

Fish Core Facility

FishCore is the largest zebrafish facility of its kind in the southern hemisphere. It includes 1000 quarantine and 5200 non-quarantine tanks. FishCore is designed to meet the needs of ARMI, Monash and external biomedical researchers who use genetically-modified and mutant strains of zebrafish that model a variety of human diseases and conditions.

Facilities

- PC2 zebrafish housing facilities
- PC2 research microinjection facilities
- AQIS approved QAP zebrafish quarantine facility
- State-of-the-art recirculation and filtration systems to ensure optimal environmental conditions
- Specialised aquatic animal husbandry staff

Services

- Training in the use of zebrafish as a research model
- Purchasing and agistment of zebrafish strains
- Zebrafish wild type, transgenic, and mutant embryo production
- International and Interstate importation and AQIS approved quarantining of zebrafish strains
- Exportation of mutant and transgenic strains of zebrafish
- Cryogenic freezing and rederivation of zebrafish strains
- Access to the FishCore embryo microinjection facilities

Additional services include a sperm freezing and rederivation service for long-term storage requirements. FishCore is an approved QAP quarantine facility

A combination of genetic and embryological amenability has placed zebrafish at the forefront of attempts to understand how genes function to control vertebrate development. The optical transparency of the zebrafish embryo provides the ability to visualise every cell in the forming embryo by simple optical inspection, as well as enabling the use of a host of cell labeling and transgenic approaches to dissect embryonic development. The large-scale mutagenesis of the zebrafish genome has also produced different classes of mutations that disrupt gene function.





for strains that require international importation. FishCore also includes a state-of-the-art zebrafish phenotyping and microscope facility.

Aquatic system

- Total 6500 tanks: variable sizes ranging from 250mL to ten litres.
 - Water quantity: 5,500 litres in quarantine room and 26,000 litres in main tank room.
 - Water quality: reverse osmosis water (ROW) system supplying 2 x 3000 litres storage tanks dosed to maintain pH between 7.2–7.6. The water is dosed with tropical water conditioner containing a mixture of essential minerals and salts essential for fish health.
 - Biological filtration: Trickle filter utilising bioballs which act as a substrate for nitrifying bacteria, Nitrosomonas and Nitrobacter which convert ammonia to nitrate using oxygen.
 - Mechanical filtration: Self cleaning filter filters to 100 micron, followed by bag filters which filter to 50 micron then 25 micron.
 - Water Disinfection: UV sterilization using hydro optic disinfection technology, resulting in the inactivation of harmful pathogenic microorganisms.
- Water treatment plant: 2 x 5500 litre capacity retention tanks collecting waste water from the entire facility. Before discharge to the main sewerage system, effluent is chlorinated to sterilise it and then dechlorinated so that it can be discharged into the general sewerage line.
 - The water used for both the quarantine and main systems are part of a recirculation system. The water is recycled and cleaned via the filtration systems then returned to the FishCore facility. Only approximately 10% of the facility's 3150 L of water is replaced each week.
 - Online 24 hour 7 days a week environmental control and monitoring using OxyGuard system provided by Technolab P/L. This ensures optimal water quality, maintains light cycles, and monitors plant room equipment.
 - Water in each tank is recycled 5 times per hour.

Contact

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