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

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### 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

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### 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 (e.g., 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.
- 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.