

Schedule of Accreditation



Organisation Name	Marine Institute
Trading As	
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Accreditation Standard	EN ISO/IEC 17025 T
Standard Version	2017
Date of award of accreditation	01/07/2002
Scope Classification	Biological and veterinary testing
Scope Classification	Chemical testing
Services available to the public ¹	No

¹ Refer to document on interpreting INAB Scopes of Accreditation

Sites from which accredited services are delivered		
(the detail of the accredited services delivered at each site are on the Scope of Accreditation)		
	Name	Address
1	Marine Institute Headquarters	Rinville, Oranmore, Galway

Scope of Accreditation

Marine Institute Headquarters

Biological and Veterinary Testing

Category: A

Biology/veterinary field - Tests	Test name	Technique	Matrix	Equipment	Std. reference	
802 Preparation of films on slides followed by microscopic examination with or without fixation and staining with dyes as required - .02 Microscopic examination for parasites	FHU-106 Monitoring for Gyrodactylus salaris	Microscopic identification of proteinase-K digested gyrodactylid parasites, removed from finfish fins. Range: present/absent	Fish	Binocular Stereo dissection microscope Light microscope	Laboratory SOP FHU-106. Based on OIE Manual of Diagnostic Tests for Aquatic Animals Chapter 2.3.3, in accordance with Commission Implementing decision (EU) 2021/60	
802 Preparation of films on slides followed by microscopic examination with or without fixation and staining with dyes as required - .05 Microscopic examination for constituents of animal origin	FHU-095 Screening of histology from Ostrea edulis for the presence/absence of Marteilia refringens	Preparation of stained histological slides and screening of slides for the presence or absence of the protistan parasite Marteilia refringens the causative agent of Marteiliosis (Aber disease) in the flat oyster Ostrea edulis	Molluscs (Oysters)	Binocular microscope, tissue processor, slide stainer	Laboratory SOP FHU-95 and FHU-86. Based on methods laid down in EURL diagnostic manuals and procedures. and in the OIE Manual of Diagnostic Tests for Aquatic Animals in accordance with Commission delegated Regulation (EU) 2020/689	
803 Culture of organisms in liquid or agar based culture media with visual or	MIC-006 Escherichia coli Enumeration in Molluscan Bivalve	Most probable number test for enumeration of Escherichia coli in	Fish, Shellfish and molluscs	Cultures Incubator Most probable	Laboratory SOP MIC-06. Based on ISO 16649-3 Microbiology	

instrument monitoring for growth - .01 Culture of bacteria	Shellfish	Molluscan Bivalve Shellfish		number technique for enumeration of Escherichia coli	of food and foodstuffs – Horizontal method for the enumeration of β glucuronidase-positive Escherichia coli – Part 3. Most probable number techniques using 5-bromo-4-chloro-3-inddoly- β -Dglucuronide.	
805 Detection and/or identification of bacterial, parasite, fungal and viral nucleic acids using appropriate techniques - .03 Nucleic acid amplification tests, CE marked commercial systems	MBU-004 Detection of norovirus genogroups I and II bivalve shellfish	Detection of norovirus genogroups I and II bivalve shellfish by real-time reverse transcription polymerase chain reaction (RT- PCR Instrument). Range: 100 to 2 X 10 ⁷ genome copies/g of shellfish hepatopancreas tissue	Fish, shellfish and molluscs	Real-Time PCR Instrument	Laboratory SOP MBU-4. Based on ISO 15216-1:2017	
	MBU-110 Detection of hepatitis A virus bivalve shellfish	Detection of hepatitis A virus in bivalve shellfish by real-time reverse transcription polymerase chain reaction (RT- PCR). Range: Detected/ Not detected.	Fish, shellfish and molluscs	Real-Time PCR Instrument	laboratory SOP MBU-110. Based on ISO 15216-2:2019.	
805 Detection and/or identification of bacterial, parasite, fungal and viral nucleic acids using appropriate techniques - .04 Nucleic acid amplification tests, in house developed assays	Detection of specified DNA-based pathogens using real-time Probe-based PCR (rtPCR)	Koi Herpesvirus (KHV) Renibacterium salmoninarum (BKD) Gyrodactylus salaris Ostreid herpes virus 1 (OsHV-1) Whitespot syndrome virus (WSSV) Mareilia refringens Detection by real-time Probe-based PCR (rtPCR). Range:	FinFish, Shellfish, Molluscs	Real-time PCR intrument	Laboratory SOP MBU-125 based on EURL finfish, Molluscan and Crustacea diagnostic manuals; WOH (OIE) Diagnostic manuals. Regulation (EU) 2016/429, Commission Delegated Regulation (EU) 2020/689, Commission Implementing Decision (EU) 2021/260	

		positive/negative				
	MBU-067 Detection of Infectious Salmon Anaemia in Salmonid Fish Tissue	Detection of Infectious Salmon Anaemia virus in Salmonid Tissue by real-time PCR. Range: positive/negative	Fish	Real-Time PCR Instrument	Laboratory SOP MBU-67. Based on method outlined in Snow et al., 2006. Developments in Biologicals (Basel) 126, 133-145 and EURL diagnostic manuals and procedures in accordance with commission delegated Regulation (EU) 2020/689	
810 Culture of virus and other obligate intracellular pathogens using in vivo or in vitro techniques	FHU-065 Virological examintaion of samples for the presence of Viral Haemorrhagic Septicaemia (VHS), Infectious Haematopoietic Necrosis (IHN), Infectious Pancreatic Necrosis (IPN) and Spring Viraemia of Carp (SVC) in Finfish.	Screening Finish for VHSV, IHNV, IPNV and SVCV by cell culture. Range: positive/negative	Fish	Tissue Homogeniser Microscope, ELISA Plate Reader	Laboratory SOP FHU-65. Based on Commission delegated Regulation (EU) 2020/689 and EURL diagnostics manuals and procedures and the OIE Manual of Diagnostic Tests for Aquatic Animals Chapter 2.3.9.	
820 Miscellaneous	FHU-086 and FHU-087 Preparation and Screening of heart imprints from <i>Ostrea edulis</i> for the presence of <i>Bonamia ostreae</i>	Histological and microscopic preparation and examination of slides	Molluscs (Oysters)	Binocular microscope, downdraft, fumehood	Laboratory SOP FHU-87 and FHU-86. Based on methods laid down in EURL diagnostic manuals and procedures and in the OIE Manual of Diagnostic Tests for Aquatic Animals in accordance with Commission delegated regulation (EU) 2020/689	
	PHY-009 Phytoplankton Test Identification and enumeration of Phytoplankton	Phytoplankton Test Identification and enumeration of Phytoplankton by the	Biota: Species list: Toxic species – PSP Toxin Producers (Saxitoxins) (Also linked to fish	Utermöhl Cell counting method using Inverted light microscope	Laboratory SOP PHY-9. Based on EN15204:2007 and EU Directive 853/2004.	

		<p>Utermöhl Cell Counting Method Range: 40 cells/l upwards (see appendix 1 for details list)</p>	<p>mortalities) Alexandrium tamarense Alexandrium minutum Alexandrium ostenfeldii Alexandrium spp. Alexandrium cysts Toxic species – DSP Toxin Producers (Okadaic acid, DTX's, Pectenotoxins) Dinophysis acuminata Dinophysis acuta Dinophysis caudata Dinophysis dens Dinophysis fortii Dinophysis hastata Dinophysis miles Dinophysis mitra Dinophysis mucronata Dinophysis nasutum Dinophysis norvegica Dinophysis ovum Dinophysis parva Dinophysis pulchella Dinophysis rotundata Dinophysis sacculus Dinophysis tripos Dinophysis sp. Prorocentrum lima Prorocentrum minimum/balticum Phalacroma rapa Phalacroma spp. Toxic species. - ASP Toxin Producers (Domoic Acid) Pseudo-nitzschia delicatissima group < 3 µm Pseudo-nitzschia seriata group >3 µm</p>			
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			<p>Toxic species. – Yessotoxins, Homo- yessotoxin producers Lingulodinium polyedrum Protoceratium reticulatum Gonyaulax spinifera Dinophysis sacculus Dinophysis tripos Dinophysis sp. Prorocentrum lima Prorocentrum minimum/balticum Phalacroma rapa Phalacroma spp.</p>			
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Chemical Testing

Category: A

Chemistry Field - Tests	Test name	Analyte	Range of measurement	Matrix	Equipment/technique	Standard reference/SOP
751 Food testing - .03 Compositional analysis	CHE-052 Determination of Moisture content in Marine Biota	Moisture	Range: Moisture Content: 2.0%-90%	Fish, Shellfish and molluscs (marine biota)	Moisture content by oven determination	Laboratory SOP CHE- 52. Based on the AOAC official method for moisture in Meat, official methods of analysis of AOAC International.
752 Chemical residue testing - .01 Drugs and drug metabolites	CHE-008 Screening and Confirmatory Chemical Test of Ivermectin and Emamectin B1a and Doramectin	Ivermectin and Emamectin B1a and Doramectin	Range: Ivermectin: 0.2-300 ngg-1 Emamectin B1a: 29- 1000 ngg-1 Doramectin: 0.2-300 ngg-1	Fin Fish - skin and muscle in natural proportions	UPLC	Laboratory SOP CHE-8. Based on Laboratory developed methods for th analysis of Ivermectin and Emamectin B1a and Doramectin by UPLC
	CHE-220 CHE-220 Analysis of Antibiotics by LCMSMS (semi and full quantitative confirmatory)	Quinolones Ciprofloxacin Danofloxacin Difloxacin Enrofloxacin Flumequine Marbofloxacin Nalidixic acid Norfloxacin Oxolinic acid Sarafloxacin Sulphonamides Sulfachloropyridazine Sulfadiazine Sulfadimethoxine Sulfadoxine Sulfaguanidine Sulfamerazine Sulfamethazine Sulfamethizole Sulfamethoxazole Sulfamethoxypridazine	5-400 µg/kg 10-800 µg/kg 30-2400 µg/kg 5-400 µg/kg 60-4800 µg/kg 10-800 µg/kg 10-800 µg/kg 10-800 µg/kg 10-800 µg/kg 3-240 µg/kg 10-800 µg/kg 5-400 µg/kg 10-800 µg/kg 10-800 µg/kg 5-400 µg/kg 5-400 µg/kg 5-400 µg/kg 5-400 µg/kg 5-400 µg/kg 5-400 µg/kg 0.5-40 µg/kg	fin-fish matrices, skin and muscle in natural proportions, and prawn matrices	LCMSMS (Liquid Chromatography Mass Spectrometry)	Laboratory SOP CHE- 220. The development and validation of a multiclass LC_MS/MS procedure for the determination of veterinary drug residues in animal tissue using a QUECHERS approach. Analytica Chimica Acta 637 (2009),68-78

		<p>Sulfamonomethoxine Sulfapyridine Sulfaquinoxaline Sulfathiazole Sulfisoxazole Sulfacetamide Sulfameter Sulfamoxole Sulfisomidine Sulfatroxazole Sulfachloropyrazine Sulfaethoxypyrazine Sulfasalazine Sulfabenzamide Sulfaphenazole Tetracyclines Chlortetracycline Demeclocycline Doxycycline 4-epi-Chlortetracycline 4-epi-Oxytetracycline 4-epi-Tetracycline Oxytetracycline Tetracycline Other Trimethoprim Dapsone</p>				
	CHE-233 Analysis of Dyes by Thermo LCMSMS	<p>1. Malachite green, Crystal Violet, Victoria Blue, Leuco Crystal Violet, Leuco Malachite Green, Brilliant Green</p> <p>2. Malachite green, Crystal Violet, Leuco Crystal Violet, Leuco Malachite Green, Brilliant Green</p>	<p>1. Quantitative Range: Malachite green, Crystal Violet, Victoria Blue, Leuco Crystal Violet, Leuco Malachite Green: Brilliant Green: 0.2- 8 µg/kg</p> <p>2. Qualitative screen at detection capability</p>	<p>1. Finfish muscle and skin in natural proportions 2. Crustacean</p>	LCMSMS (Liquid Chromatography Mass Spectrometry)	Laboratory SOP CHE-233. Based on the Journal of Chromatography/A/2011 Vol 1218, NUMB 12, pages 1632-1645 with adaptations
752 Chemical residue testing - .02 Elements	CHE-032 Screening and Confirmatory Chemical test Mercury	Mercury	Range: 0.007-50 mg.kg-1 wet weight	Fish, Shellfish and molluscs (marine biota)	Cold Vapour-Atomic Fluorescence Spectrometry	Laboratory SOP CHE-32 Digestion Method. Based on Hatch and Ott, 1968. Analytical method for determination of total mercury based on manufacturers

						recommendations (PS Analytical).
	CHE-178 Screening and Confirmatory Analysis of trace metals in marine biota	As, Cd, Cu, Pb, Zn	Range: As 0.002 - 200 mg/kg ww Cd 0.002 – 200 mg/kg ww Cu 0.01 - 200 mg/kg ww Pb 0.02 - 200 mg/kg ww Zn 0.14 – 500 mg/kg ww	Fish, Shellfish and molluscs (marine biota)	Inductively coupled plasma - Mass Spectrometry	Laboratory SOP CHE-178 Digestion method based on in-house developed method and ICPMS manufacturer recommendations
752 Chemical residue testing - .04 Pesticide residues	CHE-215 Quantitative Screening Analysis of Cypermethrin and Deltamethrin in farmed finfish	Quantitative Screening Analysis of Cypermethrin and Deltamethrin	Cypermethrin 25-400 ug/kg. Deltamethrin 5-80 ug/kg	Finfish- muscle and skin in natural proportions	Gas Chromatography Mass Spectrometry	Laboratory SOP CHE215 Based on Roscoe, Veronica, Judge, Judy, Rawn, Dorothea F.K., "Application of the QuEChERS Extraction Method for the Analysis of Pyrethrin and Pyrethroid Pesticides in Fin and non-Fin Fish
752 Chemical residue testing - .05 Organic contaminants	CHE-170 Determination of Lipid Content and analysis of Organic Contaminants	Quantitative Analysis of Polychlorinated Biphenyls, Hexachlorobenzene and Hexachlorobutadiene.	Range: 0.001 - 10,000ng.g ww and/or lipid weight	marine and freshwater fish, shellfish and marine mammals.	Gas Chromatography Mass Spectrometry	Laboratory SOP CHE-170. Based on an internationally recognised method for the extraction of lipids from biota followed by the analysis of contaminants by GC-MS.
		Quantitative Analysis of Polycyclic Aromatic Hydrocarbons and Polybrominated Diphenyl Ethers	Range: 0.001 - 70.00ng.g ww and/or lipid weight	biota)	Gas Chromatography Mass Spectrometry	Laboratory SOP CHE-170. Based on an internationally recognised method for the extraction of lipids from biota followed by the analysis of contaminants by GC-MS [ICES No 53 Techniques in Marine Environmental Sciences]
752 Chemical residue	CHE-209 Nutrients in	Quantitative Analysis of	Range: Nitrite 0.04-	marine and	Continuous Flow	Laboratory SOP CHE-

testing - .07 Nutrients	Sea and Estuarine Water	total oxidized nitrogen (TOxN), nitrite, silicate and phosphate	20µM, Phosphate 0.16-50µM, Total Oxidised Nitrogen 0.26-2000µM and Silicate 0.38-1500µM	estuarine water	Analyser (computer controlled, continuous flow, wet chemistry analytical system using colorimetry)	209. Based on manufacturers recommendations (Skalar auto-analyser Methods).
766 Environmental testing (inc waters) - .01 Metal analysis	CHE-168 Determination of Total Mercury in Estuarine and Marine Waters	Total mercury	Range: 0-20 ppt	Estuarine and marine waters	Cold Vapour Atomic Fluorescence Spectrometry with gold trap pre-concentration	Laboratory SOP CHE-168. Based on USEPA Method 1631: Determination of mercury in water by cold vapour atomic fluorescence spectrometry with gold trap
	CHE-169 Screening and Confirmatory Analysis of metals in estuarine and marine waters	Ag, As, Cd, Cr, Cu, Ni, Pb, Zn	Range: 0.05-1000 µg/l	Saline, Estuarine and other Waters	ICP-MS (Inductively Coupled Plasma Mass Spectrometry)	Laboratory SOP CHE-169. Based on USEPA Method 200.8 Determination of Trace Elements in Waters and Wastes by Inductively Coupled Plasma – Mass Spectrometry Revision 5.4.
766 Environmental testing (inc waters) - .05 Inorganic	CHE-141 Salinity analysis in Sea and Estuarine Water	Salinity	Range: 0.03 (i.e. LOQ) - 41.81 psu	Saline Waters	Portasal Salinometer TM8410A	Laboratory SOP CHE-141. Based in Technical Manual for Portasal Salinometer.
797 Miscellaneous materials and products - .03 Other tests	BCT-078 Analysis of Lipophilic toxins, including semi quantitative screen for Domoic Acid	Okadaic acid, AZA, Yessotoxin, Domoic Acid	Range: OA Equivalents 0.015-13.21 µg/g AZA Equivalents: Range 0.005-7.5 µg/g Yessotoxin Equivalents, Range 0.2-2.39 µg/g Semi Quantitative Screen: Domoic Acid by LC-MS/MS: Range 2.0 -113 mg.kg-1	Fish, shellfish and molluscs	UPLC MSMS	Laboratory SOP BCT-78. Based on Gerssen, P.P.J. Mulder, M.A. McElhinney, J. de Boer, 2009. Journal of Chromatography A, 1216, 9, 1421 - 1430 and the EU Reference method for lipophilic toxin analysis (EU-RL LCMSMS)
	BCT-088 Chemical Confirmatory Test: Domoic and Epi-Domoic Acid analysis	Domoic acid and Epi-Domoic Acid	Range Domoic and Epi-Domoic acid: 0.8 – 2500 mg.kg-1	Fish, shellfish and molluscs. Shellfish: All Tissue	UHPLC DAD	Laboratory SOP BCT-88. Based on the international procedure by Quilliam et al.1995

						used and recommended by the European Reference Laboratory for Marine Biotoxins(EURLMB).
	BCT-096 Analysis of Biotoxins in Shellfish	Okadaic Acid, AZA, Yessotoxin, Domic Acid	OA Equivalents: Range 0.015 – 4.5 µg/g AZA Equivalents: Range 0.005 – 4.3 µg/g Yessotoxin Equivalence: Range 0.03 – 6.2 µg/g Semi Quantitative Screen: Domoic Acid: Range 0.7 – 53.8 mg.kg-1	Fish, shellfish and molluscs. Shellfish: All Tissue	UPLC-Xevo G2-S MS-ToF	Laboratory SOP BCT-96. Based on the EU Reference method for lipophilic toxin analysis (EU-RL LC/MS-MS)
	BCT-100 Paralytic Shellfish Toxins by pre-column oxidation UHPLC-FD	Saxitoxin STX, GTX Neo	Range: Toxin Range (LOQ-ULQ) Units: µg STX diHCLeq-kg STX 34 → 2263 dcSTX 17 → 1459 GTX2,3 26 → 3359 GTX5 2 → 155 dcGTX2,3 14 → 1405 C1,2 4 → 509 NEO 145 → 4481 GTX1,4 245 → 3984 dcNEO 25 → 1513	Fish, shellfish and molluscs	Ultra High Pressure Liquid Chromatography with Fluorescence Detector. UHPLC	Lawrence JF, Niedzwiadek B, Menard C “AOAC Official Method 2005.06

Marine Institute Headquarters

Chemical Testing

Category: B

Chemistry Field - Tests	Test name	Analyte	Range of measurement	Matrix	Equipment/technique	Standard reference/SOP
798 Sampling	CHE-006 Procedure for taking samples for surveillance monitoring of finfish farming products	As specified in the annual plan for monitoring and detection of residues in aquaculture products	n/a	Fin Fish - skin and muscle in natural proportions	Sampling	Laboratory SOP CHE-6 , based on Regulations (EU)2022/1644, (EU)2022/1646, (EU) 2021/808 Annex 1