EXPERTISE AND SERVICE PROVISION
QUALITY OF LABORATORIES

CLINICAL BIOLOGY COMMISSION
COMMITEE OF EXPERTS

EXTERNAL QUALITY ASSESSMENT
IN CLINICAL BIOLOGY

# DEFINITIVE GLOBAL REPORT

# Molecular Microbiology – Toxoplasma gondii

# SURVEY 2021/1

**Sciensano/Molecular Microbiology Toxoplasma gondii/2-E**

Expertise and service provision
Quality of laboratories
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**Authorization to release the report:** By Bernard China, scheme coordinator, on 17/02/2022.

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Bernard China

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# TABLE OF CONTENTS

## The samples

In 2021, the *T. gondii* samples were produced by Sciensano. A panel consisted of 5 samples, 4 positive and 1 negative.

| Sample ID | Matrix | Content | Status | Ct values Sciensano |
|---|---|---|---|---|
| **TG2021-1** | CSF | *T. gondii* | Positive | 24.88 |
| **TG2021-2** | CSF | *T. gondii*[1] | Positive | 27.70 |
| **TG2021-3** | CSF | *T. gondii*[2] | Positive | 30.12 |
| **TG2021-4** | CSF | *T. gondii*[3] | Positive | 27.04 |
| **TG2021-5** | CSF | No *T. gondii* | Negative | No Ct |

CSF: cerebrospinal fluid, NRC : National Reference Center
1= dilution 1/8 of TG2021-1; 2= dilution 1/8 of TG2021-2; 3= dilution 1/5 of TG2021-1

### Homogeneity

The samples were tested before the sending of the survey by the former National Reference Center (LMM, Sciensano). The samples were considered as homogeneous.

### Stability

The stability was evaluated by comparing the results before and during the survey. As the qualitative results were the same, the samples were considered as stable.

## Results

13 laboratories were registered but only 11 (84.6%) encoded results.

### Results per sample

Table 1. Results per sample.

| Sample ID | Expected results | Encoded results |
|---|---|---|
| **TG2021-1** | Positive | 11 Positive results |
| **TG2021-2** | Positive | 11 Positive results |
| **TG2021-2** | Positive | 11 Positive results |
| **TG2021-3** | Positive | 11 Positive results |
| **TG2021-4** | Positive | 11 Positive results |
| **TG2021-5** | Negative | 11 Negative results |

100% of the encoded results were correct.

### Used method

100% of the participants used lab-developed RT-qPCR validated methods.

Table 2. Used methods.

| Reference | N |
|---|---|
| Delhommeau F., Forestier F. (2002) Quantification of *Toxoplasma gondii* in Amniotic Fluid by Rapid Cycle Real-Time PCR. In: Reischl U., Wittwer C., Cockerill F. (eds) Rapid Cycle Real-Time PCR — Methods and Applications. Springer, Berlin, Heidelberg. Pp133-138. | 1 |
| Reischl U, Bretagne S, Krüger D, Ernault P, Costa JM. Comparison of two DNA targets for the diagnosis of Toxoplasmosis by real-time PCR using fluorescence resonance energy transfer hybridization probes. BMC Infect Dis. 2003 May 2;3:7. | 3 |
| Kupferschmidt O, Krüger D, Held TK, Ellerbrok H, Siegert W, Janitschke K. Quantitative detection of Toxoplasma gondii DNA in human body fluids by TaqMan polymerase chain reaction. Clin Microbiol Infect. 2001 Mar;7(3):120-4. | 1 |
| Not specified | 2 |
| Kasper DC, Sadeghi K, Prusa AR, Reischer GH, Kratochwill K, Förster-Waldl E, Gerstl N, Hayde M, Pollak A, Herkner KR. Quantitative real-time polymerase chain reaction for the accurate detection of Toxoplasma gondii in amniotic fluid. Diagn Microbiol Infect Dis. 2009 Jan;63(1):10-5.<br>Lin MH, Chen TC, Kuo TT, et al. Real-time PCR for quantitative detection of Toxoplasma gondii. J Clin Microbiol. 2000;38(11):4121–5 | 1 |
| Menotti J, Garin YJ, Thulliez P, Sérugue MC, Stanislawiak J, Ribaud P, de Castro N, Houzé S, Derouin F. Evaluation of a new 5'-nuclease real-time PCR assay targeting the Toxoplasma gondii AF146527 genomic repeat. Clin Microbiol Infect. 2010 Apr;16(4):363-8.<br>Wahab T, Edvinsson B, Palm D, Lindh J. Comparison of the AF146527 and B1 repeated elements, two real-time PCR targets used for detection of Toxoplasma gondii. J Clin Microbiol. 2010 Feb;48(2):591-2. | 1 |
| Target gene: AF146527 | 1 |
| Lin MH, Chen TC, Kuo TT, et al. Real-time PCR for quantitative detection of Toxoplasma gondii. J Clin Microbiol. 2000;38(11):4121–5 | 1 |

## Conclusion

All the participants encoded 100% of correct results independently of the used method.

**END**