World Organisation for Animal Health

Isabelle Arzul - - FRANCE

WOAH Reference Laboratory Reports Activities 2025

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LABORATORY INFORMATION

***Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:**	Infection with Bonamia exitiosa and Bonamia ostreae
***Address of laboratory:**	ASIM-Ifremer-Avenue de Mus de Loup- 17390 La Tremblade-FRANCE
***Tel:**	+33 5 46.76.26.10
***E-mail address:**	iarzul@ifremer.fr
Website:	http://www.eurl-mollusc.eu/ https://asim.ifremer.fr/
***Name (including Title) of Head of Laboratory (Responsible Official):**	Dr Isabelle Arzul (Cadre de recherche et responsable de l'unité)
***Name (including Title and Position) of WOAH Reference Expert:**	Dr Isabelle Arzul (Cadre de recherche et responsable de l'unité)
***Which of the following defines your laboratory? Check all that apply:**	EPIC

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
0		0	0
Direct diagnostic tests		Nationally	Internationally
Histologie	Yes	460	18
Cytologie	Yes	83	0
PCR conventionnelle	Yes	0	4
PCR temps réel multiplex 1	Yes	571	0
PCR temps réel multiplex 2	Yes	344	30
Hybridation in situ	Yes	0	0
Séquençage	Yes	0	4
Métabarcoding	No	180	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
Blocs histologiques	Histologie	0	0	7	3	CHINA (PEOPLE'S REP. OF), IRELAND, ITALY,
Lames histologiques	Histologie	0	0	4	2	IRELAND, SWEDEN,
Lames cytologiques	Cytologie	0	0	3	1	ITALY,
Photos, lames scannées	Histologie	0	0	2	2	AUSTRALIA, IRELAND,
Tissus fixés en éthanol	PCR, PCR en temps réel, séquençage	0	0	2	1	AUSTRALIA,
Suspensions d'ADN plasmidique	PCR, PCR en temps réel	0	2	8	5	FRANCE, POLAND, PORTUGAL, SPAIN, UNITED ARAB EMIRATES,

4. Did your laboratory produce vaccines?

Not applicable

5. Did your laboratory supply vaccines to WOAH Members?

TOR3: NEW PROCEDURES

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

Yes

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

Yes

Name of the new test or diagnostic method developed	Description and References (Publication, website, etc.)
Bonamia ostreae and Bonamia exitiosa detection by Taqman® Real Time Polymerase Chain Reaction	https://www.eurlmollusc. eu/content/download/137231/file/B.ostreae%26B.exitiosa%20_TaqmanRealTimePCR_editionN%C2%B01.pdf

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

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

TOR4: DIAGNOSTIC TESTING FACILITIES

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

Yes

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
CANADA	2025-04-16	Histologie	1	1
SWEDEN	2025-10-22	PCR, PCR en temps réel, séquençage	30	30
AUSTRALIA	2025-02-12	Histologie à partir de photos	13	0
SLOVENIA	2025-04-15	Histologie à partir de photos	2	0
KOREA (REP. OF)	2025-04-16	Histologie à partir de photos	9	0
IRELAND	2025-05-14	Histologie à partir de photos	2	0
ICELAND	2025-07-15	Histologie à partir de photos	14	0

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

Yes

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Name of the WOAH Member Country receiving a technical consultancy	Purpose	How the advice was provided
FRANCE	Distribution des organismes pathogènes de mollusques marins	Avis sur la détection d'agents infectieux réglementés (MDO/MRC) chez les mollusques marins en France au second semestre 2024 et premier semestre 2025
FRANCE	Etudes de cas de mortalités anormales	Expertise mortalité moules Charente Maritime et Expertise mortalité moules Groix
IRELAND	Meilleure compréhension des mortalités de moules	Partage d'information concernant les évènements de mortalité de moules en Europe
BULGARIA	Améliorer la surveillance des maladies des mollusques marins	Envoi de conseils concernant la stratégie d'échantillonnage
PORTUGAL	Améliorer le diagnostic des maladies des mollusques marins en PCR	Envoi de recommandations pour la réalisation des analyses en PCR et l'interprétation des résultats
SWEDEN	Améliorer le diagnostic des maladies des mollusques marins	Partage d'un protocole optimisé pour l'extraction d'ADN à partir de blocs de paraffine
BULGARIA	Améliorer le diagnostic des maladies des mollusques marins	Envoi de recommandations sur les bonnes pratiques en PCR pour éviter les contaminations et tester la présence d'inhibiteurs de PCR
TUNISIA UNITED ARAB EMIRATES	Améliorer le diagnostic des maladies des mollusques marins	Envoi de recommandations sur les bonnes pratiques PCR (contrôles qualité)
ITALY	Améliorer le diagnostic des maladies des mollusques marins	Partage des performances des essais PCR en temps réel recommandés
SWEDEN	Améliorer le diagnostic des maladies des mollusques marins	Envoi de conseils sur le protocole de séquençage à suivre pour la réalisation d'analyses confirmatoires

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
Evaluer l'effet du pooling sur les performances de la PCR en temps réel	1 year	Evaluate effect of pooling	Wageningen Bioveterinary Research	THE NETHERLANDS
Tester le potentiel de méthodes de détection de B. ostreae permettant de distinguer les parasites vivants	3 mois	Distinguer les parasites vivants des parasites inactivés	DTU	DENMARK

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:
Dans le cadre des activités du Laboratoire de Référence de l'Union Européenne pour les maladies des mollusques, notre laboratoire collecte annuellement les données épidémiologiques concernant les maladies des mollusques à l'échelle européenne

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

Yes

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

Dans le cadre des activités du Laboratoire de Référence de l'Union Européenne pour les maladies des mollusques, notre laboratoire collecte annuellement les données épidémiologiques concernant les maladies des mollusques à l'échelle européenne

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:

14

Arzul Isabelle, Lecadet Cyrielle, Canier Lydie, Chollet Bruno, Serpin Delphine, de Montaudouin Xavier (2026). Exploring the environmental distribution of the oyster parasite Haplosporidium costale. Journal Of Invertebrate Pathology. 214. 108462 (9p.). https://doi.org/10.1016/j.jip.2025.108462

Battistel Clementine, Mouren Jean Christophe, Morga Benjamin, Pelletier Camille, Canier Lydie, Garcia Celine, Arzul Isabelle, Pihan Yaelle, Leroi Laura, Chevignon Germain, Durand Patrick Guido, Jacquot Maude (2025). MoPSeq-DB: a user-friendly web application for genomic data management and analysis of marine mollusc pathogens. Database-the Journal Of Biological Databases And Curation. 2025. baaf080 (11p.). https://doi.org/10.1093/database/baaf080,

Caill-Milly Nathalie, Sanchez Florence, Lissardy Muriel, Bru Noëlle, Kermorvant Claire, de Montaudouin Xavier, Lapègue Sylvie, Riquet Florentine, Bouché Ludovic, D'Hardivillé Céline, Lagarde Franck, Chambouvet Aurélie, Mayot Nicolas, Dauvin Jean-Claude, Pezy Jean-Philippe, Basuyaux Olivier, Guéguen Anthony, Weiller Yohan, Arzul Isabelle, Paillard Christine, Carter Caitriona (2025). Manila clam (Ruditapes philippinarum) in France: Fishing activity, governance and present knowledge challenges regarding its biology and ecology. Estuarine Coastal And Shelf Science. 317. 109206 (16p.). https://doi.org/10.1016/j.ecss.2025.109206

Dotto-Maurel Aurelie, Le Luyer Jeremy, Faury Nicole, Dégremont Lionel, Tragin Margot, Renault Tristan, Morga Benjamin, Chevignon Germain (2025). Dynamics of the transcriptomic landscape of OsHV-1 replication in haemocytes of the Pacific oyster (Magallana gigas). Journal Of General Virology. 106 (12). 002187 (17p.). https://doi.org/10.1099/jgv.0.002187

Dotto-Maurel Aurelie, Arzul Isabelle, Morga Benjamin, Chevignon Germain (2025). Herpesviruses: overview of systematics, genomic complexity and life cycle. Virology Journal. 22 (1). 155 (27p.). https://doi.org/10.1186/s12985-025-02779-7

Hooper Chantelle, Serpin Delphine, Arzul Isabelle, Canier Lydie, Bøgwald Mats, Mortensen Stein, Aranguren Raquel, Figueras Antonio, Ward Georgia M., Bass David (2025). Full ribosomal RNA gene arrays confirm Marteilia refringens sensu stricto and Marteilia pararefringens as separate species, and assess the validity of current diagnostic regions. Parasitology. INPRESS. https://doi.org/10.1017/S0031182025100796

Kim Seung-Hyeon, Long Jinxia, Song Tae-Sung, Lee Donghyun, Kim Hyoun Joong, Jeon Hyung-Bae, Chen Yu, Udayantha H.M.V., Lee Hye-Mi, Arzul Isabelle, Lane Henry S., Bathige S.D.N.K., Park Kyung-Il (2026). First report of Bonamia ostreae in wild flat oysters (Ostrea denselamellosa) from the west coast of Korea: Molecular and histopathological confirmation. Journal Of Invertebrate Pathology. 214. 108489 (8p.). https://doi.org/10.1016/j.jip.2025.108489

Kluger Lotta Clara, Karstens Svenja, Lopes Ana Faria, Kuhn Annegret, Arzul Isabelle, Riekhof Marie-Catherine (2025). Marine diseases as a threat to society: Adopting and advancing the UNDRR risk framework. Ocean & Coastal Management. 266. 107640 (13p.). https://doi.org/10.1016/j.ocecoaman.2025.107640

Koesling Dominik, Kluger Lotta Clara, Pettan-Brewer Christina, Bozzaro Claudia, Lehnert Kristina, Blenckner Thorsten, Moreira Amy Borges, Maia-Filho Luiz Flavio Arreguy, Thakur Krishna, Peixoto Raquel, Fleming Lora, Buse Christopher, Kuhn Annegret, Visbeck Martin, Arzul Isabelle, Voss Ruediger, Rabinowitz Peter, Saksida Sonja, Do Valle Rodrigo Del Rio, Riekhof Marie-Catherine (2025). Stop neglecting the blue! The relevance of One Ocean Health for the planet we want. Cabi One Health. 4 (1). 0024 (3p.). https://doi.org/10.1079/cabionehealth.2025.0024

Munusamy Ajithkumar, Dégremont Lionel, Garcia Celine, Ledu Christophe, Benabdelmouna Abdellah (2025). Response to selection for cytogenetic status and their relationship with mortality in Mytilus edulis and Mytilus galloprovincialis in France. Aquaculture. 597. 741912 (12p.). https://doi.org/10.1016/j.aquaculture.2024.741912

Munusamy Ajithkumar, D'ambrosio Jonathan, Travers Agnes, Morvezen Romain, Dégremont Lionel (2025). Genomic Selection for Resistance to One Pathogenic Strain of Vibrio Splendidus in Blue Mussel Mytilus Edulis. Frontiers In Genetics. 15. 1487807 (15p.). https://doi.org/10.3389/fgene.2024.1487807

Pelletier Camille, Chevignon Germain, Faury Nicole, Arzul Isabelle, Garcia Celine, Chollet Bruno, Renault Tristan, Morga Benjamin, Jacquot Maude (2025). Phylogenomic Evidence for Host Specialization and Genetic Divergence in Oshv-1 Infecting Magallana Gigas and Ostrea Edulis. Infection Genetics And Evolution. 134. 105803 (18p.). https://doi.org/10.1016/j.meegid.2025.105803

Pelletier Camille, Faury Nicole, Mege Mickael, Degremont Lionel, Hattinguais Maele, Vidal Dupiol Jeremie, Chevignon Germain, Jacquot Maude, Morga Benjamin (2025). Experimentally mimicking 30 years of Magallana gigas infections with the OsHV-1 virus reveals evolution through positive selection. bioRxiv. INPRESS. https://doi.org/10.1101/2025.02.07.637049,

Wegner K. Mathias, Morga Benjamin, Guillou Laure, Strittmatter Martina, Lecadet Cyrielle, Travers Agnes, Tourbiez Delphine, Gervais Ophelie, Arzul Isabelle (2025). Prokaryotic microbiota outperform eukaryotic microbiota in differentiating between infection states of iconic diseases of two commercial oyster species. Aquaculture. 594. 741363 (14p.). https://doi.org/10.1016/j.aquaculture.2024.741363

b) International conferences:

10

10 présentations= 5 conférences internationales

Céline Garcia, Bruno Chollet, Antoine Durand, Isabelle Arzul, Lydie Canier, Delphine Serpin, Mathilde Noyer, Aurélie Nadeau, Florentine Riquet, Health situation of clam populations in France: a 20-year synthesis, International Manila and European Clams Conference - SYMPA 2025. September 8-10 2025, Arcachon, France

Antoine Durand, Bruno Chollet, Isabelle Arzul, Céline Garcia, Florentine Riquet, Unveiling Perkinsus olsenii and P. chesapeaki across their French distribution using a touch of ecology and genetics, International Manila and European Clams Conference - SYMPA 2025. September 8-10 2025, Arcachon, France –(Poster)

Isabelle Arzul, Cyrielle Lecadet, Bruno Chollet, Emilien Pousse, Justine Castrec, Arnaud Huvet, Ika Paul-Pont, Carole Di Poi, Exploring experimentally the impact of climate change and plastic pollution on the dynamics of bonamiosis in the native European oyster Ostrea edulis, EAFP2025 – 22nd International Conference on Diseases of Fish and Shellfish. 31st August- 5th September 2025, Heraklion, Greece

Canier Lydie, Chollet Bruno, Serpin Delphine, Noyer Mathilde, Nadeau Aurelie, Lecadet Cyrielle, Jacquot Maude, Chevignon Germain, Garcia Celine, Arzul Isabelle. EURL For mollusc diseases: 2024 Activities and perspectives. Annual Meeting of NRLs for mollusc diseases. 17 -18 March 2025 at distance.

Canier Lydie, Chollet Bruno, Arzul Isabelle (2025). 2024 Inter Laboratory Comparison tests in histo-cytology. Annual Meeting of NRLs for mollusc diseases. 17 -18 March 2025 at distance.

Céline Garcia, Delphine Serpin, Bruno Chollet, Isabelle Arzul, Investigation of mortality events affecting Mimachlamys varia in France, EAFP2025 – 22nd International Conference on Diseases of Fish and Shellfish. 31st August- 5th September 2025, Heraklion, Greece

Isabelle Arzul, Cyrielle Lecadet, Lydie Canier, Germain Chevignon, Joëlle Serghine, S. Parnaudeau, Cyril Noël, Raffaele Siano, Potential of eDNA approaches for the monitoring of marine bivalve parasites: example of the ROME project, EAFP2025 – 22nd International Conference on Diseases of Fish and Shellfish. 31st August- 5th September 2025, Heraklion, Greece

Isabelle Arzul, Cyrielle Lecadet, Bruno Chollet, Emilien Pousse, Justine Castrec, Arnaud Huvet, Ika Paul-Pont, Carole Di Poi, Climate change, plastics and Bonamia ostreae dynamics in Ostrea edulis, 24th-28th October, 2025, NORA6, Carthagène, Espagne*

Jules Trillaud, Coralie Lupo, Benjamin Morga, Nicole Faury, Bruno Petton, Isabelle Arzul, Fabrice Pernet, Maude Jacquot, Understanding OsHV-1 µVar transmission dynamics in Pacific oysters through a mechanistic and stochastic SWEIRD Model, MICROBES 2025, 24th-29th September 2025, Bordeaux, France*

Moreau Yannis, Chevignon Germain, Jacquot Maude, Garcia Celine, Canier Lydie, Travers Agnes, Tourbiez Delphine (2025). Evaluation and improvement of diagnostic methods for the detection and identification of the main Vibrio strains pathogenic to marine molluscs. Réunion annuelle des laboratoires agréés et reconnus. Annual Meeting of NRLs for mollusc diseases. 17 -18 March 2025 at distance.

c) National conferences:

4

4 présentations= 3 conférences ou séiminaires nationaux

Garcia Celine, Canier Lydie, Arzul Isabelle (2025). Panorama des organismes pathogènes de moules. Conseil de filière coquillages. 24 25 mars 2025, Nantes.

Garcia Celine, Serpin Delphine, Chollet Bruno, Noyer Mathilde, Bruneau Audrey, Guesdon Stephane, Gueux Aurore, Le Fur Ines, Piraud Aude, Pepin Jean-Francois, Arzul Isabelle (2025). Investigation of mortality events affecting Mimachlamys varia in « Pertuis charentais », France. Réunion annuelle des laboratoires agréés et reconnus. 20 mars 2025, distanciel, La Tremblade.*

Garcia Céline et Arzul Isabelle (2025) Dynamiques des organismes pathogènes et impact sur les huîtres et les palourdes. Rencontres conhylicoles. 7 avril 2025 , Arcachon

Arzul Isabelle 2025 . Le « Manuel VIVALDI » : de l'approche de co-construction à des recommandations de gestion des maladies et de biosécurité ? Rencontres conhylicoles. 7 avril 2025 , Arcachon

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

8

2 Divers

Arzul Isabelle (2025). Les bivalves, sentinelles des écosystèmes côtiers. Sesame : Sciences et sociétés, alimentation, mondes agricoles et environnement, 18, 57-59. https://archimer.ifremer.fr/doc/00997/110871/

Ifremer, Unité Adaptation et Santé des Invertébrés Marins (ASIM), Ifremer, Direction de la communication (DCOM) (2025). Les agents pathogènes affectant les mollusques marins. Fiches pédagogiques . https://archimer.ifremer.fr/doc/00439/55015/

4 Rapports

Canier Lydie, Garcia Celine, Arzul Isabelle (2025). Report of the 2025 Annual Meeting of National Reference Laboratories for Mollusc Diseases. Nantes, France, 17-18th of March 2025.

Canier Lydie, Noyer Mathilde, Nadeau Aurelie, Garcia Celine, Arzul Isabelle (2025). Report of the Comparison of analytical performances of 3 real-time PCR assays for the detection of Perkinsus marinus.

Garcia Celine, Chollet Bruno, Serpin Delphine, Noyer Mathilde, Nadeau Aurelie, Canier Lydie, Moreau Yannis, Betto Veronique, Tourbiez Delphine, Jacquot Maude, Chevignon Germain, Castinel Jade, Morga Benjamin, Arzul Isabelle (2025). Rapport annuel du Laboratoire National de Référence des maladies des mollusques marins. Année 2024. Ref. RBE/ASIM/2024. Ifremer.

ICES (2025). Working Group on Pathology and Diseases of Marine Organisms (WGPDMO). ICES Scientific Reports/Rapports scientifiques du CIEM, 7(78), 39pp.

https://doi.org/10.17895/ices.pub.29413142. https://archimer.ifremer.fr/doc/00966/107828/

2 Sites internet
EU Reference Laboratory for diseases of molluscs
https://www.eurl-mollusc.eu/
Unité Adaptation et Santé des Invertébrés Marins
https://asim.ifremer.fr/

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: 1

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
A	KOREA (REP. OF)	2
C	AUSTRIA	1
C	FRANCE	1
C	MONTENEGRO	1
C	CROATIA	1
C	BULGARIA	1
C	SWEDEN	1
D	THE NETHERLANDS	1

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
NF EN ISO/IEC 17025 (accréditation)	1-2160.pdf	1-2160.pdf
ISO 9001 (certification)	37849-certificat-2024.pdf	37849-certificat-2024.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Histologie pour la détection de parasites des genres Bonamia, Marteilia, Perkinsus et Mikrocytos	COFRAC
PCR pour la détection de Bonamia ostreae, B. exitiosa, Maryeilia refringens, Perkinsus marinus et Mikrocytos mackini	COFRAC

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

No

We do not have measures specific against the pathogen and the disease concerned but we have general measures in place against mollusc diseases

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. Are you a member of a network of 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)

No other laboratory designated as reference laboratory for the same pathogen

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
Tester la compétence des laboratoires pour la détection en PCR des parasites Bonamia ostreae, B. exitiosa	Organisateur	17		BULGARIA, CROATIA, DENMARK, FRANCE, GERMANY, GREECE, IRELAND, ITALY, LITHUANIA, MONTENEGRO, NORWAY, POLAND, PORTUGAL, ROMANIA, SPAIN, SWEDEN, THE NETHERLANDS, TURKEY,
Tester la compétence des laboratoires pour la détection en histologie de certaines maladies des mollusques marins dont les infections à Bonamia sp.	Organisateur	21		BULGARIA, CANADA, CROATIA, DENMARK, FRANCE, GERMANY, GREECE, ICELAND, IRELAND, ITALY, LITHUANIA, MONTENEGRO, NORWAY, POLAND, PORTUGAL, ROMANIA, SPAIN, SWEDEN, THE NETHERLANDS, TURKEY, UNITED KINGDOM,

TOR12: EXPERT CONSULTANTS

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

Yes

Kind of consultancy	Location	Subject (facultative)
Révision de deux Chapitres du manuel aquatique	à distance	Révision des chapitres sur Perkinsus marinus et la valisation des essais diagnotsiques

29. Additional comments regarding your report:

No