

Toxoplasma gondii IgM GENLISA® ELISA

REF : KDT012

Ver 1.4

IVD

Enzyme Immunoassay for the qualitative determination of
Toxoplasma gondii IgM antibody in human serum and plasma

IVD	For In-vitro Diagnostic Use	REF	Catalog Number
	Store At	LOT	Batch Code
	Manufactured By		Biological Risk
	Expiry Date		Consult Operating Instructions

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REF KDT012

 96 tests

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Introduction:

Toxoplasmosis, caused by the protozoan *Toxoplasma gondii*, causes a retinal infection, affecting healthy and immunocompromised people in many countries. The parasite is transmitted through raw meat containing *T. gondii* cysts or water containing oocysts from feline feces. Both waterborne and food-borne outbreaks of the disease have been reported from countries with diverse cultural, social and ethnic backgrounds. The parasite can be transmitted vertically and if the woman acquires primary disease during pregnancy, it may be passed through the placenta to the fetus, resulting in congenital toxoplasmosis, which is a cause of mortality and malformation. Asymptomatic infants may develop abnormalities later in life. Although rare, the disease can also be transmitted through transplanted organs.

Intended Use:

The *Toxoplasma gondii* IgM GENLISA® ELISA is intended for the qualitative determination of *Toxoplasma gondii* IgM antibody in human serum and plasma.

Principle:

Toxoplasma gondii IgM GENLISA® ELISA method employs enzyme linked immunosorbent assay (ELISA) technique. Purified anti-human IgM monoclonal antibody are pre-coated onto microwells. Samples and Controls are pipetted into microwells and *Toxoplasma gondii* IgM antibody present in the sample is bound by the antibodies. And then enzyme labeled antigen conjugate is pipetted and incubated to form a complex. After washing microwells in order to remove any non-specific binding, the ready to use TMB substrate solution is added to microwells and color develops proportionally to the amount of *Toxoplasma gondii* IgM antibody present in sample. Color development is then stopped by addition of stop solution. Absorbance is measured at 450 nm.

Materials Provided:

1. Microtiter Coated Plate (8x12 wells) - 1 no
2. Negative Control - 1 ml
3. Positive Control - 1 ml
4. Enzyme Conjugate - 6.5 ml
5. (20X) Wash Buffer - 25 ml
6. Sample Diluent - 11 ml
7. TMB Substrate - 12 ml
8. Stop Solution - 12 ml
9. Instruction Manual.

Materials to be provided by the End-User:

1. Microtiter Plate Reader able to measure absorbance at 450 nm.
2. Adjustable pipettes and multichannel pipettor to measure volumes ranging from 25 ul to 1000 ul.
3. Deionized (DI) water.
4. Wash bottle or automated microplate washer.
5. Graph paper or software for data analysis.
6. Timer.
7. Absorbent Paper.

Handling/Storage:

1. Store main kit components at recommended storage temperature indicated on the component label.
2. Before using, bring all components to room temperature (18-25°C). Upon assay completion return all components to appropriate storage conditions.
3. The Substrate is light-sensitive and should be protected from direct sunlight or UV sources.

Health Hazard Warnings:

1. Reagents that contain preservatives may be harmful if ingested, inhaled or absorbed through the skin. Refer to the MSDS online for details.
2. To reduce the likelihood of blood-borne transmission of infectious agents, handle all serum and/or plasma in accordance with NCCLS regulations.



Specimen Collection and Handling:

Serum- Coagulate at room temperature for 10-20 minutes; centrifuge for 20-min at 2000-3000 rpm. Remove the supernatant. If precipitation appears, recentrifuge.

Plasma- Use EDTA or citrate plasma as an anticoagulant, mix for 10-20 minutes; centrifuge for 15-min at 2000-3000 rpm. Remove the supernatant carefully. If precipitation appears, recentrifuge.

Reagent Preparation:

1. Wash Buffer (1X) Dilution: To make Wash Buffer (1X), add 25 ml of Wash Buffer (20X) to 475 ml of DI water. This is the working solution.
2. Allow all components to reach RT (Room Temperature) prior to use in the assay.

Test Procedure:

1. All reagents should be allowed to reach room temperature before use.
2. Add **100 ul Sample Diluent** to the sample wells.
3. Add **10 ul Sample** to the respective sample wells. Mix gently.
4. Dispense **100 ul Negative Control** and **100 ul Positive Control** to the negative and positive wells respectively.
5. Shake gently for 30 seconds to mix well. Incubate at 37°C for 20 minutes.
6. Aspirate and wash plate 5 times with **(1X) Wash Buffer** and blot residual buffer by firmly tapping plate upside down on absorbent paper. Wipe of any liquid from the bottom outside of the microtiter wells as any residue can interfere in the reading step. All the washes should be performed similarly.
7. Add **50 ul of Enzyme Conjugate** to each well except the blank well.
8. Incubate at 37°C for 20 minutes.
9. Repeat the Aspiration / Wash Step.
10. Add **100 ul of TMB Substrate** into each well except blank well.
11. Incubate at 37°C for 10 minutes.
12. Add **100 ul of Stop Solution** into each well except blank well. Read result with an ELISA reader at 450 nm within 15 minutes of stopping the reaction.

Interpretation of Results:

Determine the Mean Absorbance for each set of duplicate Controls and Samples. Results are interpreted qualitatively by calculating a cut-off value for each sample on the basis of the cut-off determined. Read Absorbance at 450nm with an ELISA reader.

Cut-Off value (CO) = OD_{mean} of Negative Control x 2.1 (Calculated by 0.05 when the OD mean of Negative Control is < 0.05, calculated by actual value when mean negative control OD Value is > 0.05).

Positive Results: OD value $\geq$ CO

Specimens giving an absorbance equal to or greater than the Cut-Off value are considered initially reactive, which indicates that Toxo IgM has probably been detected using Toxo IgM ELISA. All initially reactive specimens should be retested in duplicates using Toxo IgM ELISA before the final assay results interpretation. Repeatedly reactive specimens may be considered positive for Toxo IgM with Toxo IgM ELISA.

Negative Results: OD value $<$ CO

Specimens giving absorbance less than the CO are negative for the assay, which indicates that no Toxo IgM has been detected with the Toxo IgM ELISA.

Cut Off Value	OD _{mean} of Negative Control x 2.1
Positive	$\geq$ CO
Negative	$<$ CO

Validity of the test:

The test is valid if the following conditions are met,

Mean Absorbance of Negative Control $\leq$ 0.1

Mean Absorbance of Positive Control $\geq$ 0.8

Limitations of Method:

Any clinical diagnosis should not be based on the results of in vitro diagnostic methods alone. Physicians are supposed to consider all clinical and laboratory findings possible to state a diagnosis.

Performance Characteristics:**Sensitivity:**

Limit of Detection: When detecting anti-Toxoplasma IgM antibody limits, laboratory quality control positive samples diluted till 1:8 with the Anti-Toxoplasma antibody IgM ELISA kit should be in the positive.

Specificity:

The recombinant antigen used in the kit is specific for Toxoplasma gondii.

Precision:

Intra-Assay: CV% $\leq$ 15%.

Inter-Assay: CV% $\leq$ 20%

Safety Precautions:

- **This kit is For In-vitro Use only.** Follow the working instructions carefully.
- The expiration dates stated on the kit are to be observed. The same relates to the stability stated for reagents
- Do not use or mix reagents from different lots.
- Do not use reagents from other manufacturers.
- Avoid time shift during pipetting of reagents.
- All reagents should be kept in the original shipping container.
- Some of the reagents contain small amount of sodium azide ($<$ 0.1 % w/w) as preservative. They must not be swallowed or allowed to come into contact with skin or mucosa.
- Source materials maybe derived from human body fluids or organs used in the preparation of this kit were tested and found negative for HBsAg and HIV as well as for HCV antibodies. However, no known test guarantees the absence of such viral agents. Therefore, handle all components and all patient samples as if potentially hazardous.
- Since the kit contains potentially hazardous materials, the following precautions should be observed
 - Do not smoke, eat or drink while handling kit material
 - Always use protective gloves
 - Never pipette material by mouth
 - Wipe up spills promptly, washing the affected surface thoroughly with a decontaminant.
- In any case GLP should be applied with all general and individual regulations to the use of this kit.



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Regulatory Status:

CE Marked	Europe
FDA registered	USA
CDSCO registered	India

SCHEMATIC ASSAY PROCEDURE

1	All reagents should be allowed to reach room temperature before use.
2	Add 100 ul Sample Diluent to the respective sample wells .
3	Add 10 ul Sample to the respective sample wells . Mix gently.
4	Dispense 100 ul Negative Control and 100 ul Positive Control to the negative and positive well respectively.
5	Shake gently for 30 seconds to mix well. Incubate at 37°C for 20 minutes .
6	Aspirate and wash plate 5 times with (1X) Wash Buffer and blot residual buffer by firmly tapping plate upside down on absorbent paper. Wipe of any liquid from the bottom outside of the microtiter wells as any residue can interfere in the reading step. All the washes should be performed similarly.
7	Add 50 ul of Conjugate to each well except the blank well.
8	Seal the plate and incubate at 37°C for 20 minutes .
9	Repeat the Aspiration / Wash Step.
10	Add 100 ul of TMB Substrate to all wells except blank well.
11	Incubate at 37°C for 10 minutes .
12	Add 100 ul of Stop Solution into each well except blank well. Read result with an ELISA reader at 450 nm within 15 minutes of stopping the reaction.

SYMBOLS KEY

	Microtiter Plate (8x12 wells)
	Positive Control
	Negative Control
	Enzyme Conjugate
	Sample Diluent
	(20X) Wash Buffer
	TMB Substrate
	Stop Solution
	Consult Instructions for Use
	Catalog Number
	Expiration Date
	Storage Temperature