Test Definition: FMCPL

Meningoencephalitis Comprehensive Panel, CSF

Reporting Title: Meningoencephalitis Comp Panel, CSF
Performing Location: Focus Diagnostics,

Specimen Requirements:

Submit 4 mL of spinal fluid (CSF). Refrigerate specimen after collection and ship at refrigerate temperature in a sterile, plastic screw-cap vial.

Specimen Type	Temperature	Time
CSF	Refrigerated (preferred)	7 days
	Frozen	30 days

Result Codes:

Result ID	Reporting Name	Type	Unit	LOINC®
Z2907	California IgG	Alphanumeric		In Process
Z2908	California IgM	Alphanumeric		In Process
Z2909	Interpretation	Alphanumeric		In Process
Z2922	Eastern Equine IgG	Alphanumeric		In Process
Z2923	Eastern Equine IgM	Alphanumeric		In Process
Z2924	Interpretation	Alphanumeric		In Process
Z2946	St. Louis IgG	Alphanumeric		In Process
Z2947	St. Louis IgM	Alphanumeric		In Process
Z2948	Interpretation	Alphanumeric		In Process
Z2950	Western Equine IgG	Alphanumeric		In Process
Z2951	Western Equine IgM	Alphanumeric		N/A
Z2952	Interpretation	Alphanumeric		In Process
Z2937	LCM IgG	Alphanumeric		In Process
Z2938	LCM IgM	Alphanumeric		In Process
Z2939	Interpretation	Alphanumeric		In Process
Z2906	Adenovirus Ab	Alphanumeric		In Process
Z2935	Influenza A Ab	Alphanumeric		In Process
Z2936	Influenza B Ab	Alphanumeric		In Process

Result ID	Reporting Name	Type	Unit	LOINC®
Z2940	Measles (Rubeola) IgG, IFA	Alphanumeric		In Process
Z2941	Measles (Rubeola) IgM, IFA	Alphanumeric		In Process
Z2942	Interpretation	Alphanumeric		In Process
Z2943	Mumps Ab IgG, IFA	Alphanumeric		In Process
Z2944	Mumps Ab IgM, IFA	Alphanumeric		In Process
Z2945	Interpretation	Alphanumeric		In Process
Z2949	Varicella-Zoster Virus Ab	Alphanumeric		In Process
Z2910	Coxsackie A2 Ab	Alphanumeric		In Process
Z2911	Coxsackie A4 Ab	Alphanumeric		In Process
Z2912	Coxsackie A7 Ab	Alphanumeric		In Process
Z2913	Coxsackie A9 Ab	Alphanumeric		In Process
Z2914	Coxsackie A10 Ab	Alphanumeric		In Process
Z2915	Coxsackie A16 Ab	Alphanumeric		In Process
Z2916	Coxsackie B1 Ab	Alphanumeric		In Process
Z2917	Coxsackie B2 Ab	Alphanumeric		In Process
Z2918	Coxsackie B3 Ab	Alphanumeric		In Process
Z2919	Coxsackie B4 Ab	Alphanumeric		In Process
Z2920	Coxsackie B5 Ab	Alphanumeric		In Process
Z2921	Coxsackie B6 Ab	Alphanumeric		In Process
Z2928	Echovirus 4 Ab	Alphanumeric		In Process
Z2929	Echovirus 7 Ab	Alphanumeric		In Process
Z2930	Echovirus 9 Ab	Alphanumeric		In Process
Z2931	Echovirus 11 Ab	Alphanumeric		In Process
Z2932	Echovirus 30 Ab	Alphanumeric		In Process
Z2953	Cytomegalovirus IgG, ELISA CSF	Alphanumeric		In Process
Z2954	Cytomegalovirus IgM, ELISA CSF	Alphanumeric		In Process
Z3235	West Nile Ab IgG, CSF	Alphanumeric		In Process
Z3236	West Nile Ab IgM, CSF	Alphanumeric		In Process
Z2933	HSV 1 IgG Index	Alphanumeric		In Process
Z2934	HSV 2 IgG Index	Alphanumeric		In Process
Z2955	HSV 1 IgM Screen	Alphanumeric		In Process

Result ID	Reporting Name	Type	Unit	LOINC®
Z2956	HSV 2 IgM Screen	Alphanumeric		In Process

Components:

Test ID	Reporting Name	CPT Units	CPT Code	Always Performed	Orderable Separately
FCEVC	Calif Enceph Virus Ab Pnl, IFA CSF			Yes	No
FEEQC	E. Equine Enceph Virus Ab, IFA CSF			Yes	No
FSTLE	St. Louis Enceph Virus Ab, IFA CSF			Yes	No
FWEQC	W. Equine Enceph IgG/IgM, IFA CSF			Yes	No
FLCHV	Lymphocytic Choriomeningitis Ab, CSF			Yes	No
FADAC	Adenovirus Antibody, CSF			Yes	No
FITAB	Influenza Virus A and B Ab, CSF			Yes	No
FMGMA	Measles (Rubeola) G/M Ab, IFA CSF			Yes	No
FMABC	Mumps Antibody Panel, IFA CSF			Yes	No
FVZVA	Varicella-Zoster Virus Antibody, CSF			Yes	No
FCASF	Coxsackie A Antibodies, CSF			Yes	No
FCBAC	Coxsackie B (1-6) Antibodies, CSF			Yes	No
FEASF	Echovirus Antibodies, CSF			Yes	No
FCMGA	Cytomegalovirus IgG Ab, ELISA CSF			Yes	No
FCMVM	Cytomegalovirus IgM Ab, ELISA CSF			Yes	No
FWNIL	West Nile Virus Ab (IgG, IgM), CSF			Yes	No
FHSAC	HSV 1/2 IgG Type-Specific Ab, CSF			Yes	No
FHERM	HSV 1/2 IgM Ab IFA Reflex to Titer			Yes	No

CPT Code Information:

86603-Adenovirus
86644-Cytomegalovirus (CMV), IgG
86645-Cytomegalovirus (CMV), IgM
86651 x 2-Encephalitis, California
86652 x 2-Encephalitis, Eastern equine
86653 x 2-Encephalitis, St. Louis
86654 x 2-Encephalitis, Western equine
86658 x 17-Enterovirus (e.g., coxsackie A,B,echo)
86695 x 2-Herpes simplex, IgG, type 1

86696 x 2-Herpes simplex, IgM, type 2
86710 x 2-Antibody;Influenza virus
86727 x 2-Lymphocytic choriomeningitis
86735 x 2-Mumps
86765 x 2-Rubeola
86787-Varicella-zoster
86788-West Nile virus, IgM
86789-West Nile virus, IgG
86695-Herpes simplex, type 1 IgM Titer (if appropriate)
86696-Herpes simplex, type 2 IgM Titer (if appropriate)

Reflex Tests:

Test ID	Reporting Name	CPT Units	CPT Code	Always Performed	Orderable Separately
FMTR1	HSV 1 IgM Titer		Profile	No	No
FMTR2	HSV 2 IgM Titer	1	86696	No	No

Result Codes for Reflex Tests:

Test ID	Result ID	Reporting Name	Type	Unit	LOINC®
FMTR1	Z2957	HSV 1 IgM Titer	Alphanumeric		In Process
FMTR2	Z2958	HSV 2 IgM Titer	Alphanumeric		In Process

Reference Values:

Meningoencephalitis Comprehensive Panel (CSF)

California Encephalitis Virus Antibody Panel, IFA (CSF)

Reference Range: IgG <1:4
IgM <1:4

NOTE: Specimens positive for arbovirus antibody are CDC reportable. Please contact your local public health agency.

Diagnosis of infections of the central nervous system can be accomplished by demonstrating the presence of intrathecally-produced specific antibody. However, interpreting results is complicated by low antibody levels found in CSF, passive transfer of antibody from blood, and contamination via bloody taps. The interpretation of CSF results must consider CSF-serum antibody ratios to the infectious agent.

Eastern Equine Encephalitis Virus Antibody, IFA (CSF)

Reference Range: IgG <1:4

IgM <1:4

NOTE: Specimens positive for arbovirus antibody are CDC reportable. Please contact your local public health agency.

Diagnosis of infections of the central nervous system can be accomplished by demonstrating the presence of intrathecally-produced specific antibody. However, interpreting results is complicated by low antibody levels found in CSF, passive transfer of antibody from blood, and contamination via bloody taps. The interpretation of CSF results must consider CSF-serum antibody ratios to the infectious agent.

St. Louis Encephalitis Virus Antibody, IFA (CSF)

Reference Range: IgG <1:4
IgM <1:4

NOTE: Specimens positive for arbovirus antibody are CDC reportable. Please contact your local public health agency.

Diagnosis of infections of the central nervous system can be accomplished by demonstrating the presence of intrathecally-produced specific antibody. However, interpreting results is complicated by low antibody levels found in CSF, passive transfer of antibody from blood, and contamination via bloody taps. The interpretation of CSF results must consider CSF-serum antibody ratios to the infectious agent.

Western Equine Encephalitis IgG & IgM Ab Pnl, IFA (CSF)

Reference Range: IgG <1:4
IgM <1:4

NOTE: Specimens positive for arbovirus antibody are CDC reportable. Please contact your local public health agency.

Diagnosis of infections of the central nervous system can be accomplished by demonstrating the presence of intrathecally-produced specific antibody. However, interpreting results is complicated by low antibody levels found in CSF, passive transfer of antibody from blood, and contamination via bloody taps. The interpretation of CSF results must consider CSF-serum antibody ratios to the infectious agent.

Lymphocytic Choriomeningitis (LCM) Virus Ab, IFA (CSF)

Reference Range: IgG <1:1
IgM <1:1

Interpretive Criteria:
<1:1 Antibody Not Detected
> or = 1:1 Antibody Detected

Diagnosis of infections of the central nervous system can be accomplished by demonstrating the presence of intrathecally-produced specific antibody. However, interpreting results is complicated by low antibody levels found in CSF, passive transfer of antibody from blood, and contamination via bloody taps.

This assay was developed and its performance characteristics determined by Focus Diagnostics. It has not been cleared or approved by the U.S. Food and Drug Administration. The FDA has determined that such clearance or approval is not necessary. Performance characteristics refer to the analytical performance of the test.

Adenovirus Antibody, CSF

Reference Range: <1:1

Interpretive Criteria:
<1:1 Antibody Not Detected
> or = 1:1 Antibody Detected

Diagnosis of infections of the central nervous system is accomplished by demonstrating the presence of intrathecally-produced specific antibody. Interpretation of results may be complicated by low antibody levels found in CSF, passive transfer of antibody from blood, and contamination via bloody taps. The interpretation of CSF results must consider CSF-serum antibody ratios to the infectious agent.

This test was developed and its performance characteristics have been determined by Focus Diagnostics. Performance characteristics refer to the analytical performance of the test.

Influenza Type A and B Antibodies, CSF

Reference Range: <1:1

Interpretive Criteria:
<1:1 Antibody Not Detected
> or = 1:1 Antibody Detected

Diagnosis of infections of the central nervous system is accomplished by demonstrating the presence of intrathecally-produced specific antibody. Interpretation of results may be complicated by low antibody levels found in CSF, passive transfer of antibody from blood, and contamination via bloody taps. The interpretation of CSF results must consider CSF-serum antibody ratios to the infectious agent.

This test was developed and its performance characteristics have been determined by Focus Diagnostics. Performance characteristics refer to the analytical performance of the test.

Measles (Rubeola) IgG and IgM Antibody Panel, IFA (CSF)

Reference Range: IgG <1:64
IgM <1:1

Diagnosis of central nervous system infections can be accomplished by demonstrating the presence of intrathecally-produced specific antibody. Interpreting results may be complicated by low antibody levels found in CSF, passive transfer of antibody from blood, and contamination via bloody taps. The interpretation of CSF results must consider CSF-serum antibody ratios to the infectious agent.

This assay was developed and its performance characteristics have been determined by Focus Diagnostics. It has not been cleared or approved by the U.S. Food and Drug Administration. The FDA has determined that such clearance or approval is not necessary. Performance characteristics refer to the analytical performance of the test.

Mumps Antibody Panel, IFA (CSF)

Reference Range: IgG <1:8
IgM <1:1

Diagnosis of infections of the central nervous system can be accomplished by demonstrating the presence of

intrathecally-produced specific antibody. Interpretation of results may be complicated by low antibody levels found in CSF, passive transfer of antibody from blood, and contamination via bloody taps. The interpretation of CSF results must consider CSF-serum antibody ratios to the infectious agent.

This assay was developed and its performance characteristics have been determined by Focus Diagnostics. It has not been cleared or approved by the U.S. Food and Drug Administration. The FDA has determined that such clearance or approval is not necessary. Performance characteristics refer to the analytical performance of the test.

Varicella-Zoster Virus Antibody, CSF

Reference Range: <1:1

Interpretive Criteria:
<1:1 Antibody Not Detected
> or = 1:1 Antibody Detected

Diagnosis of infections of the central nervous system is accomplished by demonstrating the presence of intrathecally-produced specific antibody. Interpretation of results may be complicated by low antibody levels found in CSF, passive transfer of antibody from blood, and contamination via bloody taps. The interpretation of CSF results must consider CSF-serum antibody ratios to the infectious agent.

This test was developed and its performance characteristics have been determined by Focus Diagnostics. Performance characteristics refer to the analytical performance of the test.

Coxsackie A Antibodies, CSF

Reference Range: <1:1

Interpretive Criteria:
<1:1 Antibody Not Detected
> or = 1:1 Antibody Detected

Diagnosis of infections of the central nervous system is accomplished by demonstrating the presence of intrathecally-produced specific antibody. Interpretation of results may be complicated by low antibody levels found in CSF, passive transfer of antibody from blood, and contamination via bloody taps. The interpretation of CSF results must consider CSF-serum antibody ratios to the infectious agent.

This test was developed and its performance characteristics have been determined by Focus Diagnostics. Performance characteristics refer to the analytical performance of the test.

Coxsackie B (1-6) Antibodies, CSF

Reference Range: <1:1

Interpretive Criteria:
<1:1 Antibody Not Detected
> or = 1:1 Antibody Detected

Diagnosis of infections of the central nervous system is accomplished by demonstrating the presence of intrathecally-produced specific antibody. Interpretation of results may be complicated by low antibody levels found in CSF, passive transfer of antibody from blood, and contamination via bloody taps. The interpretation of CSF results must

consider CSF-serum antibody ratios to the infectious agent.

This test was developed and its performance characteristics have been determined by Focus Diagnostics. Performance characteristics refer to the analytical performance of the test.

Echovirus Antibodies, CSF

Reference Range: <1:1

Interpretive Criteria:

<1:1	Antibody Not Detected
> or = 1:1	Antibody Detected

Diagnosis of infections of the central nervous system is accomplished by demonstrating the presence of intrathecally-produced specific antibody. Interpretation of results may be complicated by low antibody levels found in CSF, passive transfer of antibody from blood, and contamination via bloody taps. The interpretation of CSF results must consider CSF-serum antibody ratios to the infectious agent.

This test was developed and its performance characteristics have been determined by Focus Diagnostics. Performance characteristics refer to the analytical performance of the test.

Cytomegalovirus (CMV) IgG Antibody, ELISA (CSF)

Reference Range: <0.80

Interpretive Criteria:

<0.80	Antibody not detected
0.80 - 0.99	Equivocal
> or = 1.00	Antibody detected

Diagnosis of infections of the central nervous system is accomplished by demonstrating the presence of intrathecally-produced specific antibody. Interpretation of results may be complicated by low antibody levels found in CSF, passive transfer of antibody from blood, and contamination via bloody taps. The interpretation of CSF results must consider CSF-serum antibody ratios to the infectious agent. The intrathecal synthesis of CMV antibody is most accurately measured by performing the Antibody Index for CNS Infection.

Cytomegalovirus (CMV) IgM Antibody, ELISA (CSF)

Reference Range: <0.90
Interpretive Criteria:

<0.90	Antibody not detected
0.90 - 1.09	Equivocal
> or = 1.10	Antibody detected

Diagnosis of infections of the central nervous system is accomplished by demonstrating the presence of intrathecally-produced specific antibody. Interpretation of results may be complicated by low antibody levels found in CSF, passive transfer of antibody from blood, and contamination via bloody taps. The interpretation of CSF results must consider CSF-serum antibody ratios to the infectious agent. The intrathecal synthesis of CMV antibody is most accurately measured by performing the Antibody Index for CNS Infection.

West Nile Virus Antibodies (IgG, IgM), CSF

Reference Range: IgG <1.30
IgM <0.90

Interpretive Criteria:

IgG:

<1.30	Antibody not detected
1.30 - 1.49	Equivocal
>=1.50	Antibody detected

IgM:

<0.90	Antibody not detected
0.90 - 1.10	Equivocal
>1.10	Antibody detected

West Nile Virus (WNV) IgM is usually detectable in CSF from WNV-infected patients with encephalitis or meningitis at the time of clinical presentation. Because IgM antibody does not readily cross the blood-brain barrier, IgM antibody in CSF strongly suggest acute central nervous system infection. WNV antibody results from CSF should be interpreted with caution. Possible complicating factors include low levels of antibody found in CSF, passive transfer of antibodies from blood, and contamination from bloody taps. Antibodies induced by other flavivirus infections (eg. Dengue virus, St. Louis encephalitis virus) may show cross-reactivity with WNV.

Herpes Simplex Virus 1/2 (IgG) Type Specific Antibodies, CSF

Reference Range: < or = 1.00

Interpretive Criteria:

< or = 1.00	Antibody not detected
> 1.00	Antibody detected

Detection of HSV type-specific IgG in CSF may indicate central nervous system (CNS) infection by that HSV type. However, interpretation of results may be complicated by a number of factors, including low antibody levels found in CSF, passive transfer of antibody across the blood-brain barrier, and serum contamination of CSF during CSF collection. PCR detection of type-specific HSV DNA in CSF is the preferred method for identifying HSV CNS infections.

Herpes Simplex Virus 1/2 Antibody (IgM), IFA with Reflex to Titer, CSF

Reference Range: Negative

The IFA procedure for measuring IgM antibodies to HSV 1 and HSV 2 detects both type-common and type-specific HSV antibodies. Thus, IgM reactivity to both HSV 1 and HSV 2 may represent crossreactive HSV antibodies rather than exposure to both HSV 1 and HSV 2.

Diagnosis of central nervous system infections can be accomplished by demonstrating the presence of intrathecally-produced specific antibody. Interpreting results may be complicated by low antibody levels found in CSF, passive transfer of antibody from blood, and contamination via bloody taps. The interpretation of CSF results must consider CSF-serum antibody ratios to the infectious agent.

This test was developed and its performance characteristics have been determined by Focus Diagnostics. Performance characteristics refer to the analytical performance of the test.

Test Definition: FMCPL

Meningoencephalitis Comprehensive Panel, CSF

Test Performed by: Focus Diagnostics, Inc.
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Cypress, CA 90630-4750