

OIE Reference Laboratory Reports Activities

Activities in 2021

This report has been submitted : 2022-01-11 14:06:20

Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	Trichinellosis
Address of laboratory:	Viale Regina Elena 299 00161 Roma ITALY
Tel.:	+390-6 49.90.2078
Fax:	+390-6 4990 3561
E-mail address:	mariaangeles.gomezmorales@iss.it
Website:	https://www.iss.it/
Name (including Title) of Head of Laboratory (Responsible Official):	Professor, Dr. Anna Teresa Palamara Research Director
Name (including Title and Position) of OIE Reference Expert:	Dr. Maria de los Angeles Gomez Morales, PhD Senior Researcher
Which of the following defines your laboratory? Check all that apply:	Governmental

ToR 1: To use, promote and disseminate diagnostic methods validated according to OIE Standards

1. Did your laboratory perform diagnostic tests for the specified disease/topic for purposes such as disease diagnosis, screening of animals for export, surveillance, etc.? (Not for quality control, proficiency testing or staff training)

Yes

Diagnostic Test	Indicated in OIE Manual (Yes/No)	Total number of test performed last year	
		Nationally	Internationally
Indirect diagnostic tests		Nationally	Internationally
Indirect ELISA for swine	Yes	83	9
Indirect ELISA for humans	No	9	36
Western blot for swine	No	116	0
Western blot for human	No	0	1
Western blot for canids	No	0	10
Direct diagnostic tests		Nationally	Internationally
Artificial muscle digestion	Yes	20	0
Multiplex PCR	No	94	460

ToR 2: To develop reference material in accordance with OIE requirements, and implement and promote the application of OIE Standards. To store and distribute to national laboratories biological reference products and any other reagents used in the diagnosis and control of the designated pathogens or disease.

2. Did your laboratory produce or supply imported standard reference reagents officially recognised by the OIE?

Yes

NOTE: Currently, there are 22 laboratories that produce Standard Reference Reagents officially recognised by the OIE for 19 diseases/pathogens. Please click the following link to the list of OIE-approved International Standard Sera:

<http://www.oie.int/en/our-scientific-expertise/veterinary-products/reference-reagents/>. If the reagent is not listed on this page, it is NOT considered OIE-approved. The next two questions allow you to indicate non-OIE-approved diagnostic reagents.

OIE-approved SRR producing laboratory - Select your lab from list:

Disease	Test	Available from
Trichinellosis	Enzyme-linked immunosorbent assay	Dr Maria Angeles Gomez Morales Istituto Superiore di Sanita Laboratorio di Parasitologia Viale Regina Elena 299, 00161 Roma, Italy Tel: +390-6 49.90.23.04 Email: mariaangeles.gomezmorales@iss.it

Type of reagent available	Related diagnostic test	Produced/ Supply imported	Amount supplied nationally (ml, mg)	Amount supplied internationally (ml, mg)	Name of recipient OIE Member Countries
Trichinella positive reference pig sera	ELISA Western blot	Produced	<input checked="" type="radio"/> <10mL <input type="radio"/> 10-100mL <input type="radio"/> 100-500mL <input type="radio"/> >500mL	<input checked="" type="radio"/> <10mL <input type="radio"/> 10-100mL <input type="radio"/> 100-500mL <input type="radio"/> >500mL	

3. Did your laboratory supply standard reference reagents (non OIE-approved) and/or other diagnostic reagents to OIE Member Countries?

Yes

Type of reagent available	Related diagnostic test	Produced/ provide	Amount supplied nationally (ml, mg)	Amount supplied internationally (ml, mg)	No. of recipient OIE Member Countries	Region of recipients
Mouse carcass infected with <i>T. spiralis</i>	Artificial digestion	Produced	7 units	14 units	16	<input type="checkbox"/> Africa <input checked="" type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
<i>T. spiralis</i> excretory/secretory antigens	ELISA Western blot	Produced	0	4 mg	1	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
<i>T. spiralis</i> crude worm extract	ELISA Western blot	Produced	0	2 mg	1	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
Pools of <i>Trichinella</i> spp. muscle larvae in alcohol	Artificial digestion Multiplex PCR	Produced	2 vials	22 vials	2	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
DNA from <i>Trichinella</i> spp. muscle larvae in alcohol	Artificial digestion Multiplex PCR	Produced	0	3	3	<input type="checkbox"/> Africa <input checked="" type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to OIE Member Countries?

No

ToR 3: To develop, standardise and validate, according to OIE Standards, new procedures for diagnosis and control of the designated pathogens or diseases

6. Did your laboratory develop new diagnostic methods validated according to OIE Standards for the designated pathogen or disease?

Yes

7. Did your laboratory develop new vaccines according to OIE Standards for the designated pathogen or disease?

No

Name of the new test or diagnostic method or vaccine developed	Description and References (Publication, website, etc.)
Identification of <i>Trichinella</i> spp. proteins recognized by specific IgG from serum samples of humans with trichinellosis by Western blotting (MI-16)	https://www.iss.it/en/web/iss-en/eurlp-diagnostic

ToR 4: To provide diagnostic testing facilities, and, where appropriate, scientific and technical advice on disease control measures to OIE Member Countries

8. Did your laboratory carry out diagnostic testing for other OIE Member Countries?

Yes

Name of OIE Member Country seeking assistance	Date (month)	No. samples received for provision of diagnostic support	No. samples received for provision of confirmatory diagnoses
AUSTRIA	December	0	35
BULGARIA	June	10	23
DENMARK	January	0	10
FINLAND	September	261	0
FRANCE	October	0	6
CHINA (PEOPLE'S REP. OF)	January	0	9
SPAIN	December	143	0
SWEDEN	June	15	1

9. Did your laboratory provide expert advice in technical consultancies on the request of an OIE Member Country?

Yes

Name of the OIE Member Country receiving a technical consultancy	Purpose	How the advice was provided
LATVIA	Artificial digestion of muscle samples (homogenization)	by email
MALTA	Artificial digestion of muscle samples from sows and boars (amount of meat)	by email
ROMANIA	Artificial digestion of muscle samples	by email
SWEDEN	ISO 18743 interpretation	by email
BELGIUM	ISO 18743 interpretation	by email
ITALY	Reference to ISO 18743	by email
COLOMBIA	Laboratory surfaces and equipment decontamination from <i>Trichinella</i> spp. larvae	by email
ROMANIA	Antibodies to detect <i>Trichinella</i> exposure	by mail

ToR 5: To carry out and/or coordinate scientific and technical studies in collaboration with other laboratories, centres or organisations

10. Did your laboratory participate in international scientific studies in collaboration with OIE Member Countries other than the own?

No

ToR 6: To collect, process, analyse, publish and disseminate epizootiological data relevant to the designated pathogens or diseases

11. Did your Laboratory collect epizootiological data relevant to international disease control?

Yes

If the answer is yes, please provide details of the data collected:

Epizootiological data relevant to *Trichinella* infection are collected in a database that is under revision at the moment. The database will be available at the International Commission on Trichinellosis website very soon.

12. Did your laboratory disseminate epizootiological data that had been processed and analysed?

Yes

If the answer is yes, please provide details of the data collected:

Our laboratory disseminate information regarding epizootiological data under request

13. What method of dissemination of information is most often used by your laboratory? (Indicate in the appropriate box the number by category)

a) Articles published in peer-reviewed journals: 8

Vieira-Pinto M, Fernandes ARG, Santos MH, Marucci G. *Trichinella britovi* infection in wild boar in Portugal. Zoonoses Public Health. 2021;68(2):103-109. doi: 10.1111/zph.12800. Epub 2021 Jan 17. PMID: 33455082.

Marucci G, Romano AC, Interisano M, Toce M, Pietragalla I, Collazzo GP, Palazzo L. *Trichinella pseudospiralis* in a red kite (*Milvus milvus*) from Italy. Parasitol Res. 2021;120(6):2287-2290. doi: 10.1007/s00436-021-07165-0. Epub 2021 May 1. PMID: 33932154.

Reichard MV, Sanders TL, Prentiss NL, Cotey SR, Koch RW, Fairbanks WS, Interisano M, La Rosa G, Pozio E. Detection of *Trichinella murrelli* and *Trichinella pseudospiralis* in bobcats (*Lynx rufus*) from Oklahoma. Vet Parasitol Reg Stud Reports. 2021 1;25:100609. doi: 10.1016/j.vprsr.2021.100609. Epub 2021 Jul 14. PMID: 34474802.

Bilska-Zajac E, Tonanzi D, Pozio E, Rozycki M, Cencek T, Thompson PC, Rosenthal BM, La Rosa G. Genetic evidence substantiates transmission of from one swine farm to another. Parasit Vectors. 2021 ;14(1):359. doi: 10.1186/s13071-021-04861-9. PMID: 34243814; PMCID: PMC8268521.

Pozio E, Celli M, Ludovisi A, Interisano M, Amati M, Gómez-Morales MA. Animal welfare and zoonosis risk: anti-*Trichinella* antibodies in breeding pigs farmed under controlled housing conditions. Parasit Vectors. 2021;14(1):417. doi: 10.1186/s13071-021-04920-1. PMID: 34419112; PMCID: PMC8379739.

Van der Giessen J, Deksne G, Gómez-Morales MA, Troell K, Gomes J, Sotiraki S, Rozycki M, Kucsera I, Djurković-Djaković O, Robertson LJ. Surveillance of foodborne parasitic diseases in Europe in a One Health approach. Parasite Epidemiol Control. 2021;13:e00205. doi: 10.1016/j.parepi.2021.e00205. PMID: 33665388; PMCID: PMC7900597.

Kahsay R, Gómez-Morales MA, Rivera HM, McAuliffe I, Pozio E, Handali S. A Bead-Based Assay for the Detection of Antibodies against *Trichinella* spp. Infection in Humans. *Am J Trop Med Hyg.* 2021;104(5):1858-62. doi: 10.4269/ajtmh.20-1569. Epub ahead of print. PMID: 33782208; PMCID: PMC8103447.

Pozio E, Di Marco Lo Presti V, Vicari D, Ludovisi A, Ciarello FP, Amati M, Ippolito D, Vesco G, Gómez-Morales MA. The detection of anti-*Trichinella* antibodies in free-ranging Nebrodi Regional Park black pigs from Sicily, Italy, suggests the circulation of *Trichinella britovi* in the island. *Vet Parasitol Reg Stud Reports.* 2021; 24:100578. doi: 10.1016/j.vprsr.2021.100578. Epub 2021 Apr 21. PMID: 34024394.

b) International conferences: 2

Two "virtual" International Conferences:

13th European Multicolloquium of Parasitology (EMOP), held in Belgrade, Serbia, from October 12-16, 2021.

National Reference Laboratories for Parasites, Istituto Superiore di Sanità, Roma , Italy, November 24, 2021

c) National conferences: 0

d) Other:

(Provide website address or link to appropriate information) 3

<https://eurlp.iss.it>

Gómez-Morales, M.A., Ludovisi, A., 2021. Immunodiagnosis, in: Bruschi, F., (Ed.), *Trichinella and trichinellosis*. Academic Press, Amsterdam, pp. 369-393.

Provision of support to the European Food Safety Authority and the European Centre for Disease Prevention and Control for the production of the Chapter *Trichinella* of the European Union One Health 2020 Zoonoses Report and of

online interactive data visualisation dashboards and zoonoses story maps. *EFSA Journal* 2021;19(12):6971, 324 pp. <https://doi.org/10.2903/j.efsa.2021.6971>.

ToR 7: To provide scientific and technical training for personnel from OIE Member Countries

To recommend the prescribed and alternative tests or vaccines as OIE Standards

14. Did your laboratory provide scientific and technical training to laboratory personnel from other OIE Member Countries?

No

ToR 8: To maintain a system of quality assurance, biosafety and biosecurity relevant for the pathogen and the disease concerned

15. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)
17025	Certificato accreditamento 17025.pdf
17043	Certificato accreditamento 17043.pdf

16. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Detection of anti-Trichinella antibodies in swine serum by indirect ELISA (MI-01)	ACCREDIA
Identification of Trichinella muscle larvae at species level by Multiplex PCR (MI-02)	ACCREDIA
Detection of anti-Trichinella antibodies in human serum by indirect ELISA (MI-03)	ACCREDIA
Identification of Trichinella spp. proteins recognized by specific IgG in serum of infected pigs by Western blotting (MI-13)	ACCREDIA
Identification of Trichinella spp. proteins recognized by specific IgG from serum samples of humans with trichinellosis by Western blotting (MI-16)	ACCREDIA
Proficiency Testing on the digestion method to detect Trichinella larvae	ACCREDIA
Proficiency Testing on the identification of Trichinella larvae at species level	ACCREDIA

17. Does your laboratory maintain a "biorisk management system" for the pathogen and the disease concerned?

Yes

(See Manual of Diagnostic Tests and Vaccines for Terrestrial Animals, Chapter 1.1.4)

ToR 9: To organise and participate in scientific meetings on behalf of the OIE

18. Did your laboratory organise scientific meetings on behalf of the OIE?

No

19. Did your laboratory participate in scientific meetings on behalf of the OIE?

No

ToR 10: To establish and maintain a network with other OIE Reference Laboratories designated for the same pathogen or disease and organise regular inter-laboratory proficiency testing to ensure comparability of results

20. Did your laboratory exchange information with other OIE Reference Laboratories designated for the same pathogen or disease?

Yes

21. Was your laboratory involved in maintaining a network with OIE Reference Laboratories designated for the same pathogen or disease by organising or participating in proficiency tests?

No

22. Did your laboratory collaborate with other OIE Reference Laboratories for the same disease on scientific research projects for the diagnosis or control of the pathogen of interest?

No

ToR 11: To organise inter-laboratory proficiency testing with laboratories other than OIE Reference Laboratories for the same pathogens and diseases to ensure equivalence of results

23. Did your laboratory organise or participate in inter-laboratory proficiency tests with laboratories other than OIE Reference Laboratories for the same disease?

Yes

Note: See Interlaboratory test comparisons in: Laboratory Proficiency Testing at: <http://www.oie.int/en/our-scientific-expertise/reference-laboratories/proficiency-testing> see point 1.3

Purpose for inter-laboratory test comparisons ¹	No. participating laboratories	Region(s) of participating OIE Member Countries
Determining the laboratory capability to conduct specific diagnostic tests (Proficiency testing on the digestion method to detect <i>Trichinella</i> larvae in meat)	32	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
Determining the laboratory capability to conduct specific diagnostic tests (Proficiency testing on <i>Trichinella</i> spp. larva identification at species level by a molecular method)	25	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East

ToR 12: To place expert consultants at the disposal of the OIE

24. Did your laboratory place expert consultants at the disposal of the OIE?

No

25. Additional comments regarding your report:

In 2021 there was less scientific and technical training activity than in the previous years, this was due to the COVID-19 pandemic