Interest of Toxoplasma ICT IgG-IgM as a diagnostic tool of Toxoplasma serology in cats.

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Introduction

Cats, definitive hosts of *Toxoplasma gondii*, have an important role in the live cycle of the parasite.
Serology can be used as a marker of environmental exposure in a feline population.
We studied the Toxoplasma ICT IgG-IgM ® (LDBIO Diagnostics) as a diagnostic test of toxoplasmosis in cats.

Material and Methods

Retrospective study on *F. catus* sera(N=139) previously tested for toxoplasmosis with 1 or 2 techniques[1]: Toxoscreen ® (BioMérieux) + Toxo HAI ® (Fumouze) (N=88) ; Toxoscreen ® alone (N=51).

Use of Toxoplasma ICT IgG-IgM ® according to instruction for use: 15µl serum, reading between 20 and 30 minutes (Fig 1).

Serum classification:
- If all techniques are in agreement, the result was kept.
- Discrepancies: confirmation by WB Toxo II LDBIO with A/G conjugate (Fig 2). Results of WB Toxo II was kept as serological diagnosis for all discrepancies.

Fig 1:
Toxoplasma ICT in cats
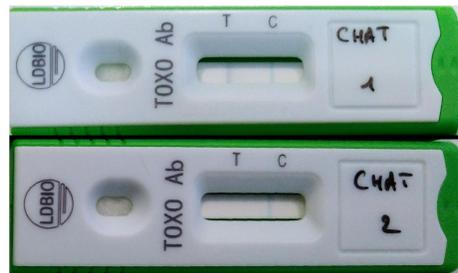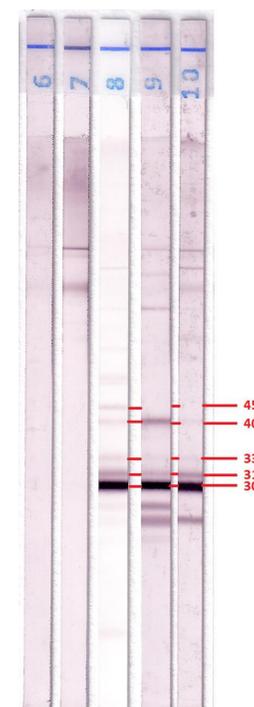*Positive result(Top)*
Negative result (Bottom)

Fig 2:
WB LDBIO Toxo II in cats
Negative results (strips 6-7)
Positives results (strips 9-10)
Human positive control (strip 8)

Results

	ICT		HAI		Toxoscreen® (1/40e)	
	Positive	Negative	Positive	Negative	Positive	Negative
Positive serology (N=33)	30	3	12	7	31	2
Negative serology (N=101)	0	101	0	65	5	96
Performances	Sensibility: 90,9% Spécificity: 100%		Sensibility: 63,1% Spécificity: 100%		Sensibility: 93,9% Spécificity: 95%	

Notes:
14 (10,1%) discrepant samples confirmed in WB Toxo II (10 negatives, 4 positives).
2 (1,4%) discrepant sample had insufficient volume for WB and were excluded from the study
3 (2,2%) invalid samples in ICT (no C band) were excluded from the study

Conclusion

- Fast test, easy to use and interpret with high performances: LDBIO Toxopasma ICT IgG-IGM ® shows in this study its aptitude to diagnose veterinary toxoplasmosis, here in cats;

- Note: the use of ICT on whole blot has been validated in humans[2]. It remains to confirm/evaluate it in verterinary use. It allow the use of ICT as a real field test, without invasive procedures.

1 Fernandes *et al.*, Comparison of indirect and modified agglutination tests for detection of antibodies to *Toxoplasma gondii* in domestic cats, Journal of Veterinary Diagnostic Investigation 2019
2 El mansouri *et al.*, High performance of a novel point-of-care blood test for Toxoplasma infection in women from diverse regions of Morocco, Emerging Microbes&Infections 2021