European Union Reference Laboratory for Parasites
Istituto Superiore di Sanità

Proficiency Testing for the detection of anti-*Toxoplasma* IgG in ovine serum samples

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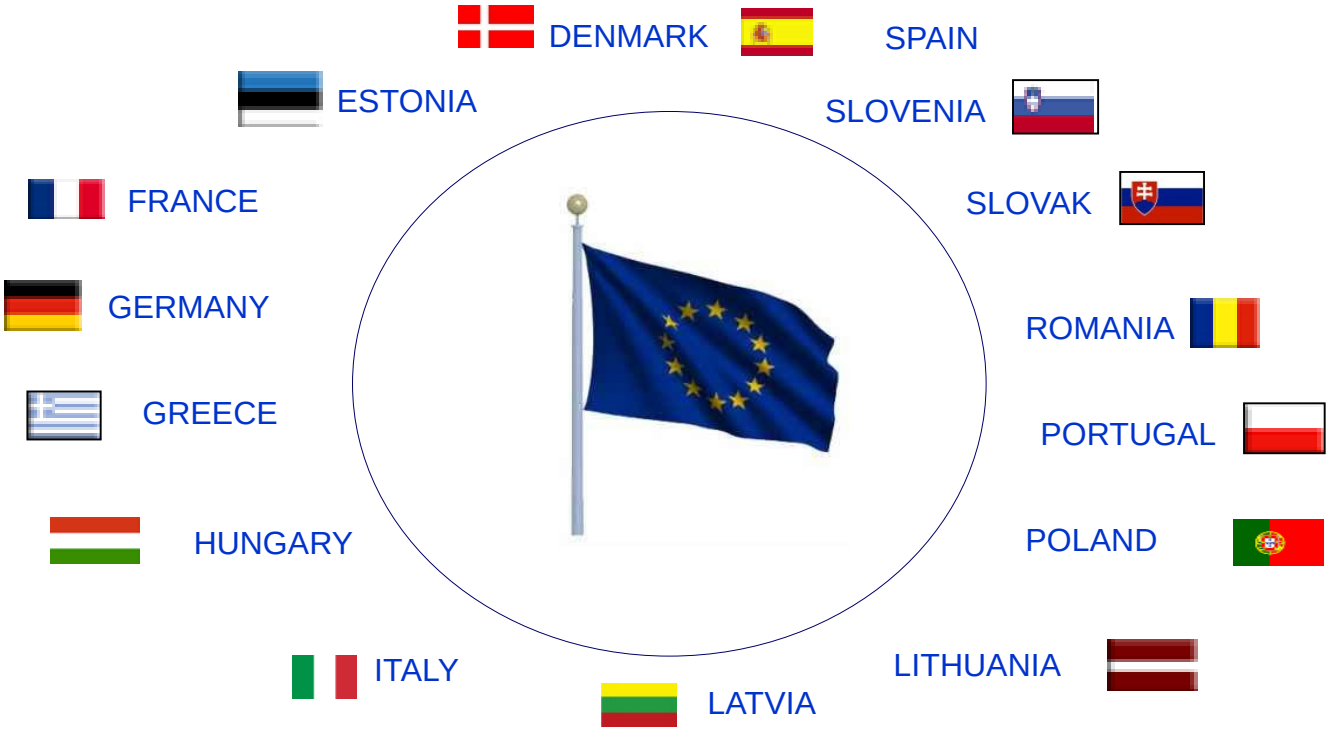
Aim

Detection of anti-*Toxoplasma* IgG in ovine serum samples

18 Laboratories have been registered



Serum samples panel:

Serum samples were collected from both, *Toxoplasma gondii* free and naturally infected ovine

All serum samples were individually tested for anti-*Toxoplasma* IgG by a commercial kit (ID Screen® Toxoplasmosis Indirect Multi-species)

Positive and negative serum samples were aliquoted
and preserved with 1% merthiolate solution, and stored at +4 °C

Samples

A panel of 6 serum samples has been forwarded to each participant laboratory

Sample code	ID.vet Optical density	ID.vet results S/P≤ 40% Negative 40%<S/P<50% Borderline S/P≥50% Positive	Expected results
1	0,1	<40%	Negative
2	1,4	>50%	Positive
3	0,9	>50%	Positive
4	0,3	<40%	Negative
5	1,8	>50%	Positive
6	1,4	>50%	Positive

Methods

To detect anti-*Toxoplasma* IgG in serum samples, any serological test based on the detection of anti-*Toxoplasma* IgG could be used. Each laboratory should choose the test/s routinely used

18 Labs participated → **17 Labs used one method: one of which (T9) performed one method two times**
1 Lab (T5) used two methods

Tests used by the participants:

ID VET SCREEN® TOXOPLASMOSIS INDIRECT MULTI-SPECIES
used by 13 laboratories (72.2%):
Lab.code:T1,T2,T3,T4,T7,T9,T10,T11,T12,T14,T15,T17,T18

QUIAGEN® ELISA PIGTYPE TOXOPLASMA TEST Ab
used by 2 laboratories (11.1%):
Lab.code:T5,T16

TOXOREAGENT MAST DIAGNOSTICA GmbH
used by 1 laboratory (5.5%):
Lab.code:T13

Other tests used by the participants:

“in house” IFAT

Lab.code: T6

CHEKIT EIA

Lab. Code:T8

Criteria for the results evaluation:

The evaluation of PT results is expressed as

"**correct**" (right identification of positives and negatives) or

"**incorrect**" (wrong identification of at least one positive or one negative)

Results

NRLs that correctly classified (as positive or negative) all serum samples

Sample code	Expected results	LAB codes													
		T1	T2	T3	T4	T5	T6	T7	T8	T9	T11	T12	T15	T16	T17	T18
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
3	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
6	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

Results

NRLs that incorrectly classified one or three serum samples

Sample code	Optical density	Expected results	Lab. T10	Lab. T13	Lab. T14
1	0,1	-	-	-	-
2	1,4	+	+	+	+
3	0,9	+	-	+	+
4	0,3	-	+	+	+/-
5	1,8	+	+	+	+
6	1,4	+	-	+	+

Criteria for the final PT evaluation

- "**positive**" if the results of all samples are correct
- "**negative**" if at least one result is incorrect

PT evaluation-1

Laboratory code	N° of samples correctly identified	N° of samples NOT correctly identified	Final evaluation
T1	6	-	Positive
T2	6	-	Positive
T3	6	-	Positive
T4	6	-	Positive
T5	6	-	Positive
T6	6	-	Positive
T7	6	-	Positive
T8	6	-	Positive
T9	6	-	Positive
T11	6	-	Positive
T12	6	-	Positive
T15	6	-	Positive
T16	6	-	Positive
T17	6	-	Positive
T18	6	-	Positive

PT evaluation-2

Laboratory code	N° of samples correctly identified	N° of samples NOT correctly identified	Final evaluation
T10	4	3	Negative
T13	5	1	Negative
T14	5	1	Negative

Which tests/labs yielded false results?

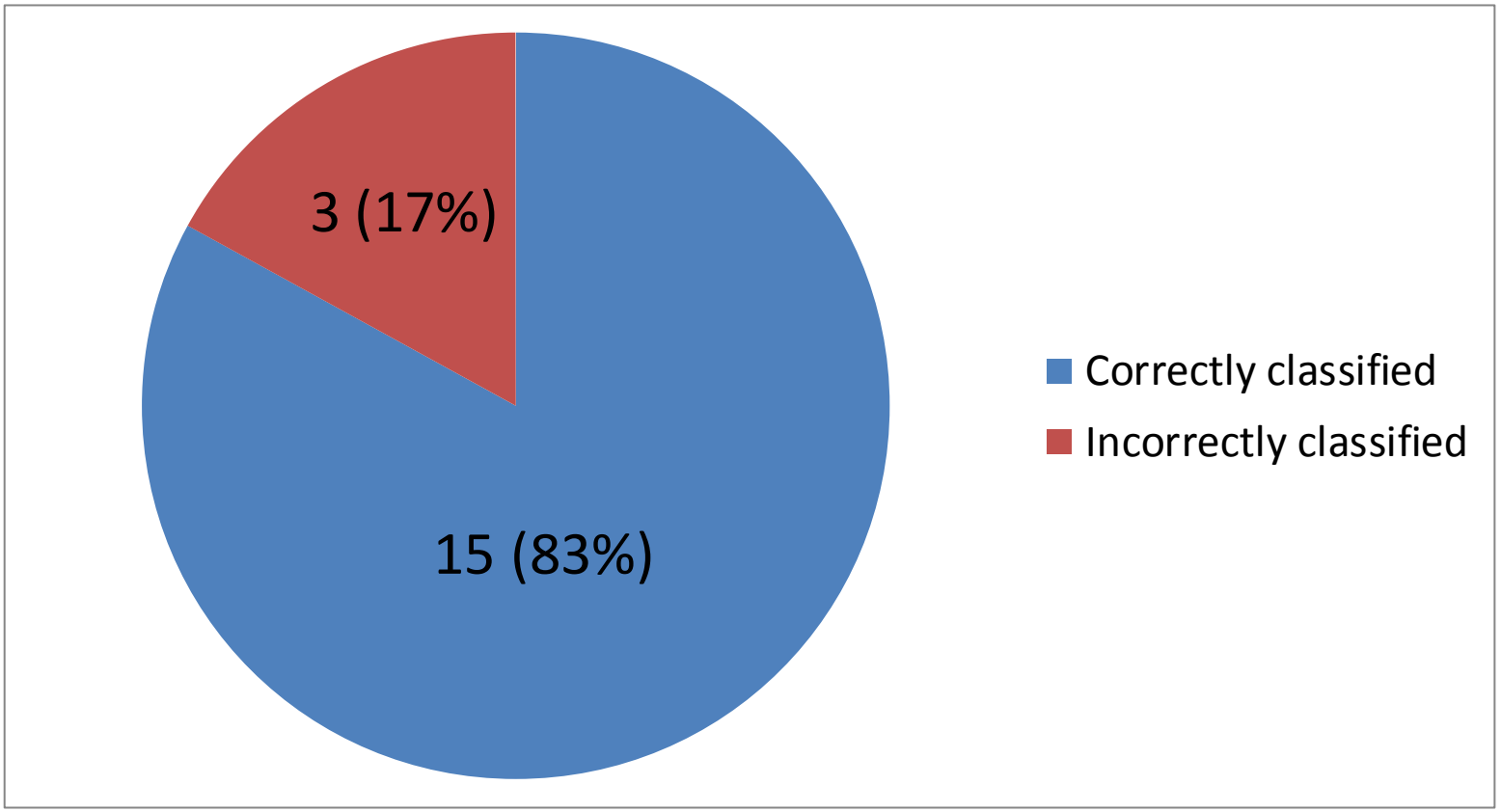
- **ID VET SCREEN® TOXOPLASMOSIS INDIRECT MULTI-SPECIES (used by Labs T10 and T14)**
  expiration date:07/2019 and 07/2020 respectively

- **TOXIREAGENT MAST DIAGNOSTICA GmbH, Germany, ref. RST7001, Lot KTOXR185101 (used by Lab.T13)**
  expiration date:03/2020

Possible causes of error

- Altered or contaminated kit components
- Not uniform distribution of the antigen in the plate
- Not appropriate resuspension of all Kit components before use
- Not proper equilibration of Kit components at RT
- Human error

Global Results (NRLs) of the PT for the detection of anti-*Toxoplasma* IgG in ovine serum samples



CONCLUSIONS 1

1. The more frequently used tests are immunoenzimatic assays, showing among them 87.5% level of agreement

2. Commercial and in-house tests have provided consistent results (83.3%)

3. Then, the final evaluation of this PT is “positive”

For the future Toxoplasma PT we'll think about:

1. Organize a new serological PT on Toxoplasma in which each participant could choose the test/s routinely used

2. Use one particular assay for all participants

3. Program a ring trial, in which each participating laboratory should use a number of assays previously established

Thank you for your attention!!