



Toxoplasma gondii



Toxoplasma gondii is the contributing agent of a toxoplasmosis that occurs worldwide with high prevalence.

The development cycle of *Toxoplasma gondii* involves three phases:

The intestinal phase with production of sexual forms (gamogony) takes place in enterocytes of definitive hosts. Only domestic cats, and several other felid species of little epidemiological significance, can function as definitive hosts. Only extra-intestinal development is seen in intermediate hosts (pigs, sheep, and many other animal species) as well as in hosts (humans). Following the primary infection of a cat with *Toxoplasma* cysts in raw meat, asexual reproductive forms develop in the small intestine epithelium at first, with sexually differentiated stages and oocysts following later. The oocysts are shed in feces after prepatent period of three to nine days. When cats are infected with sporulated oocysts, the prepatent period is extended to 20-35 days. Oocyst shedding lasts from only a few days to a maximum of three weeks, but can be highly intense.

External phase: Oocysts excreted in cat feces sporulate at room temperature within two to four days, getting them infected. Kept moist, they remain infected for up to five years and are not killed by standard disinfectant agents.

Extraintestinal phase: This phase follows a peroral ingestion with oocysts or cysts and is observed in intermediate hosts (dogs, sheep, pigs, other vertebrates, birds).

Cases are differentiated as to time of acquisition, i.e., postnatal and prenatal infections (see tab.).

Disease	Symptoms	Mechanism of infection
Postnatal toxoplasma infection	<u>In general</u> unspecific symptoms like swelling of the lymph nodes, feeling of sickness, limb pain and fever. <u>rarely</u> hepatitis, myocarditis, pneumonia, encephalitis	Oral ingestion of oocysts or cysts with food.
Reactivation toxoplasmosis	<u>in immunosuppressed persons:</u> encephalitis, pneumonia, myocarditis, meningoencephalitis, eye damage, generalized lymphadenitis	
Prenatal toxoplasmosis	<u>Infection in the first trimester of pregnancy:</u> abortion <u>Infection in the second or third trimester of pregnancy:</u> abortion (10%), premature birth, damages of the fetus: pneumonia, myocarditis, nephritis, hepatitis, hydrocephalus, microcephaly, intracranic calcification, chronic chorioretinitis Children of women, who are infected just before birth, appear to be clinically normal at birth, but signs of brain and eye damage, as well as other symptoms, may manifest later in infancy and early childhood.	Prenatal infection of the fetus with toxoplasma occurs only in pregnant women with primary infection.

NovaLisa™ Toxoplasma gondii IgG/IgM μ -capture ELISA:

The NovaLisa™ Toxoplasma gondii IgG/IgM μ -capture ELISA is intended for the quantitative (IgG) and qualitative (IgM) determination of IgG-/IgM-class antibodies against Toxoplasma gondii in human serum or plasma (citrate).

Antigens:

IgG: Toxoplasma gondii (Lysate) antigens

IgM: P30

Specific performance characteristics:

	Intraassay			Interassay			Sensitivity %	Specificity %
	n	Mean	CV %	n	Mean	CV %		
IgG	6	0,978	5,7	4	0,752	7,1	100	96,8
	6	1,647	5,3	4	1,26	10,1		
	6	2,496	6,2	4	1,98	6,3		
IgM	20	0,429	5,6	12	13,25	8,8	95,2	> 95
	20	1,725	3,2	11	48,06	8,9		

Order information:

ELISA	Number of determinations	Product number
Toxoplasma gondii IgG	96	TOXG0460
Toxoplasma gondii IgM μ -capture	96	TOXM0460

NovaLisa™ Toxoplasma gondii IgG Avidity Test

The avidity determination is a diagnostic method which is used to differentiate a recent (acute) and a more distant (past) infection with Toxoplasma gondii in patient sera. Avidity is the binding force of the antibody (serum specimen) with the corresponding antigen.

Low avid IgG antibodies in the early stage of infection can be differentiated from high avid antibodies associated with a past infection.

The determination of IgG antibody avidity is an additional analysis to the classic serology in regard to the status of a Toxoplasma gondii infection.

The NovaLisa™ Toxoplasma gondii IgG Avidity Test is an additional reagent-kit that has to be used in combination with NovaLisa™ Toxoplasma gondii IgG ELISA.

Performance Characteristics:

The NovaLisa™ Toxoplasma gondii IgG Avidity Test has been evaluated for use in Toxoplasmosis with sera of acute and past infections. A total number of 69 defined patient samples were tested. These sera were supplied by the Institute of Parasitology, University Bonn.

		Defined samples		
		Acute infection	Past infection	Σ
NovaLisa™ Toxoplasma gondii IgG Avidity Test	Acute infection	22	2	24
	Past infection	3	42	45
	Σ	25	44	69

Agreement acute infection: 88%
Agreement past infection: 95.5%
Total agreement: 92.8%

Order information:

ELISA	Number of determinations	Product number
Toxoplasma gondii IgG Avidity Test	96	TOXGA460