Schedule of Accreditation

Organisation Name	Marine Institute
Trading As	
INAB Reg No	130T
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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	

	FHU-125 Diagnosis of Perkinsus sp. in molluscs by histopathology	Preparation of stained histological slides and screening of slides for the presence or absence of Perkinsus sp. parasites, the causative agents of Perkinsosis in molluscs	Molluscs	Binocular microscope, tissue processor, embedding centre, microtome, slide stainer and automated coverslipper	Laboratory SOP FHU-125 and FHU-128	
	FHU-126 Diagnosis of Mikrocytos sp. in molluscs by histopathology	Preparation of stained histological slides and screening of slides for the presence or absence of Mikrocytos sp. parasites, in molluscs	Molluscs	Binocular microscope, tissue processor, embedding centre, microtome, slide stainer and automated coverslipper	Laboratory SOP FHU-126 and FHU-128	
803 Culture of organisms in liquid or agar based culture media with visual or instrument monitoring for growth - .01 Culture of bacteria	MIC-006 Escherichia coli Enumeration in Molluscan Bivalve Shellfish	Most probable number test for enumeration of Escherichia coli in Molluscan Bivalve Shellfish	Fish, Shellfish and molluscs	Cultures Incubator Most probable number technique for enumeration of Escherichia coli	Laboratory SOP MIC-06. Based on ISO 16649-3 Microbiology of food and foodstuffs – Horizontal method for the enumeration of β glucuronidase-positive Esherichia coli – Part 3. Most probable number techniques using 5-bromo-4-chloro-3-inddolyl- 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	Fish, shellfish and molluscs	Real-Time PCR Instrument	Laboratory SOP MBU-4. Based on ISO 15216-1:2017	

		shellfish hepatopancreas tissue				
	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	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	
	MBU-125 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 Bonamia ostreae and Bonamia exitiosa Detection by real-time Probe-based PCR (rtPCR). Range: positive/negative	FinFish, Shellfish, Molluscs	Real-time PCR instrument	Laboratory SOP MBU-125 based on EURL finfish, Molluscan and Crustacea diagnostic manuals; WOAH (OIE) Diagnostic manuals. Regulation (EU) 2016/429, Commission Delegated Regulation (EU) 2020/689, Commission Implementing Decision (EU) 2021/260	

	MBU-126 Genotyping of Specified Pathogen Isolates using a DNA Sequence Comparison Technique	Koi Herpesvirus (KHV Whitespot syndrome virus (WSSV) Infectious Salmon Anaemia virus (ISAV) Secondary confirmation by conventional PCR (cPCR), and DNA sequence comparison techniques (BlASTn, Phylogenetic analysis) . Range: Positive or Negative (WSSV). Genotype Identification for KHV or ISAV. This is following a positive result using MBU-125 (WSSV/KHV) or MBU-67 (ISAV)	FinFish, Shellfish, Molluscs	Conventional PCR (cPCR) instrument	Laboratory SOP MBU-126 based on EURL finfish, Molluscan and Crustacea diagnostic manuals; WOAH (OIE) Diagnostic manuals. Regulation (EU) 2016/429, Commission Delegated Regulation (EU) 2020/689, Commission Implementing Decision (EU) 2021/260	
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 2.3.5, 2.3.9, 2.3.10	
820 Miscellaneous	FHU-086 and FHU-087 Preparation and Screening of heart imprints from Ostrea edulis for the presence of Bonamia ostreae and Bonamia exitiosa	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 Utermöhl Cell Counting Method Range: 40 cells/l upwards (see appendix 1 for details list)	Biota: Species list: Toxic species – PSP Toxin Producers (Saxitoxins) (Also linked to fish 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	Utermöhl Cell counting method using Inverted light microscope	Laboratory SOP PHY-9. Based on EN15204:2007 and EU Directive 853/2004.	

			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 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.			

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-220 Analysis of Antibiotics by LCMSMS (Confirmatory method : Qualitative & Quantitative Analysis - finfish) Qualitative Screening method – crustaceans	QUINOLONES(Q) Ciprofloxacin(Q1) Danofloxacin(Q2) Difloxacin(Q3) Enrofloxacin(Q4) Flumequine(Q5) Marbofloxacin(Q6) Nalidixic acid(Q7) Norfloxacin(Q8) Oxolinic acid(Q9) Sarafloxacin(Q10) SULPHONAMIDES(S) Sulfachloropyridazine(S1) Sulfadiazine(S2) Sulfadimethoxine(S3) Sulfadoxine(S4) Sulfaguanidine(S5) Sulfamerazine(S6) Sulfamethazine(S7) Sulfamethizole(S8) Sulfamethoxazole(S9) Sulfamethoxypyridazine(S10) Sulfamonomethoxine(S11) Sulfapyridine(S12) Sulfaquinoxaline(S13) Sulfathiazole(S14)	QUANTITATIVE RANGE (A): (Q1, Q4) 10-400µg/kg, (Q2, Q6, Q9) 10-800µg/kg, (Q7, Q8) 5-800µg/kg, (Q3) 30-2400µg/kg, (Q5) 60-4800µg/kg, (Q10) 3-240µg/kg. (T1, T2, T5, T6, T7, T8) 5-400µg/kg, (T3, T4) 20-800µg/kg. (All: S1-S25) 10-800µg/kg. (O1) 5-400µg/kg, (O2) 0.25-40µg/kg. QUALITATIVE RANGE (A, B): (Q1, Q4) 10µg/kg, (Q2, Q6, Q7, Q8, Q9) 15µg/kg, (Q3) 30µg/kg, (Q5) 60µg/kg, (Q10) 3µg/kg. (T1, T2, T5, T6, T7, T8) 10µg/kg, (T3, T4) 10µg/kg.	(A) Fin-fish matrices, skin and muscle in natural proportions, (B) 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

		Sulfisoxazole(S15) Sulfacetamide(S16) Sulfameter(S17) Sulfamoxole(S18) Sulfisomidine(S19) Sulfatroxazole(S20) Sulfachloropyrazine(S21) Sulfaethoxypyrazine(S22) Sulfasalazine(S23) Sulfabenzamide(S24) Sulfaphenazole(S25) TETRACYCLINES(T) Chlortetracycline(T1) Demeclocycline(T2) Doxycycline(T3) 4-epi-Chlortetracycline(T4) 4-epi-Oxytetracycline(T5) 4-epi-Tetracycline(T6) Oxytetracycline(T7) Tetracycline(T8) OTHER(O) Trimethoprim(O1) Dapsone(O2)	(All: S1-S25) 10µg/kg. (O1) 5µg/kg, (O2) 0.5µg/kg.			
	CHE-233 Analysis of Dyes by Thermo LCMSMS	Malachite green, Crystal Violet, Victoria Blue, Leuco Crystal Violet, Leuco Malachite Green, Brilliant Green	Confirmatory method: Qualitative & Quantitative Analysis Quantitative Range: 0.2- 8 µg/kg Qualitative Range: determination at lowest calibration level 0.20 µg/kg	Finfish muscle and skin in natural proportions	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 adaptions
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).
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
766 Environmental testing (inc waters) - .05 Inorganic	CHE-141 Salinity analysis in Sea and Estuarine Water	Salinity	Range: 0.03 (i.e. LOQ) - 37.999 psu	Saline Waters	Portasal Salinometer TM8410A and Autosal Salinometer 8400B	Laboratory SOP CHE-141. Based in Technical Manual for Portasal Salinometer and Autosal 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	STX, dcSTX, GTX2,3, GTX5, dcGTX2,3, C1,2, NEO, GTX1,4, dcNEO, GTX6 & C3,4.	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 GTX6, 8 → 946 C3,4, 8 → 553	Fish, shellfish and molluscs	Ultra High Pressure Liquid Chromatography with Fluorescence Detector. UHPLC	Lawrence JF, Niedzwiadek B, Menard C “AOAC Official Method 2005.06
	BCT-107 Analysis of Lipophilic toxins by LC-MS/MS XEVO TQxs	Diarrhetic Shellfish Toxins, Azaspiracid Shellfish Toxins Yessotoxins, Domoic acid screen.	Range: OA Equivalents; 0.01-16.0 µg/g AZA Equivalents: 0.005-14.9 µg/g Yessotoxin Equivalents; 0.5-37 µg/g Semi Quantitative Domoic Acid Screen; 0.7 to 113 mg/kg.	Fish, shellfish and molluscs	UPLC LC-MS/MS	Laboratory SOP BCT-107. Based on the EU Reference method for lipophilic toxin analysis (EU-RL LC/MS-MS)