

OIE Reference Laboratory Reports Activities

Activities in 2020

This report has been submitted : 2021-01-28 11:14:02

Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	Viral encephalopathy and retinopathy
Address of laboratory:	OIE Reference Laboratory for Viral Encephalopathy and Retinopathy of Marine Fish, Fish virology Dep., Istituto Zooprofilattico Sperimentale delle Venezie (IZSVe) Viale dell'Università, 10 35020 Legnaro (Padova), Italy
Tel.:	+39-049 808 43 33
Fax:	+39-049 808 43 60
E-mail address:	atoffan@izsvenezie.it
Website:	www.izsvenezie.it
Name (including Title) of Head of Laboratory (Responsible Official):	Calogero Terregino, Head of the EU/National Reference Laboratory for AI/NDV. Director of the Research and Development Department/acting Director of the Specialized Virology and Experimental Research Unit (IZSVe)
Name (including Title and Position) of OIE Reference Expert:	Anna Toffan DVM PhD, Head of Fish virology Dep.
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			
Seroneutralization	No	44	0
ELISA	No	57	565
Direct diagnostic tests			
Cell Culture	Yes	2	0
Real-time RT-PCR(rRT-PCR)	Yes	148	884
Immunohistochemistry (IHC)	Yes	2	8
Molecular characterization (RT-PCR and sequencing analysis)	Yes	2	7

**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
Lyophilized inactivated betanodavirus (reference strains)	RT-PCR rRT-PCR	Stored	0 ml	7 ml	4	<input type="checkbox"/> Africa <input type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
Lyophilized inactivated betanodavirus (other strains)	RT-PCR rRT-PCR	Stored	0 ml	2 ml	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
Positive Sea bass brain	Histology	Produced and Stored	0 pieces	2 paraffin wax blocks; 3 brain slides E&H; 2 brain slides IHC;	1	<input type="checkbox"/> Africa <input checked="" type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
E-11 cell line	Cell culture isolation	Produced and Stored	0 ml	5 flasks of 25 cm ² (35 ml)	1	<input checked="" type="checkbox"/> Africa <input type="checkbox"/> Americas <input type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
Rabbit Hyper-Immune serum antibetanodavirus	SN ELISA IHC	Stored	0 ml	2 ml	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
Rabbit Hyper-Immune serum Anti sea bass IgM	SN ELISA IHC	Stored	0 ml	0,5 ml	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

Positive Sea Bass serum	SN ELISA	Produced and Provided	0 ml	50 x 0,5 ml	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
Negative Sea Bass serum	SN ELISA	Produced and Provided	0 ml	50 x 0,5 ml	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?

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
SPAIN	January - December	660	2
FRANCE	January - December	605	0
TUNISIA	January - December	12	0
THE NETHERLANDS	April - October	3	0
CROATIA	November - December	10	0
CYPRUS	January	69	2
ALGERIA	January	0	8
TURKEY	February	4	2
UNITED KINGDOM	July	0	2
MOZAMBIQUE	September - December	66	1
PORTUGAL	June - September	20	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
SPAIN	Diagnosis and control of VER	Remote assistance
FRANCE	Diagnosis and control of VER	Remote assistance
ALGERIA	Supporting the preparation of the manuscript on grouper mortality	Revision and submission of the manuscript to the Journal of fish disease (see Tor. 6)
CYPRUS	Diagnosis and control of VER and other fish diseases	Remote assistance
DENMARK	Supporting research activities on vaccine against VER; manuscript writing	Manuscript writing support
TUNISIA	Diagnosis and control of VER	Provision of reference materials (cells, plasmids, protocols, flasks); remote assistance.
MOZAMBIQUE	Diagnosis and control of VER in tilapia	Diagnostic support and remote assistance
MALTA	Diagnosis and control of VER	Diagnostic support and remote assistance
NORWAY	Supporting epidemiological data collection and evaluation in the framework of the European project MedAID	Remote assistance

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
VetBioNet	5 years	Veterinary Biocontained facility Network for excellence in animal infectiology research and experimentation	<p>www.vetbionet.eu/consortium/ 1. Institut National de la Recherche Agronomique (France) 2. Stichting Dienst Landbouwkundig Onderzoek (Netherlands) 3. Friedrich Loeffler Institut (Germany) 4. The Pirbright Institute LBG (UK) 5. The Secretary of State for Environment, Food and Rural Affairs (UK) 6. Moredun Research Institute (UK) 7. Instituto Nacional de Investigacion y Tecnologia Agraria y Alimentaria (Spain) 8. Institut De Recerca I Tecnologia Agroalimentaries (Spain) 9. Eidgenoessisches Departement Des Innern (Switzerland) 10. Panstwowy Instytut Weterynaryjny - Panstwowy Instytut Badawczy (Poland) 11. Marine Scotland (UK) 12. Aarhus Universitet (Denmark) 13. Agence Nationale de Securite Sanitaire de L'alimentation, de L'environnement et du Travail (France) 14. The University of Edinburgh (UK) 15. Erasmus Universitair Medisch Centrum Rotterdam (Netherlands) 16. Istituto Zooprofilattico Sperimentale delle Venezie (Italy) 17. The University of Nottingham (UK) 18. University College Dublin, National University of Ireland (Ireland) 19. International Livestock Research Institute (Kenya) 20. Commonwealth Scientific and Industrial Research Organisation (Australia) 21. Federazione Europea di Zootecnica (Italy) 22. Inscreenex GmbH (Germany) 23. Leica Microsystems Cms GmbH Ernst-Leitz (Germany) 24. Noldus Information Technology Bv (Netherlands) And other 5 participants</p>	<p>AUSTRALIA DENMARK FRANCE GERMANY IRELAND ITALY KENYA POLAND SPAIN SWITZERLAND THE NETHERLANDS UNITED KINGDOM</p>

MedAID	4 years	Mediterranean Aquaculture Integrated Development	See also http://www.medaid-h2020.eu/ 1. Mediterranean Agronomic Institute of Zaragoza (Spain) 2. Institut de Recerca i Tecnologia Agroalimentaries (Spain) 3. NOFIMA AS (Norway) 4. Norwegian Veterinary Institute (Norway) 5. Universidad de Cantabria (Spain) 6. Institut Francais de Recherche pour l'exploitation de la mer (France) 7. Fundacion AZTI - AZTI Fundazioa (Spain) 8. Hellenic Centre for Marine Research (Greece) 9. Hrvatski Veterinarski Institut (Croatia) 10. Danmarks Tekniske Universitet (Denmark) 11. Aarhus Universitet (Denmark) 12. Kobenhavns Universitet (Denmark) 13. National Institute of Oceanography and Fisheries (Egypt) 14. Scea les poissons du soleil (France) 15. Selarl Vet'eau (France) 16. Avdelas Lamprakis (Greece) 17. Istituto Zooprofilattico Sperimentale Delle Venezie (Italy) 18. Alma Mater Studiorum - Universita di Bologna (Italy) 19. Nisea Societa Cooperativa (Italy) 20. Wageningen University (Netherlands) 21. Samfunns- og næringslivsforskning AS (Norway) 22. Centro de Ciencias do Mar do Algarve (Portugal) 23. Dibaq Diproteg SA (Spain) 24. Instituto Nacional de Investigaciony Tecnologia Agraria y Alimentaria OA MP (Spain) And other 9 partners	CROATIA DENMARK EGYPT FRANCE GREECE ITALY NORWAY PORTUGAL SPAIN THE NETHERLANDS TUNISIA TURKEY UNITED KINGDOM
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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:

Data repository of NNV strains/sequence collected during mortality events in groupers (*Epinephelus* spp.) in the Mediterranean basin; Data repository of reassortant RGNNV/SJNNV strains from NNV outbreaks in sea bream; Data collected from NNV outbreaks in sea bream that occurred in European hatchery; Data obtained from questionnaires sent in the frame of the 3rd VER-IPT 2020 (proficiency test).

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:
Through publication of peer reviewed articles at international level and supporting other laboratories in manuscript writing

**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

Boukedjouta, R., T. Pretto, M. Abbadi, L. Biasini, A. Toffan, and K. Mezali. Viral encephalopathy and retinopathy is endemic in wild groupers (genus *Epinephelus* spp.) of the Algerian coast. *J. Fish Dis.* 43:801-812. 2020.

Zrnčić, S., A. Toffan, and B. Gorgoglione. First joint webinar in collaboration between WAVMA and EAFP: 'Main infectious diseases of marine fish'. *Bulletin of the European Association of Fish Pathologists* 40:139-140. 2020.

b) International conferences: 2

Barsøe, S., A. Stratmann, N. Vendramin, A. Toffan, F. Pascoli, and N. Lorenzen. (2020). Experimental testing of a virus like particle (VLP-) vaccine against Viral Nervous Necrosis in European sea bass. 24th Annual Workshop of the National Reference Laboratories for Fish Diseases. 3rd-4th November 2020.

Barsøe, S., N. Lorenzen, N. Vendramin, A. Stratmann, F. Pascoli, M. Abbadi, A. Toffan. (2020). VetBioNet TNA: Vaccination and challenge trial of European Sea Bass at IZSVE. 3rd annual meeting of VetBioNet project: poster session. 17th December 2020.

c) National conferences: 0

d) Other:

(Provide website address or link to appropriate information) 8

Book Chapter:

Toffan, A., and V. Panzarin. (2020). Viral Encephalopathy and Retinopathy/Viral Nervous Necrosis (VER/VNN). In: *Diagnostic Manual for the main pathogens in European seabass and Gilthead seabream aquaculture*, CIHEAM - Centre International de Hautes Etudes Agronomiques Méditerranéennes ed. Anonymous Snjezana Zrnčić, Zaragoza, Spain. pp. 45-60. 2020.

Presentation (invited speaker):

Toffan, A., (2020). "Viral encephalo-retinopathy", session Main infectious diseases of farmed marine fish species. WAVMA's WebCEPD - Program - Webinars for Global Aquatic Veterinary Education. 27th July 2020
<https://www.wavma.org/Webinars/b-1036-main-infectious-diseases-of-farmed-marine-fish>

Links:

National reference laboratory for fish, crustacean and mollusc pathology / OIE reference laboratory for viral encephalopathy and retinopathy of marine fish
<http://www.izsvenezie.com/reference-laboratories/fish-crustacean-and-mollusc-pathology/>

IZSVE's contribution to VETBIONET: <https://www.izsvenezie.com/vetbionet-network/>

EU Horizon 2020 to VETBIONET (Veterinary Biocontained facility Network for excellence in animal infectious disease research and experimentation): <http://www.vetbionet.eu/>

IZSVE's contribution to MEDAID:

<http://www.izsvenezie.com/medaid-project-stand-up-mediterranean-fish-farming/>

EU Horizon 2020: MedAID (Mediterranean Aquaculture Integrated Development)

<http://www.medaid-h2020.eu/>

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)
ISO 17025	Accredia Nodavirus.pdf

16. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Virus Isolation in Cell Cultures	ACCREDIA - Italian Accreditation System

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?

Not applicable (Only OIE Reference Lab. designated for disease)

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?

Not applicable (Only OIE Reference Lab. designated for disease)

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?

Not applicable (Only OIE Reference Lab. designated for disease)

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
3rd OIE Viral Nervous Necrosis Interlaboratory 3rd VER-IPT 2020 (IZSve organiser)	26	<input checked="" type="checkbox"/> Africa <input checked="" type="checkbox"/> Americas <input checked="" type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input checked="" 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: