

Nano aquatic exposure facility

Category:
C. Particle Characterisation in and ex-situ
D. In-vivo toxicity studies

Institute: Biosciences

Location: University of Exeter, Exeter, EX4 4PS, UK

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Exeter's £9M state-of the art- aquarium complex has 14 rooms housing over six hundred tanks, supported by seven preparation/laboratory rooms, including dedicated nanomaterial exposure suites, microscopes, cameras, video and imaging equipment for analysis of development, physiology and behaviour in fish and invertebrates. The rooms are temperature controlled and allow for considerable flexibility for freshwater, marine and sediment exposures. Water temperature is controlled to within 1°C and air temperature to within 2°C. Water systems include RO (Reverse Osmosis) water to remove all salts and possible contaminants. Both the labs and the plant rooms are sealed to avoid contamination.



The aquarium complex can house most OECD/ICES approved organisms, from small tropical fish species, such as the zebrafish and medaka, to large coldwater species, such as trout and various flatfish. Invertebrate facilities include expertise with crustaceans, echinoderms, polychaetes and most OECD approved aquatic and sediment bioassays. The aquarium system is supported by highly trained GLP compliant staff, and is fully licensed for work with fish by the UK Home Office. The unit is available for use for projects spanning pilot studies requiring only a few tanks to large scale, long term studies. Exposures can operate using flow through, semi-static or static regimes. We have reliable suppliers of standard fish and invertebrate species, and can source less common species.



Co-location of our extensive ecotoxicology and nano- bio-imaging facilities within the same complex allows for detailed study of nanoparticle bioaccumulation, uptake and distribution in parallel.

Main Features:

- Fully home office compliant facility supporting extensive range of OECD/ICES approved tests
- Experience with ZnO, TiO₂, CeO, Ag, Au, various forms of carbon, and a range of polymers including micro and nanoplastics