World Organisation for Animal Health

Antonio Lavazza - - ITALY

WOAH Reference Laboratory Reports Activities 2024

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LABORATORY INFORMATION

***Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:**	Myxomatosis
***Address of laboratory:**	Via Antonio Bianchi 7/9
***Tel:**	+39-030 22.90.388
***E-mail address:**	patrizia.cavadini@izsler.it
Website:	https://www.izsler.it/chi-siamo/per-chi-e-con-chi-lavoriamo/centri-di-referenza/internazionali/oie-reference-laboratory-for-myxomatosis-of-rabbits/
***Name (including Title) of Head of Laboratory (Responsible Official):**	Dr. Giorgio Varisco
***Name (including Title and Position) of WOAH Reference Expert:**	Dr. Antonio Lavazza
***Which of the following defines your laboratory? Check all that apply:**	Governmental

TOR1: DIAGNOSTIC METHODS

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 WOAH Manual (Yes/No)	Total number of test performed last year	
Indirect diagnostic tests		Nationally	Internationally
c-ELISA	Yes	187	3
Direct diagnostic tests		Nationally	Internationally
PCR one step	Yes	72	0
PCR real-time	Yes	6	0

NGS sequencing	No	16	0
EM	Yes	26	0
Histopathology	Yes	0	0
Cell Culture Isolation	Yes	0	0
Immunofluorescence and Immunoperoxidase	Yes	0	0

TOR2: REFERENCE MATERIAL

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

No

3. Did your laboratory supply standard reference reagents (nonWOAH-approved) and/or other diagnostic reagents to WOAH Members?

Yes

Type of reagent available	Related diagnostic test	Produced/ provide	Amount supplied nationally (ml, mg)	Amount supplied internationally (ml, mg)	No. of recipient WOAH Member Countries	Country of recipients
Serological diagnostic kit	C-ELISA	Produced and provided	0	1 kit	1	SPAIN,
Reference strain	PCR / Cell Culture	Provided	0	1	1	CANADA,
Monclonal Antibodies	Immunohistochemistry	Produced and Provided	0	2ml	1	UNITED STATES OF AMERICA,

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to WOAH Members?

No

TOR3: NEW PROCEDURES

6. Did your laboratory develop new diagnostic methods for the designated pathogen or disease?

No

7. Did your laboratory validate diagnostic methods according to WOAH Standards for the designated pathogen or disease?

No

8. Did your laboratory develop new vaccines for the designated pathogen or disease?

No

9. Did your laboratory validate vaccines according to WOAH Standards for the designated pathogen or disease?

No

TOR4: DIAGNOSTIC TESTING FACILITIES

10. Did your laboratory carry out diagnostic testing for other WOAH Members?

Yes

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Name of WOAH Member Country seeking assistance	Date	Which diagnostic test used	No. samples received for provision of diagnostic support	No. samples received for provision of confirmatory diagnoses
COSTA RICA	2024-07-16	c-ELISA	2	0
HONG KONG	2024-12-26	c-ELISA	1	0

11. Did your laboratory provide expert advice in technical consultancies on the request of an WOAH Member?

Yes

Name of the WOAH Member Country receiving a technical consultancy	Purpose	How the advice was provided
THE NETHERLANDS	Technical opinion on management of Myxomatosis in wild hares	Written opinion
GERMANY	Information on Myxomatosis in wild hares	Email
SPAIN	Uso of serology for checking vaccination results	Videocall

TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

12. Did your laboratory participate in international scientific studies in collaboration with WOAH Members other than the own?

Yes

Title of the study	Duration	Purpose of the study	Partners (Institutions)	WOAH Member Countries involved other than your country
Study of the health status of wild and domestic lagomorphs in the Iberian Peninsula from a One Health approach (IberLagoHealth)	3 years	To advance the knowledge of health status of wild and domestic lagomorphs in the Iberian Peninsula from a One Health perspective	ANSES CIRAD CSIC DEFRA DTU EULS FLI IMR INIAV INRAE ISS IZSLER IZSLT IZS-Teramo NVI PIWET RIVM Ruokavirasto Sciensano SLA SLU SSI SURREY SVA UAB UCPH UGent UNIPD UNITO WR	BELGIUM DENMARK ESTONIA FINLAND FRANCE GEORGIA GERMANY ITALY NORWAY POLAND PORTUGAL SPAIN SWEDEN THE NETHERLANDS UNITED KINGDOM
Enfermedades infecciosas yparasitaria de una especie invasora, la liebere europea (Lepus europeas), a lo largo de un gradiente ambiental y de usos del suela en Argentina Central	2 years	To study the health status of brown hare, an invasive species in Argentina	CONICET	ARGENTINA
"Contribution to the study of recurrent diseases in hares in Algeria".	2 years	To study the health status of wild lagomorphs in Algeria	University Chadli Benjedid El Tarf ALgeria	ALGERIA
Development of a		Development of an ELISPOT assay for		

Diagnostic Test to Determine the Cell-Mediated Response of Rabbits Against the Myxoma Virus.	1 year	detecting gamma interferon (IFN-γ) to gain a comprehensive understanding of the immunological response to Myxoma virus infection and vaccination	Centro de Investigacion en Sanidad Animal. Instituto Nacional De Investigaciones Agrarias	SPAIN

13. In exercising your activities, have you identified any regulatory research needs* relevant for WOAH?

No

TOR6: EPIZOOLOGICAL DATA

14. Did your Laboratory collect epidemiological data relevant to international disease control?

Yes

If the answer is yes, please provide details of the data collected:
The outbreaks of myxomatosis worldwide are extremely rare and even when coccurring they are seldom communicated. In fact, Myxomatosis is not a compulsory notifiable disease in any country since it has not been included in the list of dieseses of general interest by the UE (Reg. UE 2016/429). Nevertheless, the disease is still present in those countries where rabbit farming is developed (especially evolving in the amyxomatous, respiratory form) and where rabbits are present as wild animals. More recent data come from the Iberian peninsula and from the Nord Europe (The Netehrlands and Germany) regarding the occurrence of the disease with high mortality in hares.

15. Did your laboratory disseminate epidemiological data that had been processed and analysed?

No

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

a) Articles published in peer-reviewed journals:

1

ROSSINI E., BAZZUCCHI M., TROCCHI V., MERZONI F., BERTASIO C., KNAUF S., LAVAZZA A., CAVADINI P. Identification and characterisation of a Myxoma virus detected in the Italian hare (Lepus corsicanus). Viruses 2024, 16, 437. https://doi.org/10.3390/v16030437

b) International conferences:

1

Rossini E., Bazzucchi M., Merzoni F., Chiapponi C., Bertasio C., Cavadini P., Lavazza A. What's in the field? Description of some Italian myxoma viruses and in-depth molecular characterisation of the "Borghi" vaccine strain. Book of Abstract 13th World Rabbit Congress Tarragona (Spain) Pathology and Hygiene Session. 2-4 October 2024 WRSA - IRTA – AECSSU, pp 581-584.

c) National conferences:

0

d) Other (Provide website address or link to appropriate information):

0

TOR7: SCIENTIFIC AND TECHNICAL TRAINING

17. Did your laboratory provide scientific and technical training to laboratory personnel from other WOAH Members?

Yes

a) Technical visit : 1

b) Seminars : 0

c) Hands-on training courses: 0

d) Internships (>1 month) 0

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
A	CHINA (PEOPLE'S REP. OF)	11

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
UNI CEI ENISO/IEC 17025	Accreditation Certificate	certificato-148-L-rev.6.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
PCR/RT-PCR	ILAC MRA - ACCREDIA
Serological Competitive MAb ELISA (c-ELISA)	ILAC MRA - ACCREDIA
Histopathology/Immunohistochemistry	ILAC MRA - ACCREDIA
EM negative staining methods	ILAC MRA - ACCREDIA

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

Yes

The laboratory works according to the Manual of Diagnostic Tests and Vaccines for Terrestrial Animals, Chapter 1.1.4, and the WHO

Laboratory Biosafety Manual. A risk analysis approach was adopted to manage the biological risks of specific agents aimed at biosecurity in veterinary laboratories and animal facilities. As a result of this process, the assignment of Myxoma virus to the risk group (BLS2) relevant to the country was defined, and the consequent steps were taken to work in laboratory facilities defined by containment levels appropriate to the types of risks identified.

TOR9: SCIENTIFIC MEETINGS

21. Did your laboratory organise scientific meetings related to the pathogen in question on behalf of WOAH?

No

22. Did your laboratory participate in scientific meetings related to the pathogen in question on behalf of WOAH?

No

TOR10: NETWORK WITH WOAH REFERENCE LABORATORIES

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

Not applicable (only WOAH Reference Laboratory designated for the disease

24. Do you network (collaborate or share information) with other WOAH Reference Laboratories designated for the same pathogen?

Not applicable (only WOAH Reference Laboratory designated for the disease

25. Did you organise or participate in inter-laboratory proficiency tests with WOAH Reference Laboratories designated for the same pathogen during the past 2 years?

Not applicable (Only WOAH Reference Laboratory designated for the disease)

Not applicable

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

Not applicable (only WOAH Reference Laboratory designated for the disease

TOR11: OTHER INTERLABORATORY PROFICIENCY TESTING

27. Did your laboratory organise or participate in inter-laboratory proficiency tests with laboratories other than WOAH Reference Laboratories for the same pathogen during the past 2 years?

Yes

Purpose for inter-laboratory test comparisons1	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Name of the test	WOAH Member Countries
To assess performances of PCR methods	Participant	2	Inter-laboratory comparison tests on detection of myxoma virus DNA in animal tissues	POLAND,

TOR12: EXPERT CONSULTANTS

28. Did your laboratory place expert consultants at the disposal of WOAH?

Yes

Kind of consultancy	Location	Subject (facultative)
Review of WOAH Standards	On site	Last review of the the chapter of the Manual was completed on 2020 and published on 2021.

29. Additional comments regarding your report:

Yes

Myxomatosis is a well-known disease that is still present, often endemic, in some countries. However, its occurrence is very rarely reported because notification is not compulsory in most countries. European laws (reg EU 429/2016) did not declare any rabbit disease notifiable. Therefore, the available epidemiological data are scarce, and the clinical aspects and distribution patterns are the same since their original appearance, making the diagnosis often based only on clinical signs. Thus, the requests for testing samples and for scientific advice are equally rare.

Attention to this disease has just slightly increased in Europe due to the occurrence of a mutated strain typically affecting hares.

Some requests for specific reagents, especially for serological surveys and pathological studies, were made from countries where this new form of the disease was reported.