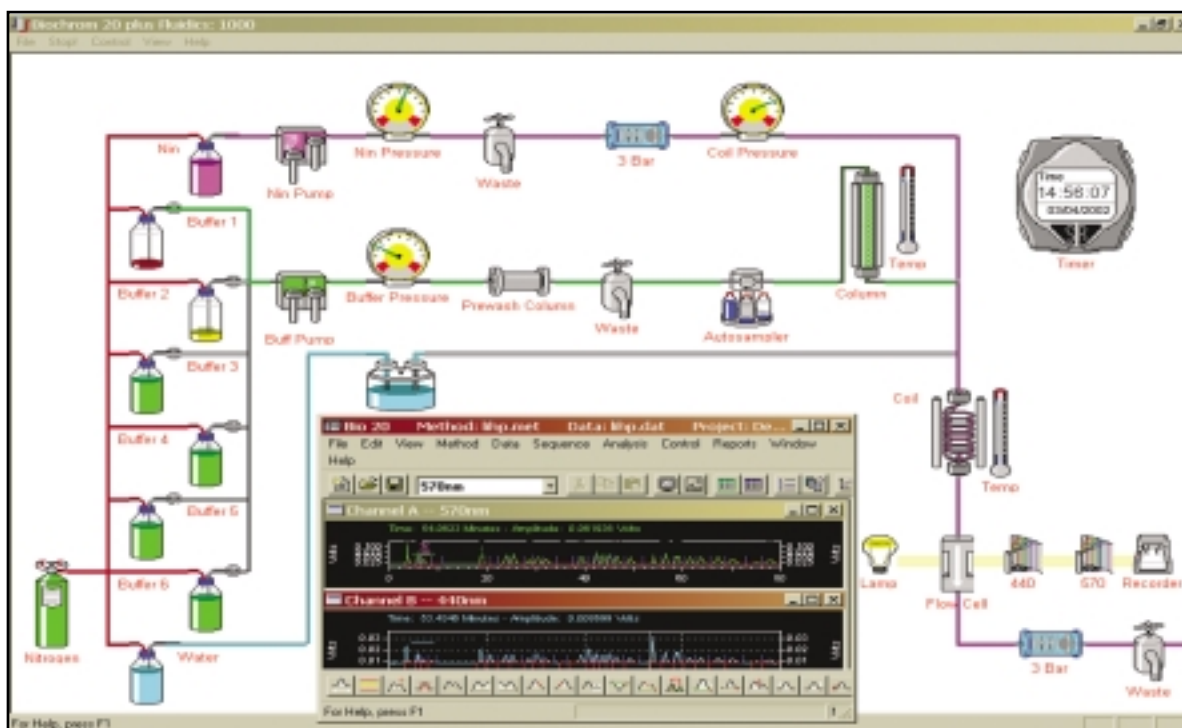
Designed for the analysis of complex hydrolysates such as food and feedstuffs.

Analyses of complex hydrolysates such as oxidized food or feedstuff samples are easily accomplished using Oxidized Feedstuff High Performance PEEK Column with a buffer kit specially formulated for this application. This system meets the requirements of

the standard methods from AOAC and the EU Commission Directive 98/64/EC. Limiting amino acids such as lysine, threonine, cystine and methionine may be rapidly identified to enable adjustments to the formulation of feedstuffs.



## BioSys Software Control



The system is operated via an advanced graphical user interface which shows the instruments operational information in real time and is fully integrated with the data-handling software.

The data-handling software enables researchers to create methods, design custom reports, view calibration curves, acquire and process data, create and run batch sequences all from a single window. Simultaneous data acquisition and processing can be performed while you use the software to develop other methods or manipulate data. A full range of graphic capabilities is available including split-screen chromatogram views, zoom, multiple parameter annotation, integration tool bar, and colour selection as well as selection of tiled or cascaded windows.

The system can perform simple or complex calibrations with curve-fitting programs including point-to-point, linear regression, weighted linear regression, quadratic and cubic. Peak tables may also be presented graphically. The retention times are entered and peak identification windows are calculated automatically. Peak names, reference peaks, internal standards, calibration values and other information can be entered via the keyboard. Data can be easily exported to any number of alternative programs or directly into other Windows applications. The system is easily networked for secure data storage and has the facilities to assist with your regulatory requirements.

## Customised Reports



BioSys enables users to customise reports to satisfy the individual needs of their laboratory.

This is easily achieved by the use of dropdown templates and style guides to produce high quality final reports.

Biochrom offers full service and support cover including user groups, training, applications and consumables for all of its existing and new customers currently serving over 800 instruments world-wide.

## UV/Visible Spectrophotometry

UV/Visible Spectrophotometry is a fundamental analytical technique and, together with suitable sample handling accessories, is used in laboratories for absorbance and transmission measurements of samples in all application areas. Biochrom manufactures an extensive range of attractive UV/Visible products and accessories, with performance and reliability guaranteed by 20 years experience in the field. Amongst other technological advances, these instruments feature PTR (Press to Read) capability, which dramatically extends the lifetime of the source lamps.

## Microtitre Plate Reading and Washing

In clinical and pharmaceutical chemistry, the demand is for ever increasing sample throughput and smaller and smaller volumes. This is where the microtitre plate comes into its own and Biochrom offer an excellent range of fast, versatile and reliable plate readers with robot friendly designs. In addition, a range of washers is available, with a unique manifold design for minimised residual volumes and digitally controlled aspiration and dispensing pumps for high accuracy and low noise performance.

## Liquid Dispensing

ASYS | HITECH

As sample numbers increase and sample volumes decrease, there is a growing requirement to dispense low volumes of liquids rapidly, accurately and reproducibly. Biochrom's liquid dispensers meet these needs ideally, with units for two or six, any well format, microtitre plates and the ability to deliver volumes of liquid down to two microlitres using a non-contact delivery technique, thereby eliminating cross contamination.

## Gel Electrophoresis

SCIE-PLAS

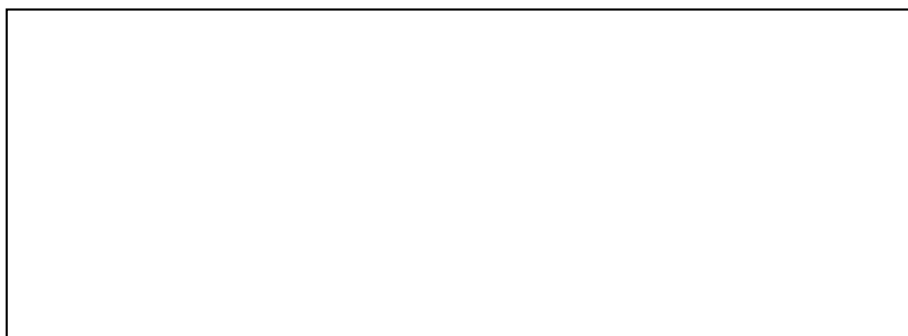
Gel Electrophoresis remains one of the most important techniques in the life sciences. Biochrom, via its subsidiary Scie-Plas, offers a full range of electrophoresis products for analytical and preparative nucleic acid studies and manual DNA sequencing, including both horizontal and vertical units together with all appropriate accessories.

## Amino Acid Analysis

Biochrom has been in the field of dedicated Amino Acid Analysis for over 30 years using established ion exchange chromatography to provide rapid, specific amino acid analysis for Clinical, Pharmaceutical, proteomics, food and feedstuff industries. These state-of-the-art products feature proven Ninhydrin detection technology fully integrated into a complete package utilising the latest 32-bit graphical software, active components in ceramic and PEEK for long life and elimination of contamination and a range of robust ion exchange columns.



If you want to know more about us, or our products, please get in touch . . . .



Biochrom Limited, 22 Cambridge Science Park, Cambridge, CB4 0FJ, England  
Tel: +44 (0)1223 423723 Fax: +44 (0)1223 420164 Web: [www.biochrom.co.uk](http://www.biochrom.co.uk)  
Biochrom is a Harvard Bioscience company

