

**Summary:**

Western blot confirms the presence of *Cysticercus* antibodies detected in screening assays, which are sensitive but may be cross-reactive with other parasites.

**Cysticercus Serology Testing**  
***Reliable Screening and Confirmation for Cysticercosis Antibody***

**C**ysticercosis is caused by infection with the larval form (cysticercus) of the pork tapeworm *Taenia solium*. The disease is endemic in areas of Central and South America, Asia and Africa. It is most commonly acquired by ingestion of *T. solium* eggs in food or water contaminated by fecal material from persons harboring the adult tapeworm. The eggs are immediately infectious when ingested by humans or pigs, and hatch into larvae in the small intestine.

The larvae pass through the gut wall and are carried via the circulation to other tissues, where they encyst to form cysticerci. Clinical manifestations of cysticercosis most commonly result from the lodging of cysticerci in the central nervous tissue, where they can cause seizures, hydrocephalus and other neurological problems. Human ingestion of undercooked pork contaminated with cysticerci causes intestinal infection with the adult tapeworm (taeniasis); cysticercosis may develop in such individuals through an autoinfection cycle.

Magnetic resonance imaging (MRI) and computerized tomography (CT) are considered useful tools for cysticercosis diagnosis, but because these tests are expensive, serologic tests

are often appropriate for screening purposes. Focus Diagnostics offers a screening enzyme immunoassay (EIA) for cysticercosis, which measures IgG antibodies reactive with *T. solium* cyst antigen. Although this assay is very sensitive (95%), cross-reactions with antibodies from other parasitic infections, particularly echinococcosis, can lead to false positive results. True positive results in the Cysticercus IgG EIA can be distinguished from false positive results using a Western blot confirmatory procedure.

The Cysticercus IgG Western blot assay offered by Focus Diagnostics is based on the assay developed by Tsang et al. at the Centers for Disease Control and Prevention. Glycoproteins purified from cysts of *T. solium* by lectin chromatography are used as antigen in the assay.\* Currently, detection of antibody to any of 6 specific *T. solium* glycoproteins is interpreted as a positive assay result. Field studies support a sensitivity of 98% and a specificity of 100% for this assay. Both serum and cerebrospinal fluid (CSF) have been validated at Focus Diagnostics for use in the Cysticercus IgG Western blot assay.

\* This does not imply an endorsement of the assay by CDC.

For complete specimen information and CPT codes view our Reference Laboratory test listing on our Web site at [www.focusdx.com](http://www.focusdx.com)

Code #	Test Description
40352	Cysticercus IgG, Western Blot (serum)
60352	Cysticercus IgG, Western Blot (CSF)
45350	Cysticercus Antibody Reflex Panel (serum) Positive ELISA results will reflex to Western blot and add CPT 84182*
65350	Cysticercus Antibody Reflex Panel (CSF) Positive ELISA results will reflex to Western blot and add CPT 84182*
40350	Cysticercus Antibody ELISA (Serum)
60350	Cysticercus Antibody ELISA (CSF)

\* The CPT codes provided are based on AMA guidelines and are for informational purposes only. CPT coding is the sole responsibility of the billing party. Please direct any questions regarding coding to the payer being billed.

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To send specimens or obtain additional information, please contact our Client Services Department at 800-445-4032. For technical assistance, contact Focus Diagnostics' Scientific Director of Immunology.

# Cysticercus Serology Testing

## REFERENCES:

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2. Despommier DD. Tapeworm infection – the long and short of it. *New Engl J Med*. 1992; 327:727-728.
3. Tsang VCW, Wilson M. Taenia solium cysticercosis: an under-recognized but serious public health problem. *Parasitol Today*. 1995; 11:124-125.
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5. Diaz JF, et al. Immunodiagnosis of human cysticercosis (Taenia solium): a field comparison of an antibody enzyme-linked immunosorbent assay (ELISA) and an antigen-ELISA, and an enzyme-linked immunoelectrotransfer blot (ELTB) assay in Peru. *Am J Trop Med Hyg*. 1992; 46:610-615.
6. Tsang VCW, et al. An enzyme-linked immunoelectrotransfer blot assay and glycoprotein antigens for diagnosing human cysticercosis (Taenia solium). *J Infect Dis*. 1989; 159:50-59.
7. Wilson M, et al. Clinical evaluation of the cysticercosis enzyme-linked immunoelectrotransfer blot in patients with neurocysticercosis. *J Infect Dis*. 1991; 164:1007-1009.
8. Dorny P, et al. Immunodiagnostic tools for human and porcine cysticercosis. *Acta Trop*. 2003; 87:79-86.

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