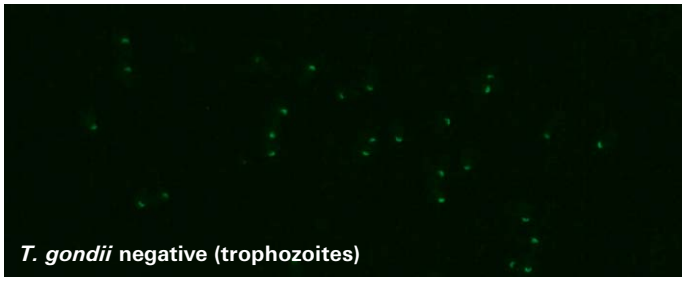
Anti-Toxoplasma gondii IIFT Cat (IgG/IgM)[1]


T. gondii positive (trophozoites)


T. gondii negative (trophozoites)

- **First assay for the detection of Toxoplasmosis in cats registered in Germany**
- **Incubation automatable**

Technical data

Antigen substrate	*Toxoplasma gondii* trophozoites
Sample dilution	Feline serum or plasma
	Qualitative evaluation: 1:100 (IgG and IgM)
	Semiquantitative evaluation: 1:10/100/1000 etc. (IgG and IgM)
Reagents	Ready for use, with the exception of the PBS-Tween buffer (for dilutions and washing steps)
Test procedure	30 min (sample) / 30 min (conjugate), room temperature
Microscopy	Objective 40x
	Light source: EUROIMMUN LED or mercury vapour lamp, 100 W
	Excitation filter: 488 nm, colour separator: 510 nm, blocking filter: 520 nm
Stability	All kit components are stable for at least 18 months from the date of manufacture
Test kit format	10 slides, each containing 5 or 10 test fields, kit includes all necessary reagents
Order no.	**FI 2410-1005 GF or MF**
	FI 2410-1010 GF or MF

Clinical significance

Toxoplasmosis is a worldwide zoonosis. It is caused by the sporozoon *Toxoplasma gondii*. The only final host animal is the domestic cat and other felidae, in which the parasite lives in intestinal cells and forms oocysts in a sexual development cycle. During asexual development, which can also take place in birds or other warm-blooded animals, the *Toxoplasma* parasites develop in brain, muscle, liver, spleen and in other organs, where they become encapsulated. Infection is usally peroral by ingestion of water or food contaminated with oocysts (through the faeces of infected cats) or from meat products (the raw flesh of infected animals contains cysts with viable trophozoites).

Cats become infected primarily by ingestion of infected rodents or other raw meat, less frequently through ingested oocysts or by intrauterine infection. *Toxoplasma* infections in cats proceed asymptomatically in most cases. But connatally infected kittens often develop severe clinical symptoms, from which they die. Proliferation of the parasite in the intestine of the host can lead to diarrhoea. The infection of extraintestinal tissue frequently affects lung, liver, CNS, pancreas or eyes. Infected cats present with lethargy, anorexia, fever, icterus, dyspnoea, ataxia or uveitis.

In addition to its clinical relevance for cats, feline toxoplasmosis is an important zoonosis. After primary infection or reactivation of a latent infection (e.g. by immunosuppression or reinfection), infected cats excrete oocysts in their faeces for 1 to 3 weeks. The parasites become infectious after 2 to 4 days in the environment and can perorally infect humans or warm-blooded animals. Postnatal infection is often symptom-free. However, in immunosuppressed individuals the parasites can cause severe infections, such as encephalitides in AIDS patients, even after reactivation. In pregnant women and warm-blooded animals *Toxoplasma* can be transmitted via the placenta to the foetus. Intrauterine infection can result in abortion, malformation and other damage to the newborn, depending on the time of infection, the infectious dose and the immune status of mother and foetus.

[1] **Authorized pursuant to § 17 c TierSG (German Epizootic Diseases Act), Reg. no: FLI-B 567.**

Application

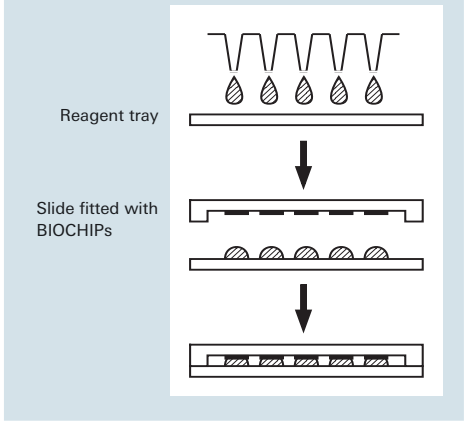
Owing to the variety of possible symptoms, the clincial picture is not very characteristic. *Toxoplasma* oocysts are rarely detected in faeces since their period of excretion is short. Morphologically, they resemble *Hammondia* and *Besnoitia* oocysts. The PCR methods which have been established during recent years are much more sensitive than flotation and microscopy and they allow differentiation of oocyst types in stool. The detection of specific antibodies in serum or plasma using IIFT, ELISA or agglutination assay is an important diagnostic tool. A positive IgG antibody result indicates an infection. Since *Toxoplasma* cysts, and therefore IgG antibodies, persist lifelong, an acute infection can only be diagnosed by the detection of IgM antibodies or by a fourfold increase in the IgG titer in a follow-up sample taken after 2 to 4 weeks. IgM antibodies are generally detectable 2 to 16 weeks after infection. Specific IgG, however, is exhibited 3 to 4 weeks after infection and probably persists lifelong. It should be taken into account that up to 20% of infected cats do not develop enough IgM antibodies to be detected and that cases of reactivated toxoplasmosis that did not exhibit specific IgM have been described.

Test principle and procedure

This test kit is designed exclusively for the in vitro determination of feline antibodies in cat serum or plasma. The determination can be performed qualitatively or quantitatively. BIOCHIPs coated with *Toxoplasma gondii* trophozoites are incubated with diluted samples. In case of positive reactions, specific antibodies of the classes IgG and IgM will bind to the antigens. In a second step, the attached antibodies are stained with fluorescein-labelled anti-cat antibodies and made visible using the fluorescence microscope.

Slides with EUROIMMUN BIOCHIPs are incubated using the TITERPLANE Technique, which enables multiple samples to be incubated next to each other and simultaneously under identical conditions. Incubation of the substrates with the positive and negative controls provided in each kit verifies correct performance of the test and aids evaluation.

Incubation with the TITERPLANE Technique



Reference range

Titer < 1 : 100 (IgG, IgM). In a control panel of healthy cats (origin of samples: Germany) the following *Toxoplasma gondii* antibody prevalences were determined: IgG: 35.7% (n = 42), IgM: 9.8% (n = 41).

Sensitivity and specificity

Test system	Ig class	Number and origin of samples	Specificity	Sensitivity
Anti-Toxoplasma gondii IIFT Cat	IgG	n = 56, Germany	97%	100%
	IgM	n = 36, Germany	100%	100%

Sensitivity and specificity data are only available in relation to another serological assay and may deviate from clinical sensitivity and specificity.

Literature

1. Elmore SA, et al. **Toxoplasma gondii: epidemiology, feline clinical aspects, and prevention.** Trends Parasitol 26(4):190-196 (2010).
2. Lappin MR. **Update on the Diagnosis and Management of Toxoplasma gondii Infection in Cats.** Top Companion Anim Med 25(3):136-141 (2010).
3. Salant H, et al. **A comparative analysis of coprologic diagnostic methods for detection of Toxoplama gondii in cats.** Am J Trop Med Hyg 8 82(5):865-870 (2010).