

SAS-1plus • SAS-2 • Platinum



Simply Better Electrophoresis



# Helena Electrophoresis – excellence through experience

Helena Biosciences has operated at the forefront of clinical electrophoresis for over 30 years.

All of our experience, innovation and customer partnerships have led to the development of our SAS range. SAS is an unrivalled suite of instruments, gels and analysis software that is the end to end electrophoresis solution whatever your needs, from small, manual systems to high throughput automation and analysis.

We design, develop, test and manufacture to the highest standards at our UK headquarters and work with a range of global partners to develop new techniques and technologies that allow us to supply laboratories and scientists all over the world with the best in clinical diagnostics.

We are successful because science and customer relationships are at the heart of what we do. We are committed to being your Partners in Good Science.

## **SAS - simply better electrophoresis**

SAS is the one instrument range you need to know in clinical electrophoresis.

SAS has been designed so that laboratories can choose a combination of high performing instruments and gels to meet any current or future need at a price that is right.

The modular SAS range is divided into manual, medium and high throughput systems that offer varying degrees of automation and analysis. Crucially these can be combined throughout the range, so that a low throughput or even manual electrophoresis analyser can be teamed with a gel processing system, or even a sample handler.

SAS automates a range of procedures from sample handling, volume checking and application to migration, incubation, staining/destaining and drying. The walkaway nature of the SAS system reduces the potential for operator errors while increasing laboratory productivity and reducing costs. Add in our leading Platinum 3 analysis software and SAS becomes the ideal electrophoresis solution for any laboratory.

**Helena Biosciences – Partners in Good Science**

SAS-MX SAS-M1 SAS-1plus SAS-2 SAS-3 SAS-4 SAS-5

# SAS and Platinum 3 The complete electrophoresis solution

## SAS-1plus

High performance. Low prices.

SAS-1plus is the gateway to our clinical electrophoresis solution for small to medium workloads. It is the ideal choice for labs conducting up to 100 serum proteins per week.

Used by laboratories across the globe, SAS-1plus supports an extensive range of clinical procedures and a host of features including full security and traceability of analysis from patient to reports.

- ▶ Up to 24 samples applied simultaneously
- ▶ Precise antisera applicator for IFEs ensures complete lane coverage
- ▶ Optimised gel range
- ▶ Simple user intuitive software
- ▶ Compact benchtop analyser



## SAS-2

Easier electrophoresis

The SAS-2 gel processor is the partner to our high performance SAS-1plus electrophoresis analyser.

Designed with reliability, accuracy and efficiency in mind SAS-2 automates the staining, destaining and drying of the gel and is optimised to deliver ultimate clarity of protein gel.



## Technology standards unique to Helena



**SampleSure**

Market-leading, patented sample applicator system

- ▶ 100% secure sample application
- ▶ Completely reproducible – perfect sample volume every time
- ▶ 100% protein transfer – zero protein loss
- ▶ No absorption of sticky proteins



**BufferBlock**

High performance gel technology



**CompleteAssay**

The most flexible electrophoresis solution

- ▶ The widest range of assays available
- ▶ Guaranteed performance day-in day-out



**PowerUp**

High voltage as standard



**PerfectPartnering**

Compatibility across the range

- ▶ Seamless integration of instruments, software, assays and reagents across SAS range
- ▶ Delivers unmatched flexibility
- ▶ Full technical support online, phone/fax or in person



**SpotLight**

The best instruments, gels, innovations and support possible

# Electrophoresis solution for small to medium workloads

## SAS-5

Handles the future. Delivers today.

- Simple user intuitive software
- Optimised for gel clarity
- Walk-away automation
- Compact footprint

SAS-5 is a step forward in laboratory electrophoresis. On its own, SAS-5 brings modern, reliable sample handling performance to your laboratory in a package that offers unique benefits.

Coupled with Helena's Platinum 3 gel analysis software it becomes a powerful solution that offers, for the first time, full analysis security and audit trail from patient sampling to result reporting.

- Trueidentity patient ID and audit trail
- Processes up to 180 samples per hour
- Dedicated sampling and dilution needles
- Full range of sample tube sizes supported
- Sample pre-treatment



All buffers pre-cast into gel block  
Semi-dry gel system – no liquid buffers  
BufferBlocks integrated with gel  
No electrode wicks or sponges  
Improves reliability and reproducibility



Run different samples  
simultaneously on one gel

- Run simultaneous serum and urine on the same gel
- Run multi-fixations on same gel
- Run different urine analysis methods on the same gel at the same time
- Pentavalent screening

High-voltage applications supported as standard  
ActiveGelControl integration for increased resolution  
Multiple isoelectric focusing methods



On-board Peltier temperature  
control as standard

- Accurate and reproducible temperature control
- Cooling for improved resolution
- On-board reagent incubation
- On-board gel drying

Not a technology, but an approach which enables us to deliver the very best solutions to our customers every time.

SpotLight is your guarantee of rigorous quality standards and continuous innovation

# PLATINUM<sup>3</sup> Clinical electrophoresis<sup>3</sup>

Gel analysis • interpretation • sample process management

Platinum 3 is a leap forward in clinical electrophoresis gel analysis software. Its unmatched performance and useability make it an invaluable tool for the modern biomedical scientist and clinician.

### Single screen navigation

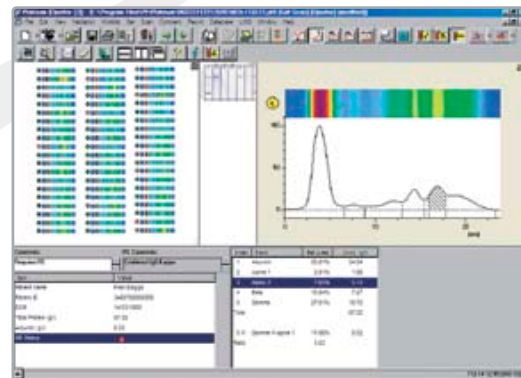
- › Gel, sample, trace, demographics, patient history status, attached IFEs and trace analysis all visible in one window
- › Natural work flow from scan to report
- › Completely intuitive, customisable environment
- › Manages scan to report in minimum number of clicks

### Faster, better gel scan and storage

- › Full colour density scan in one pass
- › 250% faster sample scan and storage than competition
- › Gel image generated from raw data – no artificial scan errors
- › More efficient data storage

### Patient demographics

- › 'Plug and play', bidirectional LIMS connection
- › Import patient data from LIMS including external chemistry values
- › Fully customisable, self checking Access database
- › Automatic data flagging indicates patient sample status
- › Full comparison of historical data



### Editing

- › Full suite of click and drag curve editing tools
- › Unique trace editing tools
- › Full historical, multi-sample and control overlay capability
- › Unique false colour / monochrome sample image enhancement

### Quality control

- › Automatic Levey-Jennings analysis and standard deviations
- › Automatic flagging of normal and abnormal results

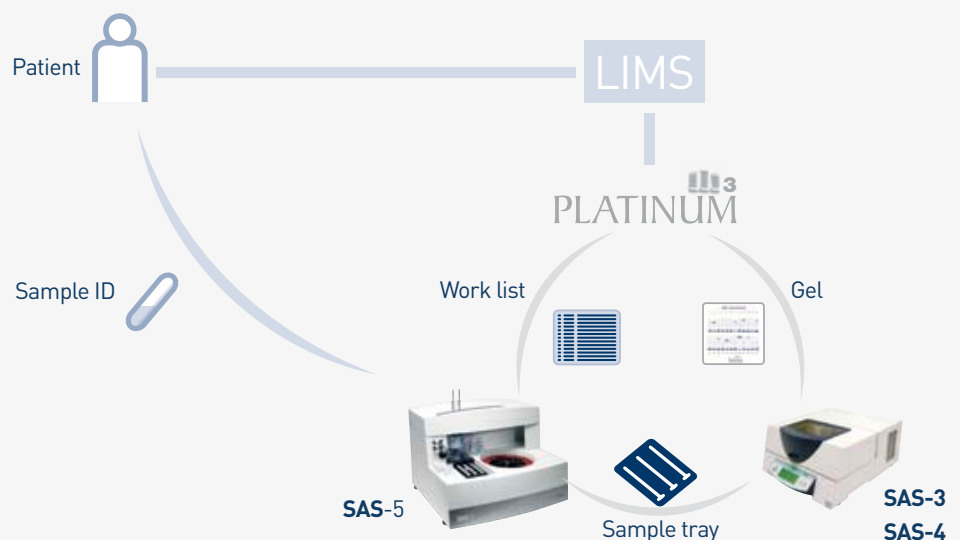
### Report

- › Fully customisable reports. Include any data from analysis, including results, images, traces, demographics and logos.



Full sample audit trail and analysis security. A real revolution and real power for technicians, clinicians and patients alike.

- › For the first time full analysis security
- › Full multi-sample, historical audit trail from patient sampling to reporting



# Helena gels – optimised for speed and accuracy

Helena has been designing and supplying diagnostic electrophoresis tests for over 30 years. We offer the widest range of diagnostic electrophoresis methods available and all of our SAS gels are designed and manufactured

to the same exacting quality and performance standards as our instruments. Designed specifically for the SAS instrument range our gels offer optimal performance and flexibility.

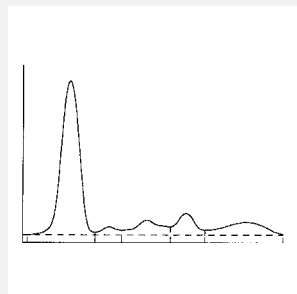
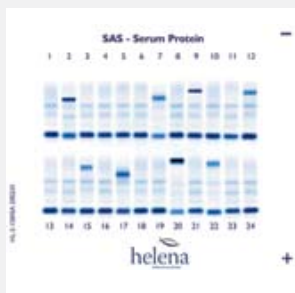
## CompleteAssay

- ▶ Serum Proteins
- ▶ Serum Proteins (Split Beta)
- ▶ Serum Proteins (High Res)
- ▶ Immunofixations
- ▶ Urine Protein Analysis
- ▶ Urine SDS
- ▶ Alkaline Phosphatase
- ▶ Alkaline Haemoglobins
- ▶ Acid Haemoglobin
- ▶ Haemoglobin IEF
- ▶ Cholesterol Profile
- ▶ HDL Cholesterol
- ▶ Lipoprotein Electrophoresis
- ▶ CK/LD Isoenzymes
- ▶ IgG Isoelectric Focusing
- ▶ Transferrin IEF

## Serum proteins

Helena has produced the serum protein 5 band gel using an advanced gel formulation ensuring enhanced resolution and sensitivity within the Gamma region.

- Up to 24 samples can be applied simultaneously
- Samples directly applied to the gel using SampleSure technology to ensure no protein loss
- Complete serum protein profile
- Clear and identifiable bands produced
- BufferBlock technology
- All assay components included within the kit

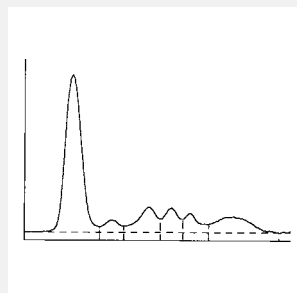
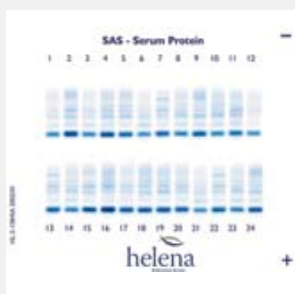


24 tests per gel  
10 gels per pack  
Cat. no. **200100**

## Serum proteins (Split Beta)

Helena has produced an additional serum protein 6 band gel for differentiation of  $\beta_1$  and  $\beta_2$  fractions. The Split Beta Gel uses an advanced gel formulation ensuring enhanced resolution and sensitivity within the Gamma region.

- Up to 24 samples can be applied simultaneously
- Samples applied directly to the gel using SampleSure technology to ensure no protein loss
- Complete serum protein profile
- Resolution of  $\beta_1$  and  $\beta_2$  fractions to aid identification of region monoclonal proteins
- BufferBlock technology
- All assay components included within the kit



24 tests per gel  
10 gels per pack  
Cat. no. **200200**

## Serum proteins (High Resolution)

By using high-resolution agarose electrophoresis, 15 or more proteins can be visualised in the serum. This superior resolution and sensitivity separates and detects proteins with similar electrophoretic motilities.

- Up to 12 samples per gel
- Samples are applied directly to the gel using SampleSure technology to ensure no protein loss
- Suitable for urine and CSF analysis
- BufferBlock technology
- All assay components within the kit

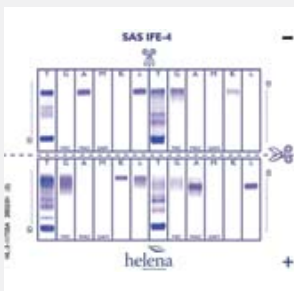


12 tests per gel  
10 gels per pack  
Cat. no. **200700**

## Immunofixations

Helena's optimised IFE gels can be used for either serum or urine samples, and can be run on the same gel to enhance productivity and reduce costs. Due to the use of the unique SAS sample applicators Helena has removed the need for urine sample concentration.

- Specific standardised sample preparation
- Up to 4 samples can be applied simultaneously
- Serum or urine protocols included
- Samples applied directly to the gel using SampleSure technology to ensure no protein loss
- Direct urine sampling – no need to concentrate
- Clear and identifiable bands produced
- All assay components included within the kit



4 tests per gel  
10 gels per pack  
Cat. no. **200300**

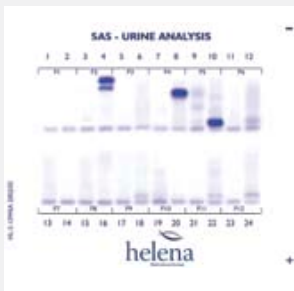


# Urine Protein Analysis

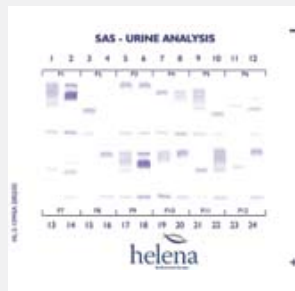
The SAS-1 Urine Protein gel offers Helena's unique and completely flexible approach to urine protein analysis and screening techniques. The SAS-1plus applicator system ensures unconcentrated urine can be applied directly to the gel with the confidence of no protein loss.



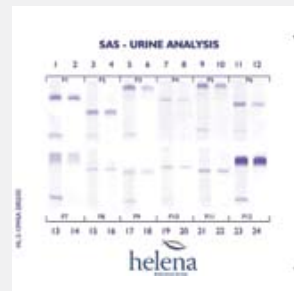
- › One gel for the following applications:
- › Standard urine screening
- › Pentavalent/Albumin Fixation
- › Paired Pentavalent Fixation
- › Any combination of fixations for Bence Jones protein screening
- › Direct urine sampling – no need to concentrate
- › Clear and identifiable bands produced
- › All assay components included within the kit



Urine screen  
**24 tests per gel**  
**10 gels per pack**  
 Cat. no. **200400**



Penta/albumin screen  
**24 tests per gel**  
**10 gels per pack**  
 Cat. no. **200400**



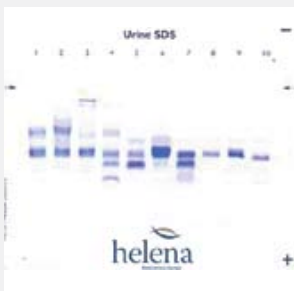
Paired Pentavalent screen  
**12 tests per gel**  
**10 gels per pack**  
 Cat. no. **200400**

# Urine SDS

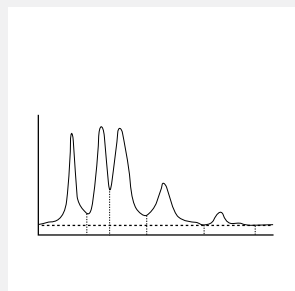
SDS agarose gel electrophoresis allows quick and easy evaluation of renal dysfunction through the use of size based electrophoresis. Proteins in urine samples are treated to transform them into a denatured state. This allows resolution of proteins that co-migrate in standard gels.



- › Up to 10 samples per gel
- › No pre-concentration of urine samples required
- › High sensitivity for Bence Jones proteins
- › Discrimination between Free and bound Light Chains
- › All assay components within the kit



**10 tests per gel**  
**10 gels per pack**  
 Cat. no. **201400**

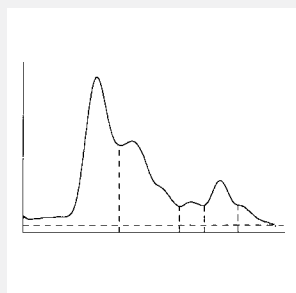


## Alkaline Phosphatase

This high resolution agarose electrophoresis method for separation of Alkaline Phosphatase isoenzymes provides excellent discrimination using Neuraminidase to enhance the separation of bone and liver fractions. A unique additive to the gel matrix ensures separation of the macrohepatic fraction from bone and liver, allowing full interpretation from a single lane.



- ▶ Up to twelve samples per gel
- ▶ Single lane analysis for all Alkaline Phosphatase isoenzyme fractions
- ▶ Clear and identifiable bands produced
- ▶ All assay components included in kit including ALP separation enhancer



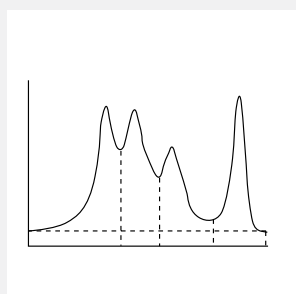
12 tests per gel  
10 gels per pack  
Cat. no. **200800**

## Alkaline Haemoglobins

Helena has produced the Alkaline Haemoglobins gel using an advanced gel formulation ensuring enhanced resolution and sensitivity for the initial haemoglobin screening of abnormal haemoglobin samples. The integration of our BufferBlock technology ensures consistent performance and convenience.



- ▶ Up to 12 samples can be applied simultaneously
- ▶ Samples applied directly to the gel using SampleSure technology to ensure no protein loss
- ▶ Clear and identifiable bands produced
- ▶ All assay components included within the kit including Alkaline Buffer



12 tests per gel  
10 gels per pack  
Cat. no. **200900**

## Acid Haemoglobins

Helena has produced the Acid Haemoglobins gel using an advanced gel formulation ensuring enhanced resolution and sensitivity for the confirmation of abnormal haemoglobin samples. The integration of our BufferBlock technology ensures the consistent performance and convenience.

- Up to 12 samples can be applied simultaneously
- Samples applied directly to the gel using SampleSure technology to ensure no protein loss
- Clear and identifiable bands produced
- All assay components included within the kit including Acid Buffer

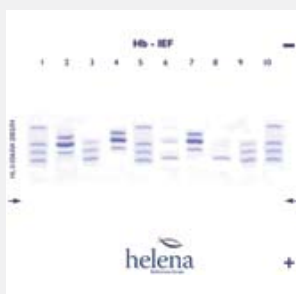


12 tests per gel  
10 gels per pack  
Cat. no. **201000**

## Haemoglobin IEF

Numerous haemoglobin variants, many capable of producing severe Haemolytic Anaemia, have been identified. Electrophoresis is generally considered the best method for separating and identifying abnormal haemoglobins.

- Crisp, sharply resolved Hb bands
- Complete processing in just 30 minutes
- Higher specification and higher resolution than conventional electrophoresis



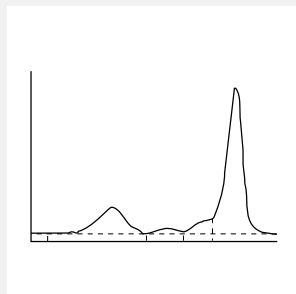
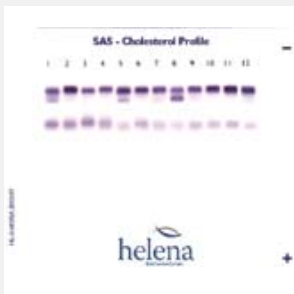
10 tests per gel  
10 gels per pack  
Cat. no. **100900**

# Cholesterol Profile

Helena's SAS-1 Cholesterol Profile Kit is a simple kit designed for the assessment of cholesterol content of the major lipoprotein fractions. The excellent separations of the various cholesterol constituents are easily conducted without the need for additional separation techniques. The cholesterol profile assay separates into HDL, vLDL, LDL and Lp(a).



- ▶ Up to 12 samples can be applied simultaneously
- ▶ Samples applied directly applied to the gel using SampleSure technology to ensure no protein loss
- ▶ Cholesterol specific staining system
- ▶ Easy and accurate quantification
- ▶ Clear and identifiable bands produced
- ▶ All assay components included within the kit



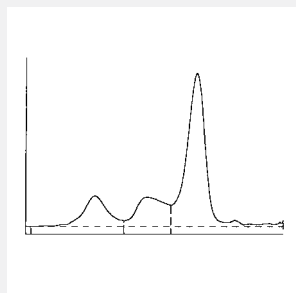
12 tests per gel  
10 gels per pack  
Cat. no. **200600**

# HDL Cholesterol

The additional SAS-1 HDL Cholesterol Kit complements the Cholesterol Profile Kit for assessment of the cholesterol content of HDL, vLDL and LDL cholesterol.



- ▶ Up to 12 samples can be applied simultaneously
- ▶ Samples applied directly to the gel using SampleSure technology to ensure no protein loss
- ▶ Cholesterol specific staining system
- ▶ Easy and accurate quantification
- ▶ Clear and identifiable bands produced
- ▶ All assay components included within the kit

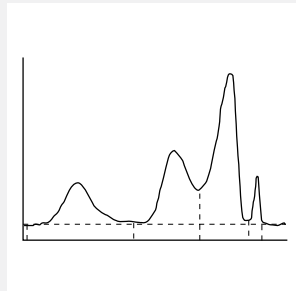


12 tests per gel  
10 gels per pack  
Cat. no. **200500**

# Lipoprotein Electrophoresis

Helena's Lipoprotein assay for the added assessment of Coronary Heart Disease has become integral to the in depth use of cardiac patient scoring systems. The Lipoprotein electrophoresis assay is an excellent method for the phenotyping of lipoproteins giving additional patient information compared to immunochemistry techniques.

- Up to 12 samples can be applied simultaneously
- Samples applied directly to the gel using SampleSure technology to ensure no protein loss
- Easy and accurate quantification
- Clear and identifiable bands produced
- All assay components included within the kit

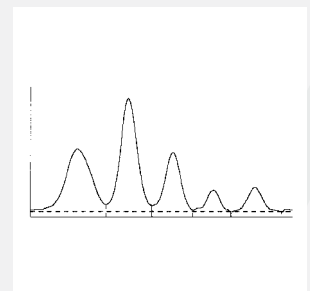
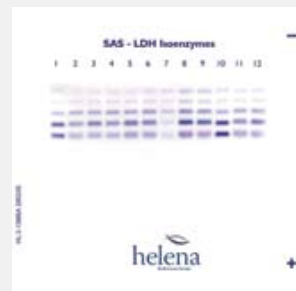
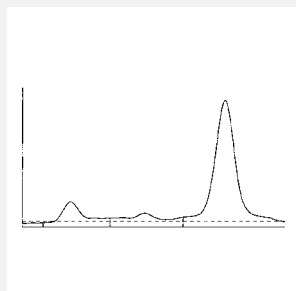
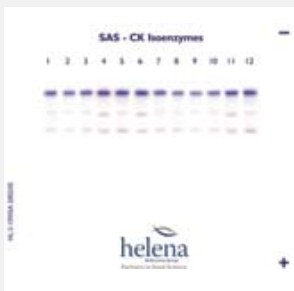


12 tests per gel  
10 gels per pack  
Cat. no. **201100**

# CK/LD Isoenzymes

Definitive laboratory testing for documentation of Acute Myocardial Infarction (AMI) includes Creatine Kinase (CK) isoenzyme studies in conjunction with Lactate Dehydrogenase (LD) isoenzymes.

- Rapid separation of CK-MM, CK-MB and CK-BB
- Rapid separation of five LD isoenzymes
- Quantitation of CK-MB, LD1 and LD2; essential to documenting myocardial injury



CK  
12 tests per gel  
10 gels per pack  
Cat. no. **201200**

LD  
12 tests per gel  
10 gels per pack  
Cat. no. **201300**

## IgG Isoelectric Focusing

The Helena IgG Isoelectric focusing kit is intended for the identification of IgG-specific oligoclonal banding especially in the diagnosis of Multiple Sclerosis. Paired serum and unconcentrated CSF samples are compared using Isoelectric Focusing coupled with immunoblotting. The Helena method is acknowledged as the gold standard for this diagnosis\*.

\* Freedman et al. "Recommended Standard of Cerebrospinal Fluid Analysis in the Diagnosis of Multiple Sclerosis." Arch Neurol/Vol 62, June 2005. Andersson et al. "Cerebrospinal Fluid in the Diagnosis of Multiple Sclerosis: A Consensus Report." Journal of Neurology, Neurosurgery and Psychiatry 1994; 57:897-902



CompleteAssay

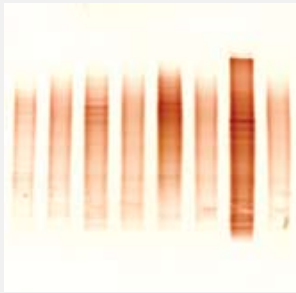


PowerUp



ActiveGelControl

- Up to 5 coupled unconcentrated CSF samples per gel
- No pre-concentration of samples required
- IgG IEF control material available
- All assay components included within the kit
- New Kappa & Lamda protocols available for easier interpretation of difficult samples



5 tests per gel  
10 gels per pack  
Cat. no. **102100** (double step)  
Cat. no. **102200** (single step)



Control  
10 × 100µl  
Cat. no. **102210**

## Transferrin IEF

Transferrin IEF uses Isoelectric Focusing coupled with immunodetection to discriminate between the various iso-forms of Transferrin. The method can be used for the qualitative analysis of serum samples to determine dysfunction in glycosilation of serum proteins as found in genetic disorders and alcohol abuse. This discrimination also allows for the identification of Tau protein in nasal and ear fluids in the case of trauma.



CompleteAssay



PowerUp

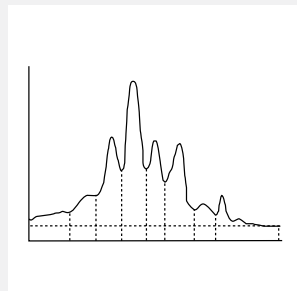


ActiveGelControl

- Up to 10 samples run per gel
- All major Transferrin isoforms clearly identified
- Applications for CSF, Transferrin, Glycosilation and Tau protein
- No non-specific staining of other proteins
- All assay components within the kit



10 tests per gel  
10 gels per pack  
Cat. no. **103100**





# Welcome to the SAS family

**Semi-automated systems**  
for small-to-medium workloads  
**SAS-1plus and SAS-2**

**Semi-automated systems**  
for medium-to-large workloads  
**SAS-3 and SAS-4**

**Gel analysis software**  
**Platinum 3**

**Sample handling**  
**SAS-5**

**Manual systems**  
**SAS-MX and SAS-M1**

**The most extensive range of assays**

**CompleteAssay**

**helena**  
Biosciences Europe  
Partners in Good Science

**PLATINUM 3**

**TrueIdentity**

Serum protein   IFE   Urine  
Isozymes   Lipoproteins   Isoelectric focusing

**We are the experts in clinical electrophoresis.**  
Our solution is built to provide exactly what you need, from simple manual to high throughput, high performance semi-automated systems all supporting the widest range of quality assays available. With our commitment to innovation, excellent service and support, Helena provides simply better electrophoresis.

myhelena

At Helena we believe in making things work better for our customers.

Our website is a good example. We've designed it to be professional, easy to use and most importantly to give you the information you need.

My Helena is the registered users section of our website. It's continually growing to offer support to our customers. You can download instructions for use for all of our electrophoresis assays, send us scans of gels you have technical queries on, and ask us for support. Keep checking myHelena because we're always adding more!



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Printed on paper manufactured from 75% recycled fibre and 25% from managed forests, using environmentally-friendly vegetable-based inks