

OIE Reference Laboratory Reports Activities

Activities in 2020

This report has been submitted : 2021-01-15 08:45:50

| | |
|--|---|
| 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 49.90.20.78 |
| Fax: | +390-6 49 90 35 61 |
| E-mail address: | mariaangeles.gomezmorales@iss.it |
| Website: | https://www.iss.it |
| Name (including Title) of Head of Laboratory (Responsible Official): | Dr. Annalisa Pantosti, Research Leader |
| Name (including Title and Position) of OIE Reference Expert: | Dr. Maria Angeles Gomez Morales, 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 | 369 | 17 |
| Indirect ELISA for humans | No | 17 | 0 |
| Western blot for swine | No | 0 | 12 |
| Western blot for humans | No | 4 | 0 |
| Direct diagnostic tests | | Nationally | Internationally |
| Artificial muscle digestion | Yes | 11 | 0 |
| Multiplex PCR | No | 61 | 226 |

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 | SOUTH AFRICA |

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 PCR | Produced | 1 carcass | 5 carcasses | 6 carcasses | <input type="checkbox"/> Africa <input type="checkbox"/> Americ as <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 | 0.5 mg | 2 mg | 2 | <input type="checkbox"/> Africa <input type="checkbox"/> Americ as <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 | 3 mg | 2 | <input type="checkbox"/> Africa <input type="checkbox"/> Americ as <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East |
| <i>T. spiralis</i> muscle larvae | immunodiagnostic | Produced | 0 | 1,000 larvae | 1 | <input type="checkbox"/> Africa <input type="checkbox"/> Americ as <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East |
| <i>T. nativa</i> muscle larvae | immunodiagnostic | Produced | 0 | 100 larvae | 1 | <input type="checkbox"/> Africa <input type="checkbox"/> Americ as <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East |

| | | | | | | |
|--|--------------------|----------|---|------------|---|--|
| T. britovi muscle larvae | immunodiagnostic | Produced | 0 | 100 larvae | 1 | <input type="checkbox"/> Africa <input type="checkbox"/> Americ as <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East |
| T. papuae muscle larvae | immunodiagnostic | Produced | 0 | 100 larvae | 1 | <input type="checkbox"/> Africa <input type="checkbox"/> Americ as <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East |
| T. zimbabwensis | immunodiagnostic | Produced | 0 | 100 larvae | 1 | <input type="checkbox"/> Africa <input type="checkbox"/> Americ as <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East |
| Serum from Trichinella naturally infected dogs | ELISA/western blot | Produced | 0 | 0.5 ml | 1 | <input type="checkbox"/> Africa <input type="checkbox"/> Americ as <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?

No

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

No

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 |
|---|--------------|--|--|
| INDIA | July | 60 | 60 |
| PORTUGAL | February | 1 | 0 |
| SPAIN | January | 41 | 0 |
| SPAIN | February | 12 | 0 |
| SPAIN | March | 50 | 0 |
| SPAIN | May | 19 | 0 |
| SPAIN | June | 98 | 0 |
| SPAIN | December | 28 | 0 |
| SWEDEN | January | 7 | 0 |
| SWEDEN | June | 7 | 0 |
| CHINA (PEOPLE'S REP. OF) | January | 17 | 0 |

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 |
|--|---|-----------------------------|
| GERMANY | Evaluation of a new test for Trichinella | email |
| ITALY | Interpretation of Commission Implementing Regulation (EU) 2020/1478 | email and telephone |
| DENMARK | Information on ISO 18743:2015 | email |
| BELGIUM | Information on ISO 18743:2015 | email |
| SWEDEN | Information on ISO 18743:2015 | email |

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 https://trichinella.iss.it |

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 in a website (https://eurlp.iss.it) |

**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: 5

-Gómez-Morales MA, Mazzarello G, Bondi E, Arenare L, Bisso MC, Ludovisi A, Amati M, Viscoli C, Castagnola E, Orefice G, Magnè F, Pezzotti P, Pozio E. Second outbreak of *Trichinella pseudospiralis* in Europe: clinical patterns, epidemiological investigation and identification of the etiological agent based on the western blot patterns of the patients' serum. *Zoonosis and Public Health*. 2020; doi: 10.1111/zph.12761

-Pozio E, Meriardi G, Licata E, Della Casa G, Fabiani M, Amati M, Cherchi S, Ramini M, Faeti V, Interisano M, Ludovisi A, Rugna G, Marucci G, Tonanzi D, Gómez-Morales M A. Differences in larval survival and IgG response patterns in long-lasting infections by *Trichinella spiralis*, *Trichinella britovi* and *Trichinella pseudospiralis* in pigs. *Parasites&Vectors*,2020. 13(1):520. doi: 10.1186/s13071-020-04394-7.

-Piaggi S, Salvetti A, Gómez-Morales M.A, Pinto B, Bruschi F. Glutathione-S-transferase omega 1 and nurse cell formation during experimental *Trichinella* infection. *Vet Parasitol*. 2020; doi: 10.1016/j.vetpar.2020.109114

-Kärssin A; Remes N; Korge K; Viigipuu M; Stensvold CR; Gómez-Morales MA; Ludovisi A; Jokelainen P; Lassen B. Herbivores as accidental hosts for *Trichinella*: Search for evidence of *Trichinella* infection and exposure in free-ranging moose (*Alces alces*) in a highly endemic setting. *Journal of Wildlife Diseases*. 2021, 57(1): 1-9

-Balić D, Marucci G, Agičić M, Benić M, Krovina Z, Miškić T, Aladić K, Škrivanko M. *Trichinella* spp. in wild boar (*Sus scrofa*) populations in Croatia during an eight-year study (2010-2017). *One Health*. 2020; 11:100172

b) International conferences: 0

Due to the ongoing COVID-19 pandemic International Conferences have been cancelled

c) National conferences: 1

15th Workshop of the National Reference Laboratories for Parasites

15 December 2020

Virtual meeting

d) Other:

(Provide website address or link to appropriate information) 2

<https://trichinella.iss.it>, which is under revision

<https://eurlp.iss.it>

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 | ACCREDIA |
| Identification of Trichinella muscle larvae at species level by Multiplex PCR | ACCREDIA |
| Detection of anti-Trichinella antibodies in human serum by indirect ELISA | ACCREDIA |
| Detection of anti-Trichinella antibodies in swine serum by Western Blot | ACCREDIA |
| Proficiency Testing on the digestion method to detect Trichinella larvae | ACCREDIA |
| Proficiency Testing on the identification of Trichinella larvae at the 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 a laboratory's capability to conduct specific diagnostic tests (Proficiency Testing on the digestion method to detect <i>Trichinella</i> larvae in meat) | 29 | <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 a laboratory's capability to conduct specific diagnostic tests (Proficiency testing on <i>Trichinella</i> spp. larva identification at the species level by a molecular method) | 19 | <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 2020 there was less scientific and technical training activity than in the previous years, this was due to the COVID-19 pandemic