Lab Dept: Serology

Test Name: TOXOCARA ANTIBODY, IGG, SERUM

General Information

Lab Order Codes: TOXA

Synonyms: Toxocara IgG; Toxocara serology; Toxocariasis

CPT Codes: 86682 – Antibody; helminth, not elsewhere specified

Test Includes: Toxocara IgG antibody reported as positive, equivocal or negative

Logistics

Test Indications: Serological diagnosis of toxocariasis.

Toxocara canis is a nonhuman ascarid nematode that undergoes limited development in humans. Only the larval form occurs in human tissues, especially the liver, eye and central nervous system. Infection is acquired by ingesting eggs which are excreted in the feces of dogs or cats infected with adult worms. The eggs hatch in the human intestine liberating larvae which enter the vascular system and migrate to various tissues including the visceral organs and the eye (visceral or ocular larva migrans).

Humans are not infected with adult *Toxocara* and thus, eggs are not shed in stools. Diagnosis is made on the basis of clinical signs and symptoms or the histopathologic identification of larvae in various tissues. Serologic testing can support the clinical and histopathologic findings. The enzyme-linked immunosorbent assay is a screen for antibodies against *Toxocara canis* in serum.

Diagnosis of *Toxocara* infections involves obtaining relevant clinical and exposure history and relies on antibody detection to *Toxocara* species. Eosinophilia may also be present, more commonly in visceral toxocariasis. Stool examination for ova and parasites is not useful since eggs are not excreted by humans, only by domestic animals. Currently, antibody testing is the only means of confirming a clinical diagnosis. The recommended serologic test for toxocariasis is an enzyme-linked immunosorbent assay using larval-stage antigens. However, a measurable titer does not distinguish between current and past *Toxocara* infection. Laboratory findings should be correlated with clinical history.

Lab Testing Sections: Serology - Sendouts

Referred to: Mayo Medical Laboratories (MML Test: TOXCG)

Phone Numbers:	MIN Lab: 612-813-6280 STP Lab: 651-220-6550
Test Availability:	Daily, 24 hours
Turnaround Time:	2 - 7 days, performed Tuesday and Thursday
Special Instructions:	N/A

Specimen

Specimen Type:	Blood
Container:	SST (Gold, marble or red) tube Alternate tube: Red NO GEL
Draw Volume:	1.5 mL (Minimum: 1.4 mL) blood
Processed Volume:	0.5 mL (Minimum: 0.4 mL) serum
Collection:	Routine venipuncture
Special Processing:	Lab Staff: Centrifuge specimen, aliquot into a screw-capped round bottom plastic vial. Store and ship at frozen temperatures. Forward promptly.
Patient Preparation:	None
Sample Rejection:	Specimens other than serum; warm specimens; mislabeled or unlabeled specimens

Interpretive

Reference Range: Negative

Interpretation

Positive:

IgG antibodies to Toxocara species detected, suggesting current or past infection. False-positive results may occur in patients with other helminth infections (eg, *Ascaris lumbricoides, Schistosoma* species*, Strongyloides*).

Equivocal:
Recommend follow-up testing in 10 to 14 days if clinically indicated.

Negative:

No antibodies to *Toxocara* species detected.

Critical Values: N/A

Limitations:

● A single negative result does not rule out infection. Assay sensitivity may be decreased depending on the site of infection, in cases of low parasitic burden, and timing of sample collection relative to exposure.
●False-negative results may occur in severely immunosuppressed patients.
●Positive results should be interpreted with patient's clinical status and exposure history.
●Positive results by this assay do not distinguish acute versus remote infection.
●False-positive results may occur in patients with other helminth infections.
●This assay uses synthetic antigens derived from *Toxocara canis.* Studies evaluating the sensitivity of this assay in patients infected with *T. cati* have not been performed.

Methodology: Enzyme – Linked Immunosorbent Assay (ELISA)

References: Mayo Medical Laboratories January 2023

Updates:

11/11/2008: Testing now referred to Focus Diagnostics from Mayo. Previously performed at Mayo. Total Ig now reported, previously IgG specific.
2/25/2013: Reference range update.
12/21/2017: Collection container update.
11/5/2018: Testing moved by MML to internal test, no longer forwarded to Focus. Updated draw volumes and storage info.
01/30/2023: Updated specimen volumes and reference lab test code.