PROFICIENCY TESTING FOR THE DETECTION OF *ANTI-TOXOPLASMA* IgG IN SWINE SERUM SAMPLES

Twentieth annual EURLP workshop, Rome 28-29 October 2025

Alessandra Ludovisi

Aims of the proficiency testing (PT)

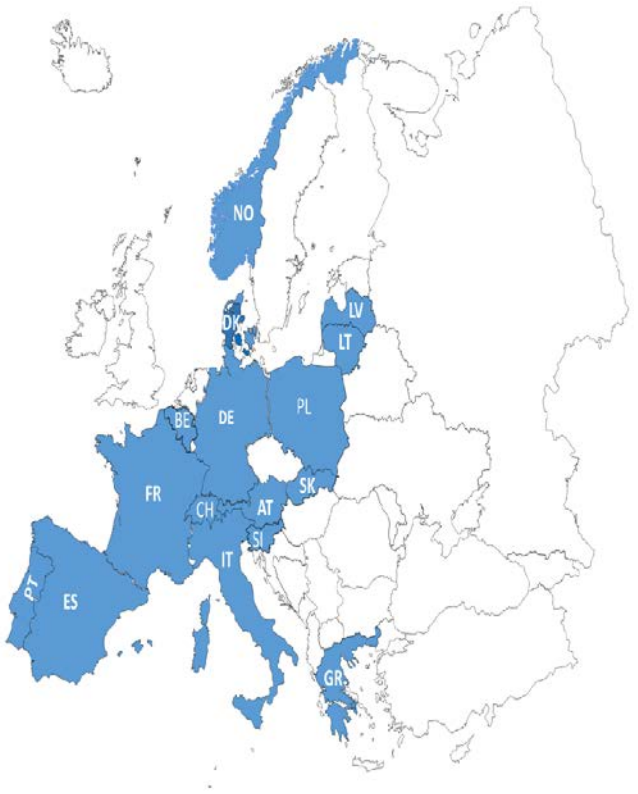
To evaluate the **competence** of laboratories

To assess the **performance** of commercial kits

for the detection of **anti-*Toxoplasma* IgG** in swine serum samples

Participating laboratories:

Countries	
1 Austria	9 Lithuania
2 Belgium	10 Norway
3 Denmark	11 Poland
4 France	12 Portugal
5 Germany	13 Slovakia
6 Greece	14 Slovenia
7 Italy	15 Spain
8 Latvia	16 Switzerland



Materials and methods 1/3

Detection of anti-*Toxoplasma* IgG can be performed using **any serological test**. Each laboratory should adopt the assay(s) **commonly employed in its routine procedures**.

The test material forwarded to each laboratory consisted of a panel of **3 serum samples** collected from *T. gondii* free or *T.gondii* experimentally infected animals.

These serum samples were **individually tested** for anti-*Toxoplasma* IgG by ID Screen Toxoplasmosis Indirect Multi-species.

IDScreen test interpretation

S/P value range	Expected result
S/P ≤ 40%	Negative
40% < S/P < 50%	Doubtful
S/P ≥ 50%	Positive

Serum samples tested

Serum sample Code	Expected result	S/P
s.1	Positive	100%
s.2	Positive	75%
s.3	Negative	6,4%

Materials and methods 2/3

Serum samples were:

Distributed in 100 µL aliquots

Preserved with 1% merthiolate solution

Labelled with a code

Each laboratory received a **link** available to NRLs on the EURLP website to the **online survey** platform Microsoft Forms, through which **PT results** and other details could be submitted

Materials and methods 3/3

Test used by the partecipants:

IFA

In house IFA

PARTECIPANTS

E, Q (Add. Method)

ELISA

Id VetScreen® Toxoplasmosis Indirect Multi-species

INDICAL's pigtype *Toxoplasma* Ab

PARTECIPANTS

A, B,

C (Add. Method)

D, G, H, I, J,

L, M, N, O, P,Q, R

C

WESTERN BLOT

In house Western Blot

PARTECIPANT

C (Add. Method)

Criteria for the final PT evaluation

Result evaluation

Qualitative:
The participating laboratory had to indicate the positivity or negativity of each sample

The result of the analysis of each serum sample was reported as:
correctly classified or **incorrectly classified**

Final evaluation

"**Positive**" if all samples are **correctly classified**

"**Negative**" in all the other cases

Results

Sample Code	Expec. results	Lab. code															
		A	B	C	D	E	F	G	H	I	J	L	M	N	O	P	Q	R
1	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
2	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

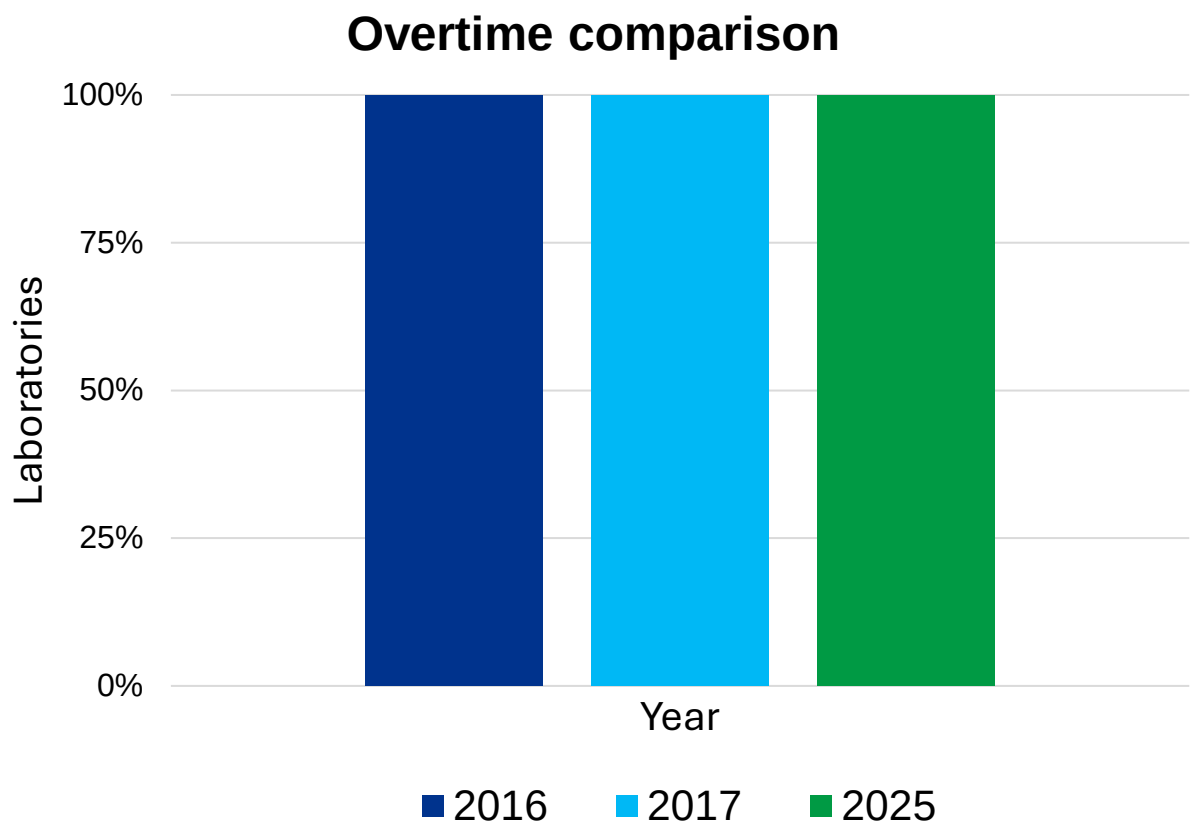
16/16 NRLs correctly classified as positive or negative all serum samples

PT evaluation

Laboratory code	N° of samples correctly classified	N° of samples NOT correctly classified	Result
A	3/3	0/3	Positive
B	3/3	0/3	Positive
C	3/3	0/3	Positive
D	3/3	0/3	Positive
E	3/3	0/3	Positive
G	3/3	0/3	Positive
H	3/3	0/3	Positive
I	3/3	0/3	Positive
J	3/3	0/3	Positive
L	3/3	0/3	Positive
M	3/3	0/3	Positive
N	3/3	0/3	Positive
O	3/3	0/3	Positive
P	3/3	0/3	Positive
Q	3/3	0/3	Positive
R	3/3	0/3	Positive

Conclusions

All laboratories (100%) **correctly classified** all serum samples throughout all the years it was organized

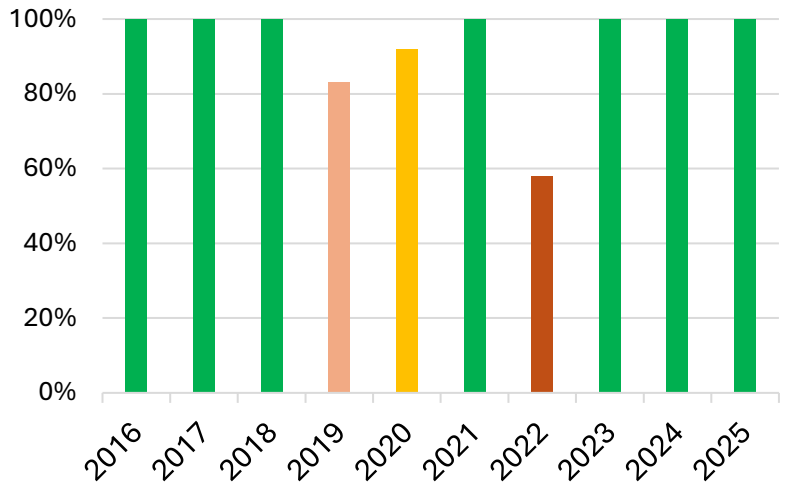


Considerations for future planning

In the last 10 years we have been organizing the ***Toxoplasma*** **PT in different animal species**

During this period, **some laboratories failed to correctly classify** certain serum samples

In recent years, **consistent laboratories results** confirm the **assays reliability** and **staff expertise**



Therefore, we are considering **not repeating the Toxoplasma PT next year**, unless there is a specific request from some countries to participate

Acknowledgments

- **NRL Toxoplasmosis Friedrich-Loeffler-Institut,**
- Dr. Gereon Schares

For kindly supplying the sera provided for this PT

AND

- ***European Union Reference Laboratory for Parasites***
- Dr. Francesco Celani
- Dr. Antonio Di Grazia
- Dr. Irene Tartarelli

For their assistance in organizing the Toxoplasma PT

Thank you for your attention!

Proficiency Testing for the detection of anti-*Trichinella* IgG in swine serum samples

Twentieth annual EURLP workshop,
Rome 28-29 October 2025

Alessandra Ludovisi

Introduction 1/2

Animals

The International Commission on Trichinellosis (ICT) does not recommend using **serological tests** to inspect individual animal carcasses at slaughter for food safety purposes

Regulation (EU) 2015/1375 requires the use of **direct detection methods**, such as artificial digestion, for *Trichinella* testing in susceptible animals intended for human consumption

This is because animals may carry **infectious muscle larvae** before antibodies become detectable

Man

The ICT recommends the detection of **specific antibodies**, in particular IgG, to confirm a suspected clinical diagnosis of **trichinellosis.**

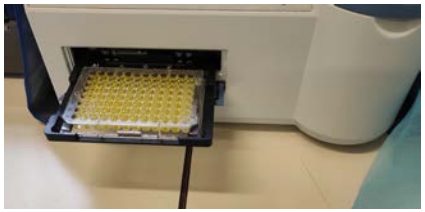
Introduction 2/2

Antibody detection is both **suitable and appropriate** for surveillance of *Trichinella sp.* infection in domestic animals and wildlife, and its use can contribute to the knowledge on *Trichinella* **circulation**

Serological methods included in epidemiological studies

have to be validated

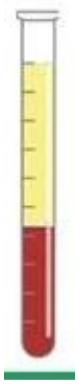
Aims of the proficiency testing (PT)



To evaluate the competence of laboratories

To assess the performance of commercial kits

in detecting **anti-*Trichinella* IgG** in swine serum samples



Participanting laboratories

Germany 

German Federal Institute for Risk Assessment (BfR)

Serbia 

University of Belgrade, Institute for the Application of Nuclear Energy - INEP

Slovenia 

University of Ljubljana, Veterinary Faculty, National Veterinary Institute, NRL for parasites

Spagna 

Central Laboratory of Animal Health (LCSA)

Laboratories M and T erroneously made the request to participate. They received the serum panel, but it was not tested.

Material and methods 1/3

Any serological test based on the detection of anti-*Trichinella* IgG could be used. Each laboratory should choose the test/s **routinely used.**

The test material forwarded to each laboratory consisted of a panel of **5 serum samples**, which are reference sera from the EURLP:

From *T. spiralis* experimentally infected animals:

- **Sample 1** (SCp+2)**,**
- **Sample 2** (SCp+4),
- **Sample 3** (SCp+114,WOAH/OIE reference serum)

From *Trichinella* free animals:

- **Sample 4** (SCp-192),
- **Sample 5** (SCp-214).

These serum samples were individually analyzed at the **EURLP** for detecting anti-*Trichinella* IgG using validated **serological methods**:

- **Indirect ELISA**
- **Western Blot**

Materials and methods 2/3

Serum sample code	Optical density O.D.	Expected result
Sample 1	1,12	Positive
Sample 2	1,004	Positive
Sample 3	0,582	Positive
Sample 4	0,226	Negative
Sample 5	0,176	Negative

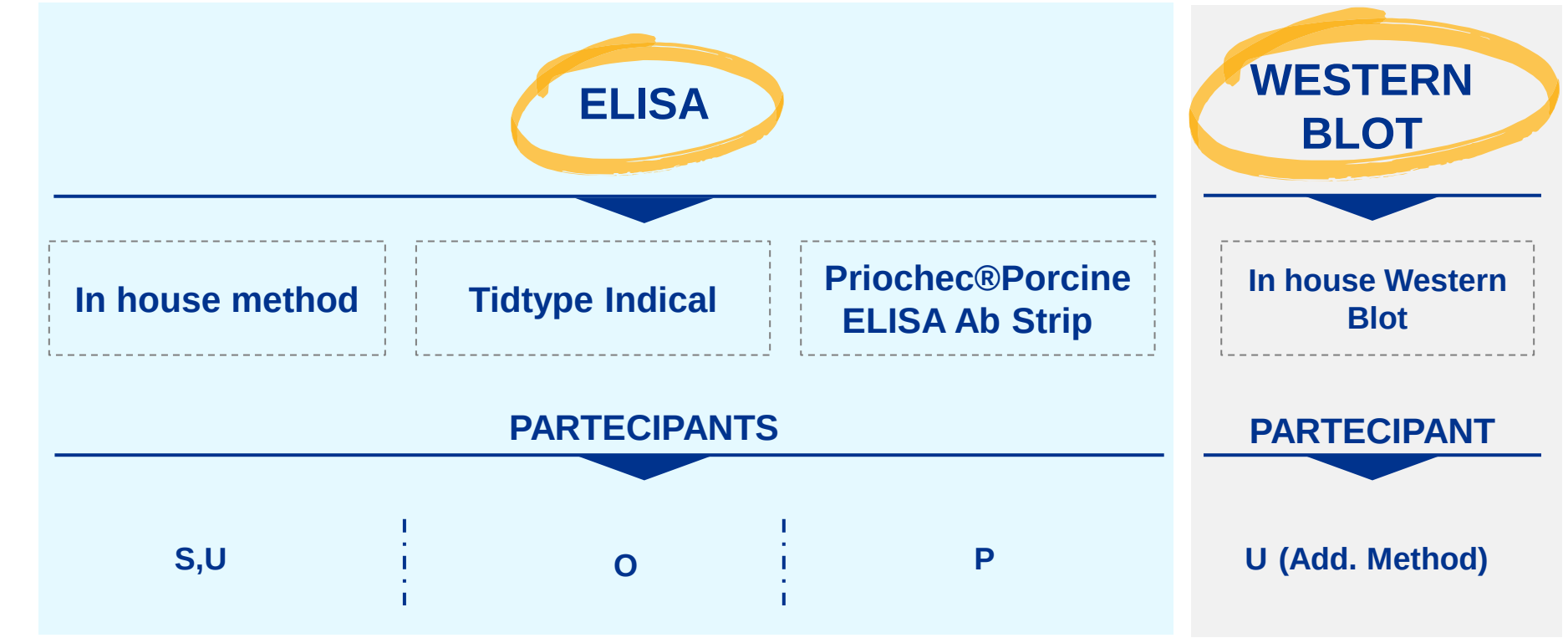
Serum samples were:

Distributed in 100 µL aliquots → **Preserved** with 1% merthiolate solution → **Labelled** with a code

Each laboratory received a **link** available to NRLs on the EURLP website to the **online survey** platform Microsoft Forms, through which **PT results** and other details could be submitted

Materials and methods 3/3

Tests used by the partecipants:



Results

Sample Code	Expect. results	Labs code					
		O	P	S	U	M*	T*
1	+	+	+	+	+	N.A.	N.A.
2	+	+	+	+	+	N.A.	N.A.
3	+	+	+	+	+	N.A.	N.A.
4	-	-	-	-	-	N.A.	N.A.
5	-	-	-	-	-	N.A.	N.A.

* Labs M and T erroneously submitted the request to participate in the PT.
They received the serum panel, but it was not tested.

4/4 NRLs correctly classified as positive all serum samples

Criteria for the final PT evaluation

Result evaluation

Qualitative:
The participating laboratory had to indicate the positivity or negativity of each sample

The result of the analysis of each serum sample was reported as:
correctly classified or **incorrectly classified**

Final evaluation

"**Positive**" if all samples are **correctly classified**

"**Negative**" in all the other cases

PT evaluation

Sample Code	N° of samples correctly classified	N° of samples NOT correctly classified	Final evaluation
M*	N.A.	N.A.	N.A.
O	5/5	0/5	Positive
P	5/5	0/5	Positive
S	5/5	0/5	Positive
T*	N.A.	N.A.	N.A.
U	5/5	0/5	Positive

*Labs M and T **erroneously** submitted the request to participate in the PT. They received the serum panel, but it was not tested

Conclusions

All laboratories correctly classified all serum samples

The diagnostic kits used both in-house and commercial were immunoenzymatic assays

The complete consistency of the results across laboratories highlights both the high reliability of the assays and the technical competence of the testing personnel

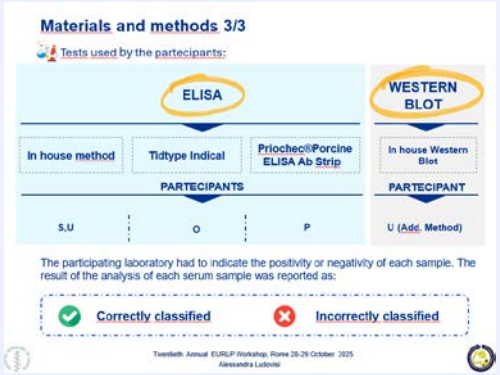
No discrepancies or borderline results were observed during the evaluation

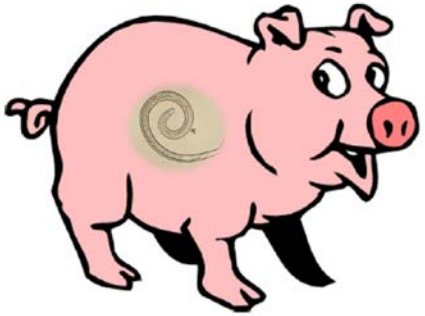
Acknowledgments

Dr. Francesco Celani
Dr. Antonio Di Grazia
Dr. Irene Tartarelli

European Union Reference Laboratory for Parasites

For their assistance
in organizing the Toxoplasma PT





Thanks for your attention!