



Echovirus Neutralizing Assay in Serum and CSF

Specimen Type	Serum CSF	
Specimen Volume	2.0 mL	
Collection	Serum: Serum gel tube or red top tube with no additives. Allow specimen to clot for 30 minutes at room temperature. Centrifuge for 10 minutes at 3000 rpm. Remove serum and place in a transfer tube. Refrigerate immediately. CSF: Sterile transfer tube. Centrifuge for 10 minutes at 3,000 rpm. Remove CSF and place in a transfer tube. Refrigerate immediately.	
Minimum Volume	0.5 mL	
Handling	Ship refrigerated or frozen on dry ice.	
Rejection Criteria	Hemolyzed specimens Lipemic specimens Specimens with particulate matter or microbial contamination. Specimens outside of listed stability.	
Stability	Serum: Room Temperature for 3 days, Refrigerated for 7 days, Frozen for 6 months. CSF: Room Temperature for 14 days, Refrigerated for 14 days, Frozen for 6 months.	
Methodology	Neutralization Assay	
Reference Range	Serum	CSF
	Echovirus 6: $\leq 1/40$	Echovirus 6: $< 1:10$
	Echovirus 7: $\leq 1/40$	Echovirus 7: $< 1:10$
	Echovirus 9: $\leq 1/80$	Echovirus 9: $< 1:10$
	Echovirus 11: $\leq 1/40$	Echovirus 11: $< 1:10$
	Echovirus 30: $\leq 1/160$	Echovirus 30: $< 1:10$
Turnaround Time	Up to 10 business days	
CPT Code	Serum: 86658 x 5 CSF: 86658 x 5	



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<p>Clinical Significance</p>	<p>An Echovirus is a type of RNA virus that belongs to the genus Enterovirus of the Picornaviridae family. There are 30 recognized Echovirus serotypes (1-9, 11-27, 29-30). Mode of transmission: Fecal-oral route.</p> <p>Enterovirus infections are common throughout the world. Virus watch studies suggest that 10 million to 15 million illnesses due to nonpoliovirus enteroviruses occur each year. Most infections are subclinical; clinical manifestations vary from mild to lethal and acute to chronic; associated with aseptic meningitis (mostly serotypes 2, 5, 6, 7, and 9), muscle weakness and paralysis, exanthems and enanthems, pericarditis, myocarditis, common cold, conjunctivitis, infantile diarrhea and acute febrile respiratory illnesses. The ‘gold standard’ for laboratory diagnosis of enteroviruses is cell culture isolation, followed by serotype identification by neutralization assay.</p>
<p>Principle</p>	<p>This assay is based on the dose-dependent ability of specific (neutralizing) antibodies to block the cytopathic effects of Echovirus on the cells.</p> <p>Patient samples are serially diluted and incubated with the appropriate subtype of Echovirus. After addition of cells, plate(s) is incubated for 3 days followed by microscopic examination to determine the neutralizing titer.</p>