

Reliable Multiple Sclerosis Diagnostics with FocusGel 6-11

SERVA
serving scientists

Isoelectric Focusing of Serum and Cerebrospinal Fluid (CSF)

Safe and highly reliable Multiple Sclerosis diagnostic

The identification of oligoclonal bands (OB) in cerebrospinal fluid (CSF) continues to be the most sensitive diagnostic test for Multiple Sclerosis (MS). CSF examination in MS diagnostics complements magnetic resonance imaging (MRI). MRI provides morphological information, while CSF analysis yields invaluable metabolic information.

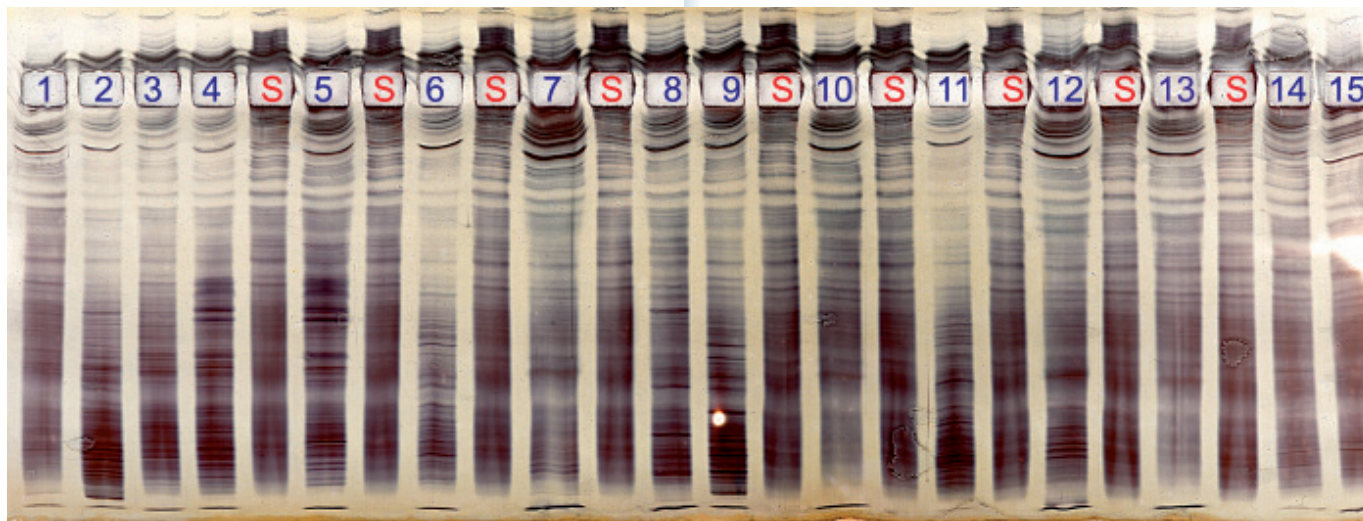
Isoelectric focusing (IEF) is widely recognized by CSF experts as the method of choice for oligoclonal band analysis. Agarose gels deliver more false positives than polyacrylamide gels, with severe consequences for the patient who is unnecessarily subjected to painful examinations and heavy medication with accompanying side effects.

Unique precast gels ensure optimal conditions for accurate diagnosis

With FocusGel 6-11, a precast polyacrylamide gel has been developed with a pH gradient optimized in the critical pH 6-11 region for reliable MS diagnostics. It also offers the additional advantage of improved handling due to the fact that the gels are non-toxic. For easy sample application the precast gel has two slots per patient to facilitate the accurate comparison of serum with CSF which is crucial for reliable diagnosis.

Increase your analysis options with FocusGels

In contrast to IEF with agarose gels, all four key visualization techniques can be performed with FocusGel 6-11: Silver staining, immunostaining after blotting, immunofixation followed by silver-staining and immunofluorescence inside the gel, can all be implemented using the same gel system.



Comparison of CSF lanes (figures) and serum lanes (S), separated on FocusGel 6 - 11, silver stained.

- Interpretation and diagnosis is easier and safer
- Results are highly reproducible
- High-resolution method produces fewer false positives

- Depending on gel types 24 or 40 preformed sample wells - no frames or application strips required
- Improved salt tolerance ensures straight iso-pH lines in all adjacent lanes
- Thinner gels for faster visualizations
- pH gradient spread in the pH 6-11 region provides full 6 cm read area

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The best differential method for the most reliable results

Early and correct interpretation of IgG bands in CSF and serum is the key to the successful treatment of MS. Both the quantity and the quality of the information available influence the correct interpretation of disease indications. The risk of false positives in MS diagnostics can have severe consequences for the patient.

Obtaining reliable results is dependent on achieving maximum sensitivity combined with minimal background. A high-resolution system is essential when false positives are to be avoided. Due to its high molecular weight, 160 kDa, oligoclonal IgG is not easy to focus in sharp bands. Normally a pH gradient of 6–11 should be run at more than 4000 Vh. Agarose gels cannot withstand more than 1500 Vh which results in blurred IgG bands with poor resolution. Polyacrylamide-based gels can withstand up to 4500 Vh, which allows separation of even the narrowest distances between bands.



IgGs poorly resolved by agarose

The use of agarose gels for IEF is a popular method due to the fact that agarose focusing gels can be press-blotted. In comparison to IEF with polyacrylamide gels there is a significant loss in resolution which can be crucial for correct diagnosis. FocusGels can also be subjected to press-blotting by applying the SERVA Gravity Blotter. The sharpness of the images rendered with FocusGels 6–11 makes interpretation both easier and safer.

- Clearest optical signal
- Best differential method
- Lowest background with fewer blurred bands

Improve your MS diagnostic results without changing your methodology or your instrumentation

The established silver staining procedure (SERVA CSF Silber Staining Kit) for ampholyte-based polyacrylamide gels allows the use of native CSF and provides consistent, reliable and sensitive results.

Removing everything that can influence silver staining greatly improves the quality of IEF results, ensuring that you obtain the clearest possible optical signal. SERVA has developed a unique ampholyte-based, precast PAG gel which offers distinct advantages over conventional PAG gels for MS diagnostics.

SERVA FocusGels are polymerized under special conditions which exclude the ampholytes, ensuring that they do not degrade. Catalysts, other toxic and non-polymerized substances are removed by washing the gel. These outstanding production techniques greatly enhance the separation of the most critical native applications, such as isoelectric focusing of serum and CSF.

Precast FocusGel 6–11 is ideally suited for obtaining the most complete and reliable MS diagnostic results possible without changing your current diagnostic procedures or re-equipping your laboratory.

Ordering information

Product	Quantity	Cat. no.
FocusGel 6-11 24S 250 x 115 x 0.65 mm, 24 Slots	5 gels ready-to-use	43329.01
FocusGel 6-11 40S 250 x 115 x 0.65 mm, 40 Slots	5 gels ready-to-use	43333.01
SERVA CSF Silver Staining Kit	1 kit	43398.01
HPE™ BlueHorizon System contents HPE™ BlueHorizon™ Horizontal Electrophoresis Chamber (Kat.-Nr. HPE-BH), BluePower 3000 Power Supply (Kat.-Nr. BP-3000- HPE) and HPE™ Chiller (Kat.-Nr. HPE-CU1)	1 unit	HPE-BHSYS
Gravity Blotter	1 unit	GB-14X29