Test Definition: FMCPS

Meningoencephalitis Comprehensive Panel (Serum)

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

Specimen Requirements:

Draw blood in a plain, red-top tube(s). (Serum gel tube is acceptable.) Spin down and send 6 mL of serum refrigerate in a plastic vial.

Specimen Type	Temperature	Time
Serum	Refrigerated (preferred)	14 days
	Ambient	7 days
	Frozen	30 days

Result Codes:

Result ID	Reporting Name	Type	Unit	LOINC®
Z2825	Adenovirus Ab	Alphanumeric		
Z2828	Varicella-Zoster Virus Ab	Alphanumeric		
Z2802	LCM IgG	Alphanumeric		
Z2803	LCM IgM	Alphanumeric		
Z2804	Interpretation	Alphanumeric		
Z2805	Measles (Rubeola) IgG, IFA	Alphanumeric		
Z2806	Measles (Rubeola) IgM, IFA	Alphanumeric		
Z2807	Interpretation	Alphanumeric		
Z2808	Mumps Ab IgG, IFA	Alphanumeric		
Z2809	Mumps Ab IgM, IFA	Alphanumeric		
Z2810	Interpretation	Alphanumeric		
Z2811	E. Equine Enceph. Virus IgG	Alphanumeric		
Z2812	E. Equine Enceph. Virus IgM	Alphanumeric		
Z2813	Interpretation	Alphanumeric		
Z2814	CA Enceph. Virus IgG	Alphanumeric		
Z2815	CA Enceph. Virus IgM	Alphanumeric		
Z2816	Interpretation	Alphanumeric		

Result ID	Reporting Name	Type	Unit	LOINC®
Z2817	St. Louis Enceph. Virus IgG	Alphanumeric		
Z2818	St. Louis Enceph. Virus IgM	Alphanumeric		
Z2819	Interpretation	Alphanumeric		
Z2820	W. Equine Enceph. Virus IgG	Alphanumeric		
Z2821	W. Equine Enceph. Virus IgM	Alphanumeric		
Z2822	Interpretation	Alphanumeric		
Z2823	Cytomegalovirus IgG, ELISA	Alphanumeric		
Z2824	Cytomegalovirus IgM, ELISA	Alphanumeric		
Z2826	Influenza A Ab	Alphanumeric		
Z2827	Influenza B Ab	Alphanumeric		
Z2829	Coxsackie A2 Ab	Alphanumeric		
Z2830	Coxsackie A4 Ab	Alphanumeric		
Z2831	Coxsackie A7 Ab	Alphanumeric		
Z2832	Coxsackie A9 Ab	Alphanumeric		
Z2833	Coxsackie A10 Ab	Alphanumeric		
Z2834	Coxsackie A16 Ab	Alphanumeric		
Z2835	Coxsackie B1 Ab	Alphanumeric		
Z2836	Coxsackie B2 Ab	Alphanumeric		
Z2837	Coxsackie B3 Ab	Alphanumeric		
Z2838	Coxsackie B4 Ab	Alphanumeric		
Z2839	Coxsackie B5 Ab	Alphanumeric		
Z2840	Coxsackie B6 Ab	Alphanumeric		
Z2841	Echovirus 4 Ab	Alphanumeric		
Z2842	Echovirus 7 Ab	Alphanumeric		
Z2843	Echovirus 9 Ab	Alphanumeric		
Z2844	Echovirus 11 Ab	Alphanumeric		
Z2845	Echovirus 30 Ab	Alphanumeric		
Z2846	HSV 1 IgG Index	Alphanumeric		
Z2847	HSV 1 IgG Interpretation	Alphanumeric		
Z2848	HSV 2 IgG Index	Alphanumeric		
Z2849	HSV 2 IgG Interpretation	Alphanumeric		

Result ID	Reporting Name	Type	Unit	LOINC®
Z2850	HSV 1/2 IgM Index	Alphanumeric		
Z2851	HSV 1/2 IgM Confirmatory IFA	Alphanumeric		
Z2852	HSV 1/2 IgM Interpretation	Alphanumeric		
Z2853	West Nile Virus IgG	Alphanumeric		
Z2854	West Nile Virus IgM	Alphanumeric		
Z2855	Interpretation	Alphanumeric		

Components:

Test ID	Reporting Name	CPT Units	CPT Code	Always Performed	Orderable Separately
Billing only	LYMPH CHORIOMENINGITIS AB	2	86727		
Billing only	RUBEOLA ANTIBODY	2	86765		
Billing only	RUBEOLA ANTIBODY	2	86735		
Billing only	ENCEPHALITIS ANTIBODY	2	86652		
Billing only	ENCEPHALITIS ANTIBODY	2	86651		
Billing only	ENCEPHALITIS ANTIBODY	2	86653		
Billing only	ENCEPHALITIS ANTIBODY	2	86654		
FAVAS	Adenovirus Antibody	1	86603	Yes	No
Billing only	INFLUENZA VIRUS ANTIBODY	2	86710		
FVZAS	Varicella-Zoster Virus Antibody	1	86787	Yes	No
Billing only	CMV ANTIBODY	1	86644		
Billing only	CMV ANTIBODY IGM	1	86645		
Billing only	ENTEROVIRUS ANTIBODY	6	86658		
Billing only	ENTEROVIRUS ANTIBODY	6	86658		
Billing only	ENTEROVIRUS ANTIBODY	5	86658		
Billing only	HERPES SIMPLEX TEST	1	86694		
Billing only	HERPES SIMPLEX TEST	1	86695		
Billing only	HERPES SIMPLEX TYPE 2	1	86696		
Billing only	WEST NILE VIRUS AB IGM	1	86788		
Billing only	WEST NILE VIRUS ANTIBODY	1	86789		

Test ID	Reporting Name	CPT Units	CPT Code	Always Performed	Orderable Separately
FLCMI	Lymphocytic Choriomeningitis Ab			Yes	No
FMRAP	Measles (Rubeola) Ab Panel, IFA			Yes	No
FMAPI	Mumps Antibody Panel, IFA			Yes	No
FEEVP	E. Equine Enceph Virus Ab Panel, IFA			Yes	No
FCEAP	Calif Enceph Virus Ab Pnl, IFA			Yes	No
FSLVS	St. Louis Enceph Virus Ab, IFA			Yes	No
FWEEP	W. Equine Enceph Ab Panel, IFA			Yes	No
FCMAP	Cytomegalovirus (CMV) Ab Pnl, ELISA			Yes	No
FIABA	Influenza Virus A and B Ab			Yes	No
FCAA	Coxsackie A Antibodies, Serum			Yes	No
FCBAS	Coxsackie B(1-6) Antibodies, Serum			Yes	No
FEABS	Echovirus Antibodies			Yes	No
FHMG	HSV 1/2 IgM and Type-Specific IgG			Yes	No
FWNAP	West Nile Virus Ab Panel, ELISA			Yes	No

Reflex Tests:

Test ID	Reporting Name	CPT Units	CPT Code	Always Performed	Orderable Separately
F12BO	HSV 1/2 IgM Confirmatory IFA	1	86694	No	No Billing Only

Reference Values:

Meningoencephalitis Comprehensive Panel (Serum)

Lymphocytic Choriomeningitis (LCM), IFA
Measles (Rubeola) Ab Panel, IFA
Mumps Antibody Panel, IFA
Eastern Equine Encephalitis Virus Antibody Panel, IFA
California Encephalitis Virus Antibody Panel, IFA
St. Louis Encephalitis Virus Serology, IFA
Western Equine Encephalitis Ab Panel, IFA

IFA Reference Ranges:
IgG (all viruses except measles) <1:16
IgG (measles virus) <1:8

IgM (LCM, measles, mumps) <1:20
IgM (encephalitis virus) <1:16

Cytomegalovirus (CMV) Ab Panel, ELISA

Reference Range: IgG <0.80
IgM <0.90

Interpretive Criteria:
IgG: <0.80 Antibody not detected
0.80 - 0.99 Equivocal
> or = 1.00 Antibody detected

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

Antibody to lymphocytic choriomeningitis virus is often detectable within a few days of clinical symptoms. The presence of mumps IgG antibody in the absence of mumps IgM antibody indicates prior exposure and immunity to mumps virus. Measles IgM antibody is typically detectable for only 30 days after rash onset. Detection of CMV IgG antibody indicates prior exposure. CMV IgM antibody may persist for up to 2 years following primary infection. Human infections caused by arboviruses are seasonal, from mid-summer to late summer. Typical geographic distributions are: Eastern equine encephalitis virus from New England to Texas, California encephalitis virus in the north central states, St. Louis encephalitis virus throughout the southern, southwestern, and west central states, and Western encephalitis virus throughout the western states. For all viruses mentioned, the presence of IgM antibody or a four fold increase in IgG titer between acute and convalescent sera indicates recent or current infection.

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

The LCM, measles, and mumps antibody tests were developed and their performance characteristics have been determined by Focus Diagnostics. They have 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 tests.

Adenovirus Antibody, Serum
Influenza Types A and B Antibodies, Serum
Varicella-Zoster Virus Antibody, Serum
Coxsackie A Antibodies, Serum
Coxsackie B(1-6) Antibodies, Serum
Echovirus Antibodies, Serum

CF Reference Ranges: <1:8

CF Interpretive Criteria:

<1:8 Antibody Not Detected

1:8 - 1:16 (Coxsackie A,B, Echovirus) Equivocal
1:8 - 1:32 (Adenovirus, Influenza A,B) Equivocal
1:8 - 1:128 (Varicella Zoster) Equivocal

> or = 1:32 (Coxsackie A,B, Echovirus) Antibody Detected
> or = 1:64 (Adenovirus, Influenza A,B) Antibody Detected
> or = 1:256 (Varicella Zoster) Antibody Detected

Single titers in the appropriate "antibody detected" range are suggestive of recent infection. Due to the shortlived nature of complement fixing antibodies, equivocal titers may also be indicative of recent infection. A four fold or greater change in titer between acute and convalescent sera is considered confirmatory evidence of infection. Among the enteroviruses (Coxsackie A, B, and Echovirus), there is considerable crossreactivity; however, the highest titer is usually associated with the infecting serotype.

The complement fixation tests were developed and their performance characteristics have been determined by Focus Diagnostics. Performance characteristics refer to the analytical performance of these tests.

HSV 1/2 IgM and Type-Specific IgG (HerpeSelect), ELISA

Reference Range: <0.90

IgG Index	Antibody Status
<0.90	Antibody not detected
0.90 - 1.10	Equivocal
>1.10	Antibody detected

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

The HerpeSelect test system utilizes recombinant type-specific HSV-1 and HSV-2 antigens to detect only type-specific IgG antibodies. Results from these serologic assays must be correlated with clinical history and other data to evaluate the patient's HSV status. As with all serologic tests, false positives may occur. Repeat testing or utilization of a different assay may be indicated in some settings (e.g., patients with a low likelihood of HSV infection).

The HSV IgM ELISA detects type-common as well as type-specific IgM antibodies; thus, the type-specificity of any HSV IgM antibodies detected cannot be reliably determined. All samples giving an equivocal or positive IgM ELISA result are confirmed by an IFA procedure. As with the HSV IgM ELISA, however, IgM reactivity in the IFA is not type-specific.

West Nile Virus Antibody Panel, ELISA

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 by the time symptoms appear, but IgG may not be detectable until day 4 or day 5 of illness. Although WNV IgM persists for more than a year in some patients with WNV encephalitis, detection of WNV IgM remains a reliable indicator of recent infection for most patients.

Antibodies induced by other flavivirus infections (e.g., Dengue, St. Louis Encephalitis) may show crossreactivity with WNV; thus, antibody detection using this panel is not diagnostically conclusive for WNV infection. Final diagnosis should be based on clinical assessment and confirmatory assays, such as the plaque reduction neutralization test.

Test Performed by: Focus Diagnostics, Inc.
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