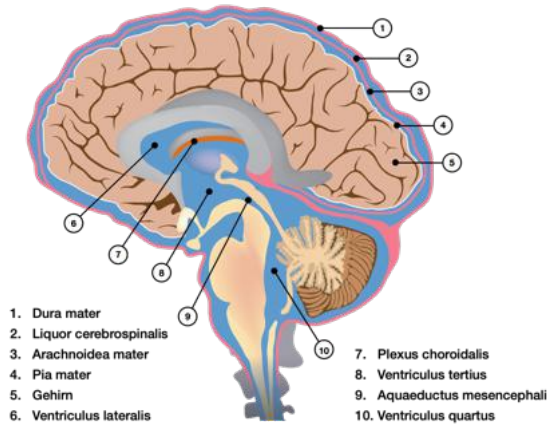


# Diagnosics for CSF analysis

## Cerebrospinal fluid diagnostics (CSF diagnostics)

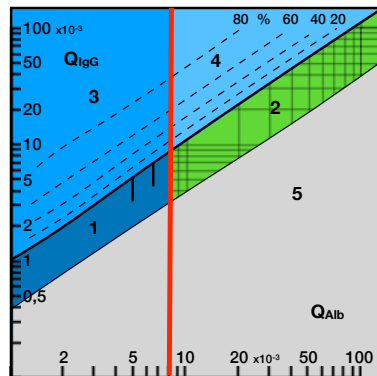
CSF analysis, an important area of neurological and psychiatric diagnostics, is used to diagnose diseases affecting the central nervous system (CNS). The cerebrospinal fluid, which is usually obtained by lumbar puncture, is a crystal-clear, colorless liquid that is in constant exchange with the serum. As part of cerebrospinal fluid diagnostics, metabolic products, electrolytes and proteins are therefore determined in the patient's cerebrospinal fluid and serum. The concentration of blood-dependent and CSF-derived proteins is modulated by the CSF flow rate and depends on the size of the molecule.



## CSF analysis

### Emergency program

Glucose (CSF/serum quotient)  
Total protein, lactate



### Duotrol® CSQ Advanced

**Serum:** albumin, IgG, IgA, IgM, glucose, total protein

**CSF:** albumin, IgG, IgA, IgM, glucose, total protein, lactate, chloride, sodium, ferritin

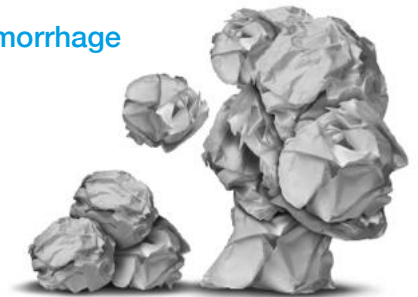
**LSQ-Calculatoin:** albumin, IgG, IgA, IgM, glucose

### Basic program

Albumin (LSQ)  
IgG/IgA/IgM (LSQ)  
Oligoclonal IgG bands  
Differential cell structure  
Gram stain

### CNS hemorrhage

Ferritin



## Certified quality control for routine diagnostics

Liquid, ready-to-use qualitycontrols of human origin

Normal or pathological measuring range (RiliBÄK 2023)

For verification of the accuracy and precision of your specifications

Find out more about our CSF diagnostic product range:

<https://www.biomed.de/en/products/quality-controls/csf-oligoclonal-bands-controls/>

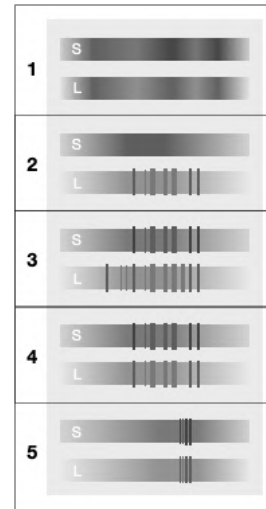
# Diagnostics for cerebrospinal fluid analysis

## Duotrol® Oligo

The serum-based special control Duotrol® Oligo serves as a qualitative control for the comparative determination of **IgG-specific oligoclonal bands (OKB)** in serum and CSF using isoelectric focusing (IEF). OKB or various fractions of oligoclonal IgG in the gamma range occur in the CSF in subacute and chronic inflammatory diseases of the central nervous system (CNS).

The control is available as a lyophilized positive control in combination with a liquid negative control.

Five possible finding patterns according to DGN and DGLN:



1. Normal results
2. Intrathecal IgG synthesis
3. Intrathecal IgG synthesis in systemic immune response
4. Passive filtration of IgG from the blood into the CSF
5. No intrathecal IgG synthesis

S: Serum, L: CSF



In CSF analysis, an integrated overall finding should include the presentation of the results of cytology, protein analysis and immunology for optimal diagnostic assessment and diagnosis.

Up to 4 cells/ $\mu$ L in lumbar CSF are classified as normal. The well-established Pappenheim stain and the Gram stain for differentiation of bacteria are performed in the basic program of the 3-stage CSF analysis.

## BIOMED CSF cytology

Differential staining for cytological preparations

### Hemafix®

Overview staining according to Pappenheim -

Differential blood count as a result of the microscopic examination

- Leukocytes
- Lymphocytes
- Monocytes
- Granulocytes (neutrophils, eosinophils, basophils)

### Gramyfix®

Classification of bacteria according to Gram

