

OIE Reference Laboratory Reports Activities

Activities in 2021

This report has been submitted : 2022-01-19 10:43:09

Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	Babesiosis
Address of laboratory:	Istituto Zooprofilattico Sperimentale della Sicilia (IZSSI), via Gino Marinuzzi 3, 90129, Palermo ITALY
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E-mail address:	valeria.blanda@izssicilia.it
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Name (including Title) of Head of Laboratory (Responsible Official):	Dr. Salvatore Seminara, General manager Istituto Zooprofilattico Sperimentale della Sicilia
Name (including Title and Position) of OIE Reference Expert:	Valeria Blanda
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			
B. bovis IFI	yes	0	0
B. caballi IFI	yes	112	0
Babesia caballi ELISA	yes	0	0
Direct diagnostic tests			
PCR Babesia bigemina (rap1)	yes	0	96
PCR Babesia bovis (rap1)	yes	0	96
PCR Babesia caballi (BC48)	yes	148	0
Babesia spp. blood smears	yes	0	0
Babesia spp. Theileria spp. Reverse Line Blot	yes	148	96
Babesia bovis Real Time PCR	yes	0	96
Babesia bigemina Real Time PCR	yes	0	96

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?

No

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
Babesia bigemina Positive control DNA	PCR	provided	0,2	0	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
Babesia bovis Positive control DNA	PCR	provided	0,2	0	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
Babesia caballi Positive control DNA	PCR	provided	0,2	0	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
Babesia bigemina Positive control serum	IFAT	provided	1	0	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
Babesia bovis Positive control serum	IFAT	provided	1	0	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
Babesia caballi Positive control serum	IFAT	provided	1	0	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

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.)
ELISA diagnostic test for cattle babesiosis	Vet Ital. 2016 Jan-Mar;52(1):63-9. doi: 10.12834/VetIt.74.237.2. A promising new ELISA diagnostic test for cattle babesiosis based on Babesia bigemina Apical Membrane Antigen-1. Torina A1, Cordaro A, Blanda V, D'Agostino R, Scimeca S, Scariano ME, Sireci G, Lelli R. DOI:10.12834/VetIt.74.237.2

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
UNITED ARAB EMIRATES	Genuary	96	96

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
BELGIUM	Recommendation for serological and molecular tests for the detection of <i>B. gibsoni</i>	Consultation via e-mail
SPAIN	Consultant for Spanish researchers on health implications of Hyalomma ticks	Consultation and materials provided via e-mail
ARGENTINA	information on diagnostic techniques for zoonotic agents transmitted by vectors and contacts for the internship at the center	Consultation and materials provided via e-mail
ZIMBABWE	Recommandation of methods to detect antibodies against <i>Babesia bovis</i> / <i>bigemina</i> against	Consultation and materials provided via e-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?

Yes

Title of the study	Duration	Purpose of the study	Partners (Institutions)	OIE Member Countries involved other than your country
OIE Twinning contract between the OIE reference network of Istituti Zooprofilattici Sperimentali (IIZZSS) in Italy (Parent Collaborating Centre) and the Abu Dhabi Food Control Authority (ADFCA), the Animal Health Centre for Diagnostic and research in Abu Dhabi - United Arab Emirates (Candidate Centre) for the establishment and development of an OIE Collaborating Centre on camel diseases.	36 months	Twinning project	Abu Dhabi Food Control Authority - ADFCA Italian IIZZSS Network	UNITED ARAB EMIRATES
OIE Twinning project Enhancing Research for Africa Network (ERFAN) meeting	36 months	Twinning project	IZS Abruzzo and Molise, South Central Africa Countries and Maghreb	
Immune Response to Tick-Borne Hemoparasites: Host Adaptive Immune Response Mechanisms as Potential Targets for Therapies and Vaccines.	18 months	Report on the adaptive Immune Response to Tick-Borne diseases	SaBio, Instituto de Investigación en Recursos Cinegéticos IREC-CSICUCLM- JCCM, Ronda de Toledo s/n, 13005 Ciudad Real, Spain	SPAIN
Immune Response to Tick-Borne Hemoparasites: Host Adaptive Immune Response Mechanisms as Potential Targets for Therapies and Vaccines.	18 months	Report on the adaptive Immune Response to Tick-Borne diseases	Department of Veterinary Pathobiology, Center for Veterinary Health Sciences, Oklahoma State University, Stillwater, OK 74078, USA	UNITED STATES OF AMERICA
Innate Immune Response to Tick-Borne Pathogens: Cellular and Molecular Mechanisms Induced in the Hosts	18 months	Report on the innate Immune Response to Tick-Borne diseases	SaBio, Instituto de Investigación en Recursos Cinegéticos IREC-CSICUCLM- JCCM, Ronda de Toledo s/n, 13005 Ciudad Real, Spain	SPAIN
Innate Immune Response to Tick-Borne Pathogens: Cellular and Molecular Mechanisms Induced in the Hosts	18 months	Report on the innate Immune Response to Tick-Borne diseases	Department of Veterinary Pathobiology, Center for Veterinary Health Sciences, Oklahoma State University, Stillwater, OK 74078, USA	UNITED STATES OF AMERICA

Investigations on Tick-borne Haemoparasites in Dromedarian Camels in Al-Dhafra Region of Abu Dhabi, UAE	18 months	Molecular investigation on tick-borne pathogens in camels	Abu Dhabi Agriculture and Food Safety Authority (ADAFSA), Abu Dhabi Emirate, UAE	UNITED ARAB EMIRATES
Ticks infesting humans and associated pathogens: a cross-sectional study in northwest Italy	36 months	A cross-sectional study in a 3-year period (2017-2019) on tick-borne pathogens in ticks from northwest Italy	Istituto Zooprofilattico Sperimentale del Piemonte, Liguria e Valle D'Aosta, Turin, Italy.	ITALY

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:

Studies of Babesia spp. circulation in camels and ticks from the United Arab Emirates; A cross-sectional study in a 3-year period (2017-2019) on tick-borne pathogens in ticks from northwest Italy

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:

El Tigani-Asil ETA, Blanda V, Abdelwahab GE, Hammadi ZMA, Habeeba S, Khalafalla AI, Alhosani MA, La Russa F, Migliore S, Torina A, Loria GR, Al Muhairi SS. Molecular Investigation on Tick-Borne Hemoparasites and Coxiella burnetii in Dromedary Camels (Camelusdromedarius) in Al Dhafra Region of Abu Dhabi, UAE. Animals (Basel). 2021 Mar 2;11(3):666. doi: 10.3390/ani11030666. PMID: 33801532; PMCID: PMC8000914. Audino T, Pautasso A, Bellavia V, Carta V, Ferrari A, Verna F, Grattarola C, Iulini B, Pintore MD, Bardelli M, Cassina G, Tomassone L, Peletto S, Blanda V, Torina A, Caramelli M, Casalone C, Desiato R. Ticks infesting humans and associated pathogens: a cross-sectional study in a 3-year period (2017-2019) in northwest Italy. Parasit Vectors. 2021 Mar 5;14(1):136. doi: 10.1186/s13071-021-04603-x. PMID: 33673864; PMCID: PMC7934501.

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: 2

El Tigani-Asil ETA, Blanda V, Abdelwahab GE, Hammadi ZMA, Habeeba S, Khalafalla AI, Alhosani MA, La Russa F, Migliore S, Torina A, Loria GR, Al Muhairi SS. Molecular Investigation on Tick-Borne Hemoparasites and Coxiella burnetii in Dromedary Camels (Camelusdromedarius) in Al Dhafra Region of Abu Dhabi, UAE. Animals (Basel). 2021 Mar 2;11(3):666. doi: 10.3390/ani11030666. PMID: 33801532; PMCID: PMC8000914.

Audino T, Pautasso A, Bellavia V, Carta V, Ferrari A, Verna F, Grattarola C, Iulini B, Pintore MD, Bardelli M, Cassina

G, Tomassone L, Peletto S, Blanda V, Torina A, Caramelli M, Casalone C, Desiato R. Ticks infesting humans and associated pathogens: a cross-sectional study in a 3-year period (2017-2019) in northwest Italy. *Parasit Vectors*. 2021 Mar 5;14(1):136. doi: 10.1186/s13071-021-04603-x. PMID: 33673864; PMCID: PMC7934501.

Torina A, Blanda V, Villari S, Piazza A, La Russa F, Grippi F, La Manna MP, Di Liberto D, de la Fuente J, Sireci G. Immune Response to Tick-Borne Hemoparasites: Host Adaptive Immune Response Mechanisms as Potential Targets for Therapies and Vaccines. *Int J Mol Sci*. 2020 Nov 20;21(22):8813. doi: 10.3390/ijms21228813. PMID: 33233869; PMCID: PMC7699928.

Torina A, Villari S, Blanda V, Vullo S, La Manna MP, Shekarkar Azgomi M, Di Liberto D, de la Fuente J, Sireci G. Innate Immune Response to Tick-Borne Pathogens: Cellular and Molecular Mechanisms Induced in the Hosts. *Int J Mol Sci*. 2020 Jul 30;21(15):5437. doi: 10.3390/ijms21155437. PMID: 32751625; PMCID: PMC7432002.

b) International conferences: 0

c) National conferences: 1

V BLANDA, A CARUANA, S BONACCORSO, F LA RUSSA, R D'AGOSTINO, S VILLARI, G CAMMILLERI, A TORINA, V FERRANTELLI. Development of a Reverse Line Blot for simultaneous detection of Tick-Borne Pathogens in equines. Presented at XXXI Congresso SolPa & 2021 ESDA Event, 16-19 giugno 2021, Teramo (Italy)

d) Other:

(Provide website address or link to appropriate information) 0

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?

Yes

a) Technical visits: 3

b) Seminars: 0

c) Hands-on training courses: 0

d) Internships (>1 month): 1

Type of technical training provided (a, b, c or d)	Country of origin of the expert(s) provided with training	No. participants from the corresponding country
d	Spain	1
a	Iran	1
a	France	2

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)
ISO 17025	Certificato di Accreditamento n. 0246.pdf

16. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Babesia bigemina PCR	ACCREDIA
Babesia bovis PCR	ACCREDIA
Babesia caballi IFI	ACCREDIA
Babesia caballi PCR	ACCREDIA
Babesia bovis IFI	ACCREDIA
Babesia spp smears	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?

Yes

Title of event	Date (mm/yy)	Location	Role (speaker, presenting poster, short communications)	Title of the work presented
Réunion de Consultation Régionale Consultation Régionale pour l'Afrique du Nord - seconde phase du PPR GEP	09/21	On-line meeting	Speaker	"STOR: its strengths and expected activities in REMESA for PPR control and eradication"
Provisional Agenda of the 23 rd JPC/REMESA 2021	11/21	On-line meeting	Contact person for Remesa-Stor	
First coordination meeting about the activities of STOR	12/21	On-line meeting	Contact person for Remesa-Stor	

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?

No

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?

No

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

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:

Due to the COVID19 pandemic, some activities have been reduced, such as exchanges of students and trainees, technical visits and seminars as well as participation in conferences and training events. In 2021 the change of the designated expert for the disease occurred.