

WOAH Reference Laboratory Reports Activities 2023

Activities in 2023

This report has been submitted : 14 juin 2024 15:34

Laboratory Information

Name of disease (or topic) for which you are a designated WOAHO Reference Laboratory:	Infection à Bonamia exitiosa, Bonamia ostreae
Address of laboratory:	Adaptation et Santé des Invertébrés Marins (ASIM) Ifremer 17390 La Tremblade FRANCE
Tel.:	+33 5 46.76.26.10
E-mail address:	iarzul@ifremer.fr; Isabelle.Arzul@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 WOAHO 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 WOAHO Manual (Yes/No)	Total number of test performed last year	
		Nationally	Internationally
Indirect diagnostic tests			
0		0	0
Direct diagnostic tests			
Histologie		646	50
Cytologie		30	5
PCR conventionnelle		9	0
PCR en temps réel Multiplex 1		471	0
PCR en temps réel Multiplex 2		3	0
Hybridation in situ		109	11
Séquençage		0	0

TOR2: REFERENCE MATERIAL

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

No

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

Yes

TYPE OF REAGENT AVAILABLE	RELATED DIAGNOSTIC TEST	PRODUCED/ PROVIDE	AMOUNT SUPPLIED	AMOUNT SUPPLIED INTERNATIONALLY	NO. OF RECIPIENT WOAHO MEMBER	COUNTRY OF
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			NATIONALLY (ML, MG)	(ML, MG)	COUNTRIES	RECIPIENTS
Lames histologiques	Histologie	0	31	0	1	FRANCE,
Tissus fixés en éthanol	PCR, PCR en temps réel, séquençage	0	0	6	17	BULGARIA, CROATIA, DENMARK, FRANCE, GERMANY, GREECE, ICELAND, IRELAND, ITALY, MONTENEGRO, NORWAY, POLAND, ROMANIA, SPAIN, SWEDEN, THE NETHERLANDS, TURKEY,
Suspensions d'ADN génomique	PCR, PCR en temps réel, séquençage	0	0	24	17	BULGARIA, CROATIA, DENMARK, FRANCE, GERMANY, GREECE, ICELAND, IRELAND, ITALY, MONTENEGRO, NORWAY, POLAND, ROMANIA, SPAIN, SWEDEN, THE NETHERLANDS, TURKEY,
Suspensions d'ADN plasmidique	PCR, PCR en temps réel	0	0	4	1	IRELAND,
Autres (Lames scannées, photos...)	Histologie	0	1	4	2	FRANCE, UNITED STATES OF AMERICA,

4. Did your laboratory produce vaccines?

Not applicable

5. Did your laboratory supply vaccines to WOAHA Members?

Not applicable

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 WOAHA 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.eurilmollusc.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?

No

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

No

TOR4: DIAGNOSTIC TESTING FACILITIES

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

Yes

NAME OF WOAHA 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

IRELAND	2023-04-20	Histologie	30	0
CROATIA	2023-06-22	Histologie	11	11
IRELAND	2023-12-11	Histologie	9	0

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

Yes

NAME OF THE WOA MEMBER COUNTRY RECEIVING A TECHNICAL CONSULTANCY	PURPOSE	HOW THE ADVICE WAS PROVIDED
FRANCE	Maintien de l'accréditation en histologie pour la détection d'organismes pathogènes de mollusques marins	Renseignement sur l'habilitation des techniciens et analystes en histologie
FRANCE	Surveillance des coques	Envoi d'information sur les organismes pathogènes pouvant être présents chez les coques
FRANCE	Améliorer le diagnostic en cytologie	Envoi de conseil concernant la réalisation d'apposition de tissus
FRANCE	Améliorer le diagnostic des maladies des mollusques marins	Envoi de la liste des méthodes officielles ainsi que les procédures
FRANCE	Améliorer le diagnostic des maladies des mollusques marins	Demande de renseignement sur le protocole pour rechercher la présence éventuelle d'inhibiteurs dans les réactions de PCR temps réel
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 2022 et premier semestre 2023
SWEDEN	Améliorer la surveillance des infections à <i>Bonamia ostreae</i>	Conseils sur la stratégie d'échantillonnage à réaliser
LITHUANIA	Améliorer le diagnostic des maladies des mollusques marins	Fourniture d'un protocole de coloration des lames en histologie
BULGARIA	Améliorer le diagnostic des maladies des mollusques marins en cytologie	Avis sur des images en cytologie et conseils pour améliorer la préparation des lames
BULGARIA	Aide à l'interprétation de résultats	Conseil pour l'interprétation des résultats en PCR
BULGARIA	Améliorer le diagnostic des maladies réglementées en PCR	Recommandation sur les bonnes pratiques pour la réalisation d'analyse en PCR

TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

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

No

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

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:

10

European Food Safety Authority (efsa) , Kero Linnea Lindgren, Alemu Selam, Alvarez Julio, Arzul Isabelle, Aznar Inma, Caumette Elea Bailly, Bicout Dominique, Drewe Julian Ashley, Dharmaveer Shetty, Bastuji Bruno Garin, Kohnle Lisa, Meroc Estelle, Chueca Miguel Ángel Miranda, Olesen Niels Jørgen, Roberts Helen, Nielsen Søren Saxmose, Schiøtt Morten, Sindre Helen, Stone David, Rusina Alessia, Vendramin Niccolo, Dhollander Sofie (2023). Extensive literature review on vectors and reservoirs of AHL-listed pathogens of crustaceans. *EFSA Supporting Publications*, 20(8), 8122E (12p.). Publisher's official version : <https://doi.org/10.2903/sp.efsa.2023.EN-8122> , Open Access version : <https://archimer.ifremer.fr/doc/00876/98761/>

Efsa Panel On Animal Health And Welfare (ahaw) , Nielsen Søren Saxmose, Alvarez Julio, Bicout Dominique, Calistri Paolo, Canali Elisabetta, Drewe Julian Ashley, Garin-bastuji Bruno, Gonzales Rojas José Louis, Smith Christian Gortazar, Herskin Mette, Michel Virginie, Miranda Chueca Miguel Angel, Padalino Barbara, Roberts Helen, Spoolder Hans, Ståhl Karl, Velarde Antonio, Viltrop Arvo, Winckler Christoph, Arzul Isabelle, Dharmaveer Shetty, Olesen Niels Jørgen, Schiøtt Morten, Sindre Hilde, Stone David, Vendramin Niccolò, Antoniou Sotiria-eleni, Dhollander Sofie, Karagianni Anna Eleonora, Kero Linnea Lindgren, Gnocchi Marzia, Aznar Inma, Barizzone Fulvio, Munoz Guajardo Irene Pilar, Roberts Helen (2023). Species which may act as vectors or reservoirs of diseases covered by the Animal Health Law: Listed pathogens of molluscs. *EFSA Journal*, 21(8), e08173 (34p.). Publisher's official version : <https://doi.org/10.2903/j.efsa.2023.8173> , Open Access version : <https://archimer.ifremer.fr/doc/00876/98758/>

Efsa Panel On Animal Health And Welfare (ahaw) , Nielsen Søren Saxmose, Alvarez Julio, Bicout Dominique, Calistri Paolo, Canali Elisabetta, Drewe Julian Ashley, Garin-bastuji Bruno, Gonzales Rojas José Louis, Smith Christian Gortazar, Herskin Mette, Michel Virginie, Miranda Chueca Miguel Angel, Padalino Barbara, Spoolder Hans, Ståhl Karl, Velarde Antonio, Viltrop Arvo, Winckler Christoph, Arzul Isabelle, Dharmaveer Shetty, Olesen Niels Jørgen, Schiøtt Morten, Sindre Hilde, Stone David, Vendramin Niccolò, Alemu Selam, Antoniou Sotiria-eleni, Aznar Inma, Barizzone Fulvio, Dhollander Sofie, Gnocchi Marzia, Karagianni Anna Eleonora, Kero Linnea Lindgren, Munoz Guajardo Irene Pilar, Roberts Helen (2023). Species which may act as vectors or reservoirs of diseases covered by the Animal Health Law: Listed pathogens of crustaceans. *EFSA Journal*, 21(8), e08172 (33p.). Publisher's official version : <https://doi.org/10.2903/j.efsa.2023.8172> , Open Access version : <https://archimer.ifremer.fr/doc/00876/98757/>

Efsa Panel On Animal Health And Welfare (ahaw) , Nielsen Søren Saxmose, Alvarez Julio, Bicout Dominique, Calistri Paolo, Canali Elisabetta, Drewe Julian Ashley, Garin-bastuji Bruno, Gonzales Rojas José Louis, Smith Christian Gortazar, Herskin Mette, Michel Virginie, Miranda Chueca Miguel Angel, Padalino Barbara, Spoolder Hans, Ståhl Karl, Velarde Antonio, Viltrop Arvo, Winckler Christoph, Arzul Isabelle, Dharmaveer Shetty, Olesen Niels Jørgen, Schiøtt Morten, Sindre Hilde, Stone David, Vendramin Niccolò, Aires Mariana, Asensio Inmaculada Aznar, Antoniou Sotiria-eleni, Barizzone Fulvio, Dhollander Sofie, Gnocchi Marzia, Karagianni Anna Eleonora, Kero Linnea Lindgren, Munoz Guajardo Irene Pilar, Rusina Alessia, Roberts Helen (2023). Species which may act as vectors or reservoirs of diseases covered by the Animal Health Law: Listed pathogens of fish. *EFSA Journal*, 21(8), e08174 (45p.). Publisher's official version : <https://doi.org/10.2903/j.efsa.2023.8174> , Open Access version : <https://archimer.ifremer.fr/doc/00876/98756/>

European Food Safety Authority (efsa) , Gnocchi Marzia, Aires Mariana, Alvarez Julio, Arzul Isabelle, Aznar Inma, Bicout Dominique, Carmosino Ilaria, Drewe Julian Ashley, Dharmaveer Shetty, Bastuji Bruno Garin, Karagianni Anna Eleonora, Chueca Miguel Ángel Miranda, Olesen Niels Jørgen, Palaiokostas Christos, Roberts Helen, Nielsen Søren Saxmose, Schiøtt Morten, Sindre Helen, Stone David, Rusina Alessia, Vendramin Niccolo, Dhollander Sofie (2023). Extensive literature review on vectors and reservoirs of AHL-listed pathogens of fish. *EFSA Supporting Publications*, 20(8), 8123E (22p.). Publisher's official version : <https://doi.org/10.2903/sp.efsa.2023.EN-8123> , Open Access version : <https://archimer.ifremer.fr/doc/00876/98755/>

Mérou Nicolas, Lecadet Cyrielle, Ubertini Martin, Pouvreau Stephane, Arzul Isabelle (2023). Environmental distribution and seasonal dynamics of *Marteilia refringens* and *Bonamia ostreae*, two protozoan parasites of the European flat oyster, *Ostrea edulis*. *Frontiers In Cellular And Infection Microbiology*, 13, 1154484 (14p.). Publisher's official version : <https://doi.org/10.3389/fcimb.2023.1154484> , Open Access version : <https://archimer.ifremer.fr/doc/00842/95355/>

Oyanedel Daniel, Lagorce Arnaud, Bruto Maxime, Haffner Philippe, Morot Amandine, Dorant Yann, de La Forest Divonne Sebastien, Delavat François, Inguibert Nicolas, Montagnani Caroline, Morga Benjamin, Toulza Eve, Chaparro Cristian, Escoubas Jean-Michel, Labreuche Yannick, Gueguen Yannick, Vidal Dupiol Jeremie, de Lorgé Julien, Petton Bruno, Degremont Lionel, Tourbiez Delphine, Pimparé Léa-Lou, Leroy Marc, Romatif Oceane, Pouzadoux Juliette, Mitta Guillaume, Roux Frédérique Le, Charrière Guillaume M., Travers Agnes, Destoumieux-Garçon Delphine (2023). Cooperation and cheating orchestrate *Vibrio* assemblages and polymicrobial synergy in oysters infected with OsHV-1 virus. *Proceedings Of The National Academy Of Sciences Of The United States Of America*, 120(40), e23051951 (12p.). Publisher's official version : <https://doi.org/10.1073/pnas.2305195120> , Open Access version : <https://archimer.ifremer.fr/doc/00840/95232/>

Pouvreau Stephane, Lapègue Sylvie, Arzul Isabelle, Boudry Pierre (2023). Fifty years of research to counter the decline of the European flat oyster (*Ostrea edulis*): a review of French achievements and prospects for the restoration of remaining beds and revival of aquaculture production. *Aquatic Living Resources*, 36, 13 (18p.). Publisher's official version : <https://doi.org/10.1051/alr/2023006> , Open Access version : <https://archimer.ifremer.fr/doc/00836/94781/>

Clerissi Camille, Luo Xing, Lucasson Aude, Mortaza Shogofa, de Lorgé Julien, Toulza Eve, Petton Bruno, Escoubas Jean-Michel, Degremont Lionel, Gueguen Yannick,

Destoumieux Garzon Delphine, Jacq Annick, Mitta Guillaume (2023). A core of functional complementary bacteria infects oysters in Pacific Oyster Mortality Syndrome. *Animal Microbiome*, 5(1), 26 (16p.). Publisher's official version : <https://doi.org/10.1186/s42523-023-00246-8>, Open Access version : <https://archimer.ifremer.fr/doc/00835/94708/>

Mesnil Aurelie, Jacquot Maude, Garcia Celine, Tourbiez Delphine, Canier Lydie, Bidois Audrey, Dégremont Lionel, Cheslett Deborah, Geary Michelle, Vetri Alessia, Roque Ana, Furones Dolors, Garden Alison, Orozova Petya, Arzul Isabelle, Sicard Mathieu, Charriere Guillaume, Destoumieux Garzon Delphine, Travers Agnes (2023). Emergence and clonal expansion of *Vibrio aestuarianus* lineages pathogenic for oysters in Europe. *Molecular Ecology*, 32(11), 2869-2883. Publisher's official version : <https://doi.org/10.1111/mec.16910>, Open Access version : <https://archimer.ifremer.fr/doc/00823/93481/>

b) International conferences:

17

17 présentations= 7 conférences

Garcia Celine, Tourbiez Delphine, Mesnil Aurelie, Jacquot Maude, Degremont Lionel, Hocquet Juliette, Chollet Bruno, Serpin Delphine, Nadeau Aurelie, Noyer Mathilde, Girardin Frederic, Devreker David, Meirland Antoine, Ricard Morgane, Rocroy Mélanie, Travers Agnes (2023). Dynamics of *Vibrio aestuarianus* in cockles in wild beds of Hauts-de-France. 2023 Annual Meeting of National Reference Laboratories for Mollusc Diseases. 3-5th of May 2023, La Tremblade, France.

Chollet Bruno, Canier Lydie, Arzul Isabelle (2023). Specificity of ISH probes targeting *Marteilia* and *Bonamia* parasites. 2023 Annual Meeting of National Reference Laboratories for Mollusc Diseases, La Tremblade, France, 3-5th of May 2023.

Canier Lydie, Nadeau Aurelie, Chollet Bruno, Arzul Isabelle (2023). Inter Laboratory Comparison tests. 2022-ILC-01 & 2023-ILC-01. 2023 Annual Meeting of National Reference Laboratories for Mollusc Diseases, La Tremblade, France, 3-5th of May 2023.

Canier Lydie, Chollet Bruno, Serpin Delphine, Noyer Mathilde, Nadeau Aurelie, Lecadet Cyrielle, Jacquot Maude, Chevignon Germain, Garcia Celine, Arzul Isabelle (2023). EURL for mollusc diseases : 2022 activities & perspectives. 2023 Annual Meeting of National Reference Laboratories for Mollusc Diseases, La Tremblade, France, 3-5th of May 2023.

Canier Lydie, Chollet Bruno, Nadeau Aurelie, Noyer Mathilde, Garcia Celine, Arzul Isabelle (2023). Workshop Mollusc Sampling And Processing In The Context Of Mortality Events. EURL Annual Meeting of National Reference Laboratories for Mollusc Diseases. 3-5 Mai 2023, La Tremblade.

Arzul Isabelle, Lecadet Cyrielle, Marzari Adeline, Chollet Bruno, Merou Nicolas, Canier Lydie (2023). Evaluating the potential of eDNA-based approach to monitor flat oyster parasites. NORA 5 "Scaling-up European Oyster Reef Restoration". 6- 8 November 2023, Middelburg, The Netherlands.

Arzul Isabelle, Lecadet Cyrielle, Chollet Bruno, Merou Nicolas, Canier Lydie (2023). Using eDNA-based approach to improve knowledge of bivalve parasite life cycles. EAFF2023 - 21st International Conference on Diseases of Fish and Shellfish. 11th-14th September 2023, Aberdeen, Scotland.

Arzul Isabelle, Lecadet Cyrielle, Canier Lydie (2023). eDNA-based methods to detect bivalve pathogens. Annual Meeting of NRLs for Mollusc Diseases. 3-4 May 2023, La Tremblade, France.

Siano Raffaele, Arzul Isabelle, Gourmelon Michele, Le Guyader Soizick, Durand Patrick, The Rome Consortium (2023). Coastal microbiomes in estuarine ecosystems of France: the eDNA network ROME. ASC 2023 - ICES Annual Science Conference 2023. 11-14 September 2023 Bilbao, Spain.

Canier Lydie, Arzul Isabelle, Garcia Celine, Chollet Bruno, Serpin Delphine, Noyer Mathilde, Nadeau Aurelie (2023). Surveillance and diagnosis of mollusc diseases. From oysters to insects, what we can learn. Insect Doctors and Stakeholder Symposium. May 25th 2023, Tours.

Siano Raffaele, Arzul Isabelle, Gourmelon Michele, Le Guyader Soizick, Durand Patrick, Serghine Joelle, Parnaudeau Sylvain, Quere Julien, Schmitt Sophie, Françoise Sylvaine, Mary Charlotte, Hernandez Farinas Tania, Terre Terrillon Aouregan, Lebrun Luc, Chomérat Nicolas, Seugnet Jean-Luc, Pepin Jean-François, Felix Christine, Serais Ophélie, Gobet Angélique, Chevalier Mathieu, Chevignon Germain, Lecadet Cyrielle, Morga Benjamin, Piquet Jean-Come, Lemoine Maud, Leroi Laura, Noel Cyril (2023). Coastal microbiomes in riverine ecosystems of the French coastline: the ROME project. ISEEMP2022 - International Symposium on Ecology and Evolution of Marine Parasites and Diseases. 15-18 November 2022.

Siano Raffaele, Arzul Isabelle, Gourmelon Michele, Le Guyader Soizick, Durand Patrick, Serghine Joelle, Parnaudeau Sylvain, Quere Julien, Schmitt Sophie, Françoise Sylvaine, Mary Charlotte, Hernandez Farinas Tania, Terre Terrillon Aouregan, Lebrun Luc, Chomérat Nicolas, Seugnet Jean-Luc, Pepin Jean-François, Felix Christine, Serais Ophélie, Gobet Angélique, Chevalier Mathieu, Chevignon Germain, Lecadet Cyrielle, Morga Benjamin, Piquet Jean-Come, Lemoine Maud, Leroi Laura, Noel Cyril (2023). Coastal microbiomes in estuarine ecosystems of France: the eDNA network ROME. ASLO - Aquatic Sciences Meeting 2023 "Resilience and Recovery in Aquatic Systems". 4-9 June 2023, Palma de Mallorca, Spain.

Garcia Celine, Degremont Lionel, Tourbiez Delphine, Kalaidji Samia, Guesdon Stéphane, Maurouard Elise, Girardin Frederic, Lupo Coralie, Arzul Isabelle, Treilles Michaël (2023). Preliminary Study On Potential Impact Of Antibiotic Use In Oyster Hatchery. 21st EAFF International Conference on Diseases of Fish and Shellfish. 11th-14th September 2023, Aberdeen, UK.

Garcia Celine, Mesnil Aurelie, Jacquot Maude, Tourbiez Delphine, Degremont Lionel, Hocquet Juliette, Chollet Bruno, Serpin Delphine, Nadeau Aurelie, Noyer Mathilde, Girardin Frederic, Meirland Antoine, Ricard Morgane, Rocroy Mélanie, Travers Agnes (2023). Dynamics of *Vibrio aestuarianus* in wild cockle beds of Hauts-de-France. 21st EAFF International Conference on Diseases of Fish and Shellfish. 11th-14th September 2023, Aberdeen, UK.

Treilles Michaël, Tourbiez Delphine, Duquesnel V, Lefoulgoc J, Barbeau T, Garcia Celine (2023). Adaptation of antibiotic disc diffusion method for halophilic *Vibrio*. 21st EAFP International Conference on Diseases of Fish and Shellfish. 11th-14th September 2023, Aberdeen, UK.

Canier Lydie, Chollet Bruno, Arzul Isabelle (2023). Specificity Of In Situ Hybridisation Assays Used For The Diagnosis Of Mollusc Parasites Of The Genus *Marteilia* And *Bonamia*. EAFP2023 - 21st International Conference on Diseases of Fish and Shellfish. 11th-14th September 2023, Aberdeen, Scotland.

Canier Lydie, Noyer Mathilde, Nadeau Aurelie, Serpin Delphine, Chollet Bruno, Garcia Celine, Arzul Isabelle (2023). PCR Diagnosis Of Regulated Mollusc Diseases Present In Europe. EAFP2023 - 21st International Conference on Diseases of Fish and Shellfish. 11th-14th September 2023, Aberdeen, Scotland.

c) National conferences:

8

8 communications = 8 conférences ou réunions

Arzul Isabelle (2023). Huître plate et parasites : une histoire durable. *Ostrea 2023*. 1ère édition : L'huître plate, un modèle au cœur de la transformation écologique ?. 08 septembre 2023, Brest.

Arzul Isabelle (2023). Dynamique des interactions entre parasites protozoaires et bivalves marins. Séminaire Recherche de la Société Française de Parasitologie. 13 juin 2023.

Gourmelon Michele (2023). Microbiomes dans les écosystèmes estuariens en France : ROME, le réseau d'ADN/ARN environnemental. Journées du réseau O-ADN environnemental. 29-30 Novembre 2023, Cestas.

Gourmelon Michele (2023). Microbiomes côtiers dans les écosystèmes estuariens en France : le réseau d'ADN/ARN environnemental. ROME. MICROBES 2023 - 18e Congrès National de la SFM (Société Française de Microbiologie) « Un monde à explorer ». 4-6 octobre 2023, Rennes.

Canier Lydie, Arzul Isabelle, Garcia Celine (2023). Tour d'horizon de la surveillance des maladies des coquillages. Comité de pilotage du réseau REPAMO 2023. , visioconférence, 19 avril 2023.

Munusamy Ajithkumar, Benabdelmouna Abdellah, Chevignon Germain, Degremont Lionel (2023). Investigation Of Abnormal Mass Mortality (AMM) Of Mussels In France. Colloque des doctorant.es de 2e année. Université de La Rochelle. 21 septembre 2023.

Francois Cyrille, Haure Joel (2023). Development of a clinical prognostic scale for the health state of the Pacific cupped oyster *Crassostrea gigas*. CEPA6-Tours : Colloque d'Ecophysiologie Animale, 6ème édition. 2-4 nov. 2023, Tours, France. <https://archimer.ifremer.fr/doc/00859/97091/>

Battistel Clementine, Mouren Jean Christophe, Morga Benjamin, Pelletier Camille, Canier Lydie, Garcia Celine, Arzul Isabelle, Leroi Laura, Durand Patrick, Chevignon Germain, Jacquot Maude (2023). MoPSeq-DB. Molluscs Pathogen Sequences DataBase. JOBIM 2023 - Journées Ouvertes en Biologie, Informatique et Mathématiques. 27 au 30 juin 2023, Nancy.

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

8

Book of Abstracts

Arzul Isabelle, Canier Lydie, Thieltges David, Wegner Mathias, de Montaudouin Xavier (2023). International Symposium on Ecology and Evolution of Marine Parasites & Diseases. 15th-18th of November 2022, La Rochelle, France. Book of Abstracts. <https://archimer.ifremer.fr/doc/00840/95239/>

Rapports

Canier Lydie, Noyer Mathilde, Nadeau Aurelie, Serpin Delphine, Chollet Bruno, Garcia Celine, Arzul Isabelle, Kergaravat Cedric (2023). Rapport de validation du MasterMix qPCR TaqPath® d'Applied Biosystem.

Canier Lydie, Nadeau Aurelie, Arzul Isabelle (2023). Report of the InterLaboratory Comparison test n° 2023-ILC-01.

Canier Lydie, Chollet Bruno, Arzul Isabelle (2023). Report of the InterLaboratory Comparison test n° 2022-ILC-01.

Canier Lydie, Garcia Celine, Chollet Bruno, Serpin Delphine, Noyer Mathilde, Nadeau Aurelie, Lecadet Cyrielle, Travers Agnes, Jacquot Maude, Chevignon Germain, Arzul Isabelle (2023). EURL for mollusc diseases - Technical report 2021-2022.

Canier Lydie, Garcia Celine, Chollet Bruno, Noyer Mathilde, Nadeau Aurelie, Jacquot Maude, Chevignon Germain, Arzul Isabelle (2023). Report of the 2023 Annual Meeting and 14th Technical Workshop of National Reference Laboratories for Mollusc Diseases.

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 WOAHA Members?

Yes

a) Technical visit : 1

b) Seminars : 0

c) Hands-on training courses: 1

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	KOREA (REP. OF)	2
C	FRANCE	2

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/CEI 17043 (accréditation)	1-6907.pdf	1-6907.pdf
NF EN ISO/IEC 17025 (accréditation)	1-2160.pdf	1-2160.pdf
ISO 9001 (certification)	lfremer certificat AFNOR.pdf	lfremer certificat AFNOR.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Histologie-Cytologie PCR pour la détection de <i>Bonamia ostreae</i> , <i>B. exitiosa</i> , <i>Marteilia refringens</i>	COFRAC
Organisation des essais inter-laboratoires en histo-cytologie	COFRAC

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

No

TOR9: SCIENTIFIC MEETINGS

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

No

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

No

TOR10: NETWORK WITH WOAHA REFERENCE LABORATORIES

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

Not applicable (only WOAHA Reference Laboratory designated for the disease)

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

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

25. Did you organise or participate in inter-laboratory proficiency tests with WOAHA Reference Laboratories designated for the same pathogen?

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

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

Not applicable (Only WOAHA 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 WOH Reference Laboratories for the same pathogen?

Yes

Purpose for inter-laboratory test comparisons ¹	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 histologie de certaines maladies des mollusques marins dont les infections à Bonamia sp.	Organisateur	17		BULGARIA, CROATIA, DENMARK, FRANCE, GERMANY, GREECE, ICELAND, IRELAND, ITALY, MONTENEGRO, NORWAY, POLAND, 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	Organisateur	2		FRANCE,

TOR12: EXPERT CONSULTANTS

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

Yes

KIND OF CONSULTANCY	Location	SUBJECT (FACULTATIVE)
Animation et participation à un groupe de travail	Paris, France- Juin 2023	ad hoc Group on Susceptibility of mollusc species to infection with WOH listed diseases
Animation et participation à un groupe de travail	Paris, France-Décembre 2023	ad hoc Group on Susceptibility of mollusc species to infection with WOH listed diseases

29. Additional comments regarding your report:

No