



## BIOLOGICAL RESOURCES

SUBCATEGORY	INSTITUTE	SERVICE DESCRIPTION	CONTEXTUAL INFORMATION
Culture collections	CNR-ISP-ME	Access to the Culture Collection of Microorganisms from Cryoenvironments – MICR(Y)O, including microbial strains, mainly bacteria, isolated from different environmental sources in the Arctic and Antarctica.	Maintenance of microbes from polar and cryoenvironments
Culture collections	OGS	Access to CoSMi Microalgal Culture Collection containing ~100 strains of phytoplanktonic species (Diatoms, Dinoflagellates, Cryptophytes, Prymnesiophytes, Chlorophytes, Prasinophytes, Euglenophytes, Dictyochophytes). Presence of potentially toxic dinoflagellates and diatoms responsible for blooms and species used in aquaculture and ecotoxicology. The complete list of species is available in the CoSMi website: <a href="http://cosmi.inogs.it/">http://cosmi.inogs.it/</a> . Services of isolation from the wild, growth and identification of marine microorganisms by combining morphological observations and molecular analyses upon request	CoSMi culture collection containing ~100 strains of phytoplanktonic species (Diatoms, Dinoflagellates, Cryptophytes, Prymnesiophytes, Chlorophytes, Prasinophytes, Euglenophytes, Dictyochophytes). Presence of potentially toxic dinoflagellates and diatoms responsible for blooms and species used in aquaculture and ecotoxicology. The complete list of species is available in the CoSMi website: <a href="http://cosmi.inogs.it/">http://cosmi.inogs.it/</a> . Services of isolation from the wild, growth and identification of marine microorganisms by combining morphological observations and molecular analyses upon request
Culture collections	UNITO	Access to fungal strains of the Mycotheca Universitatis Taurinensis (MUT)	Fungal culture collection containing more than 2000 strains of marine fungi and related metadata (mainly from the Mediterranean Sea). MUT will provide access to fungal strains, lab. facilities and staff expertise for the isolation, identification and characterization of marine fungi. Expertise to describe marine fungal communities via metabarcoding and/or metagenomic analyses are available. On request,





			whole Genome sequencing of marine fungi can also be performed.
Culture collections	UNITUS	Marine bacteria and fungi culture collection	Sampling, communities isolation, identification and characterization through morphological, physiological and molecular approaches; production of microbial biomass and inocula
Marine model organisms	UNICA	Pilot-scale production of sea urchin, sea cucumber (embryo, larvae, juveniles, adult)	Collection of broodstock, fertilization, Life Support System for Sea urchin and sea cucumbers embryos/larvae, study of resistance and plasticity towards toxicity compounds
Marine model organisms	UNIME	Sicilian Zebrafish Resource Center (SZRC), research facility for zebrafish production and use as model organism in preclinical research.	
Organisms collected in the wild	CNR-IAS-O	Provision of marine/brackish water model organisms	Collection by fishing gear of fishes ( <i>Dicentrarchus labrax</i> , <i>Mugil cephalus</i> , <i>Liza aurata</i> , <i>Mullus barbatus</i> ) and invertebrates ( <i>Paracentrotus lividus</i> ) from nearby locations
Organisms collected in the wild	CNR-IRBIM-L	Collect and supply of fauna specimens in Lesina lagoon	Fish and other macrozoobenthos can be collected in situ, including Polychaeta, Bivalvia, Gastropoda, Isopoda, Amphipoda. Lagoon macrofauna also includes <i>Mugil cephalus</i> , <i>Sparus aurata</i> , <i>Atherina boyeri</i> , <i>Aphanius fasciatus</i> , <i>Anguilla anguilla</i> , macroalgae. A box-corer is used for macrozoobenthos sampling. Macrofauna sampling is mainly based on the use of "paranza", a traditional fishing system made up of net walls fixed on stakes and retaining devices (fyke-nets). Contextual taxonomic identification is available.
Organisms collected in the wild	CNR-IRBIM-M	Collect and supply of bony fishes, cephalopods, crustaceans and elasmobranchs from GSA10	
Organisms collected in the wild	CNR-ISMAR	Collection of benthic model organisms ( <i>Ciona</i> , mussels, oysters, anemones, polychaetes etc.) and macroalgae from the Venice lagoon and nearby marine coastal waters	
Organisms collected in the wild	CONISMA-UNIPD	Provision of species from the Venice lagoon and North-Western Adriatic Sea by scuba divers sampling	Collection of live samples for experimentation/shipment: Adriatic and lagoon species of planktonic microalgae, Seaweeds, Copepods, Benthic macrofauna of soft bottom, Benthic macrofauna of hard (artificial) bottom, Teleosts, Elasmobranchs. 10 x 70 L, 10 x 60 L, 10 x 25 L climate controlled aquaria for sample preservation are available on request.



Organisms collected in the wild	CONISMA-UNISALENTO	Collection and rearing of marine organisms (model and non-model, benthic and planktonic taxa) including rare taxa, such as hemichordate pterobranchs. integrative (morphological, ontogenetic, molecular) taxonomy on marine invertebrates and fish. Environmental DNA sampling and analysis.	
Organisms collected in the wild	ENEA-LS	Access to collection of organisms in the wild	Collection of marine organisms in coastal marine sites (regional parks, Posidonia meadows, coralligenous habitats, intertidal habitats), impacted areas (ports), Smart Bay Santa Teresa ( <a href="https://smartbaysteresa.com">https://smartbaysteresa.com</a> ); Taxonomic services on marine invertebrates: expertise and sample collection of Bryozoans; Taxonomic books available for other invertebrate taxa; Microscopic facilities (optical microscopy, portable USB microscope for fieldwork activities); Underwater video and photography; Drones (air and water); Small library available for taxonomical and ecological studies of marine invertebrates
Organisms collected in the wild	ISPRA	Access to organisms collection by fishing gear of fishes, by grab or corer of marine benthic invertebrates, algae and phanerogams, by plankton net of planktonic organisms	Collection: by fishing gear of fishes; by grab or corer of marine benthic invertebrates, algae and phanerogams; by plankton net of planktonic organisms
Organisms collected in the wild	SZN	Collection and rearing of marine model organisms (ascidians, sea urchin, starfish, sea turtles, etc.) from the Gulf of Napoli	
Organisms collected in the wild	UNIFE	Oysters, mussels, clams, fish, macrobenthos and macroalgae from Po Delta lagoons	
Organisms collected in the wild	UNIMIB-MarHE	Collection of benthic, nektonic organisms and corals with supplementary services on request.	
Organisms collected in the wild	UNITO	Collection and characterization of mesozooplanktonic communities	Collection and analysis of neritic and pelagic (holo- and mero-) mesozooplanktonic communities, macrozoobenthos (molluscs, polychaetes and crustaceans), Ichthyoplankton
Organisms collected in the wild	UNITUS	Access to organisms provision from insular ecosystems (Pontine Islands, Tuscan Archipelago) or coastal ecosystems (Lazio from San Felice Circeo to Argentario), including plankton sampling,	Assisted sampling and taxonomic identification of: nektonic organisms (fish, crustaceans, cephalopods); fish parasites (endo- and ecto-parasites); marine bacteria and fungi. Two boats fully equipped for scientific sampling (Calafuria 11m, Calasetta 7 m), one



		sediment sampling at different depths and supply of marine model organisms	tecnician with navigation license and sampling expertise. Two technicians with Certified Advanced Underwater Scientific Divers (AIOSS - AESD). CISMAR is recognised as a Scientific Institute by MASAF for fishery activities. Sampling from northern Latium coasts, including 5 SAC Natura 2000 with <i>P. oceanica</i> beds
Rearing of aquaculture animals	CONISMA-UNICAM	Rearing facilities for fish and macroinvertebrates, aquaculture facilities and support to fish rearing (e.g., neuroendocrine control of fish reproduction, welfare of farmed fish, food quality safety of fishery production)	Fish species that can be farmed are the gilthead sea bream ( <i>Sparus aurata</i> ), the grey mullet ( <i>Mugil cephalus</i> ), the rainbow trout ( <i>Oncorhynchus mykiss</i> ), the goldfish ( <i>Carassius auratus</i> ), the mediterranean mussel ( <i>Mytilus galloprovincialis</i> ), the European flat oyster ( <i>Ostrea edulis</i> ) and the marine gastropod ( <i>Tritia mutabilis</i> ).
Rearing of aquaculture animals	CONISMA-UNISALENTO	Access to rearing facilities for fish and macroinvertebrates, including aquaria, tanks and lab-controlled system for manipulative experiments on marine invertebrates and support to fish rearing/aquaculture facilities and support to fish rearing	Collection and rearing of marine organisms (model and non-model, benthic and planktonic taxa) including rare taxa, such as hemichordate pterobranchs. integrative (morphological, ontogenetic, molecular) taxonomy on marine invertebrates and fish. Environmental DNA sampling and analysis.
Rearing of aquaculture animals	ENEA-LS	Natural Bay (Baia S. Teresa) - in proximity of the mollusk aquaculture - for in situ experimentation (short experiments). Scuba diving facilities (tanks and compressor for refill) available and boat.	
Rearing of aquaculture animals	UNIFE	Access to rearing facility of bivalves of commercial interest (clams, oysters, mussels) for aquaculture application and studies (physiological responses, SFG, pollutants accumulation).	Contextual microscopy use (Scanning electron microscopy ZEISS EVO40, Transmission electron microscopy Hitachi H800, Zeiss EM 900, Atomic force microscopy Nanoscope III) is available on request. The aquaculture farm uses sensor network integrated with mobile application.
Rearing of aquaculture animals	UNIME	Aquaculture Teaching Facility, research and teaching facility for teleosts reproduction	
Rearing of aquaculture animals	UNITUS	Experimental aquaculture, including crustacean hatchery	Rearing and manipulation of fish, crustaceans and molluscs. Outdoor facilities: 5 raceway tanks, marine water. Indoor facilities: 1) RAS (Recirculating Aquaculture System) 13m <sup>3</sup> overall: 6 squared tanks 1000 l, 5 up-wellers tanks 200 l, 2 collector tanks 3000 l, Foam-fractionator for DOM (Dissolved Organic Matter), MBBR unit (moving bed biofilter reactor); 2) RAS 9 m <sup>3</sup> overall: 2 tanks 4000 l, with sand filters and MBBR



			unit; 3) 12 tanks squared shaped 1000 l. Hatchery facilities: AquaHive (up to 11.000 crustacean larvae) specifically designed for lobsters; 3 sets for hatchery and growth of brine shrimps or rotifers. Phyto- and Zooplankton production bioreactors.
Taxonomic services	CNR-IRSA-T	Access to the Herbarium TAR for observation and loan	Collection of organisms of different groups; Expert taxonomists support for marine taxa available
Taxonomic services	CNR-IRSA-V	DNA taxonomy, statistics	single rooms with shared kitchen and bathrooms
Taxonomic services	CNR-ISP-ME	Access to taxonomic services of bacteria from extreme environments, microbial communities and bacterial isolates provided from users.	Laboratory equipped for cultivation and isolation of extreme microorganisms , Application of selective media, enzymatic screening
Taxonomic services	CNR-ISP-RM	Taxonomic fingerprint of main microbial groups (Grampositive, Gram-negative bacteria and Fungi)	Access to full equipped lab for legacy and emerging organic contaminants: GC-MS (PAHs, PCBs, old and new generation pesticides , PBDEs, etc. ) and HPLC- Orbitrap Exploris 120 (pharmaceuticals, personal care products, pesticides, plasticizers, Bisphenol A, etc. ) on biotic (organisms and vegetation) and abiotic (water, sediment, soil, sewage) matrices collected in polar areas and at mid-latitudes. Estimate of risk associated with the contamination detected in different matrices of aquatic and terrestrial compartments
Taxonomic services	ISPRA	Taxonomic identification of marine macrobenthic organisms, teleosts and elasmobranchs	
Taxonomic services	OGS	Access to service of Identification, sorting and characterization through visual (morphology) and molecular approaches of Microzooplankton, Phytoplankton and Macrozoobenthos	Contextual equipment for sample manipulation is available: climate rooms, wet labs, water manipulation equipment, water incubation units and aquaria are available. Gas supply available upon request. Imaging (epifluorescence microscopy, optical microscopy, flow cytometry), chemical measurement (nutrients, chlorophyll a and particulate organic C & N) and molecular platform (PCR, RT-PCR, sample preparation for NGS) available on site
Taxonomic services	SZN	The Marine Organism Taxonomy (MOTax) Unit is a specialized counseling center which exploits advanced resources, skills and expertise that are available today at the SZN for the taxonomy and identification of various groups of marine organisms providing qualitative and quantitative	Sorting, identification and isolation of phytoplankton, zooplankton, benthos from natural samples in collaboration with IRM. Isolation of single cells for the cultivation of microalgal strains. Organisms barcoding is available in collaboration with CSAM



		analysis of phytoplankton, zooplankton and benthos samples with morphological and molecular characterization	
Taxonomic services	UNICA	Fish Analytical Laboratory	Fish otolith examination and analysis; morphometry, shape analysis, external texture organization, fish age determination, fish stock assessment
Taxonomic services	UNIME	Access to LabsTREAM - TAXOMAR facility for taxonomic identification of marine macrozoobenthic organisms, teleost (otolith analysis facility with Zeiss EVO-10 EM, including external texture organization analysis), and elasmobranchs	Taxonomic identification of marine macrobenthic organisms, teleosts and elasmobranchs.
Taxonomic services	UNITO	Access to taxonomy facilities of UNITO: the MUT fungal taxonomy lab for Isolation, identification and characterization through visual (morphology) and DNA barcoding of marine taxa; the zooplankton taxonomy lab for isolation, identification and characterization (taxa and species level) of Holoplankton, Meroplankton and Ichthyoplankton.	Morphological identification and DNA barcoding can be performed on marine fungi/fungal communities, mesozooplankton (copepods and all other holoplanktonic groups), Ichthyoplankton (larval stages), macrozoobenthos (molluscs, polychaetes and crustaceans). Training and design of ad hoc protocols is available on request.



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