

TAMIL NADU VETERINARY AND ANIMAL SCIENCES UNIVERSITY

DBT-TANUVAS Canine Research Centre and Networks Grant

Facilities and Assets created under DBT Funding and available at different units of the University

Project Monitoring Unit - Madras Veterinary College, Chennai – 600007.

A new building was constructed for the Project Monitoring Unit with a Total Plinth area of 73.30 m² and minor repair works to the existing building with an area of 116.13 m². The building includes the Project monitoring office, a training hall, administrative office, store room and wash rooms. Administration works related to the project and Trainings were conducted at this premise. Currently the building is being used as the Office of the Directorate of Clinics, TANUVAS.



Project Monitoring Unit – Front Full view



Program Co-ordinator - Office



Program Co-ordinator – Office lobby



Training Hall with audio visual aids



Administrative Office

Benchtop Flow Cytometer

- Model: CytoFLEX – A00-1-1102
- Funded for the Component 1 project titled “Diagnosis of immune-mediated diseases, lymphoma and canine parasitic diseases, and establishment of platelet banks for therapy” that operated under the CRC&N
- The CytoFLEX Benchtop Flow Cytometer was procured to strengthen advanced diagnostic and translational research capabilities in canine health. The instrument provides high-sensitivity, multi-parameter cell analysis and supports the development of innovative diagnostic assays for immune-mediated and infectious diseases in dogs.
- **Research and Diagnostic Applications:** The equipment has enabled optimization and standardization of flow cytometry-based assays for the diagnosis and investigation of Immune-Mediated Haemolytic Anaemia (IMHA) and Immune-Mediated Thrombocytopaenia (IMTP) in dogs. The platform also supports advanced cellular and molecular studies relevant to veterinary diagnostics, immunology and translational research.



- **Current Utilization-** The equipment is used in-house as well as in providing analytical services for researchers from other institutions for the following application - Immunophenotyping of immune cell populations; Cell Cycle Analysis; Apoptosis Studies; Intracellular Calcium Flux Assays and cell Proliferation Analysis

Ultra-Low Temperature (ULT) Freezer

- Make and Model: New Brunswick™ Premium U410 Ultra-Low Temperature Freezer (410 L Capacity)
- Purpose: To strengthen the sample preservation and biobanking facilities. The freezer provides reliable long-term storage of biological specimens at temperatures ranging from -50°C to -86°C , ensuring the integrity and stability of valuable research and diagnostic samples.
- Capacity: The equipment has a storage capacity of 410 litres, accommodating up to 24,000 samples, and is equipped with insulated inner doors, adjustable storage compartments, advanced temperature control systems, and built-in safety features to maintain optimal storage conditions.
- Current utility: The equipment is currently housed in the repository of the Clean room facility available at TRPVB. It freezer is currently utilized for the preservation of canine clinical specimens, serum, plasma, DNA, RNA, microbial isolates, cell cultures, reference reagents, and other biological materials generated through research and diagnostic activities.



Aeroscan Ultrasonography Machine

- **Model:** Aeroscan
- Funded for the Component II project titled "Screening of B and T cell lymphoma in canine and cost effective chemotherapeutic regimen"

- **Purpose:** The Aeroscan Ultrasonography machine was procured to strengthen advanced diagnostic and prognostic evaluation of tumours/lymphoma in canine health. The instrument provides imaging of liver, kidneys, spleen, pancreas and urinary bladder in dogs and cats, detection and characterization of abdominal masses. It is also used to take Ultrasound-guided biopsy and fine needle aspiration. It is useful to assess, monitor progression and treatment response.
- **Current Utilization-** The equipment is used in-house CCU as well as in providing diagnostic imaging support for clinical cases, research studies and postgraduate investigations.



Volume Infusion Pump

- **Make and Model:** AKAS INFUMAX
- **Purpose:** The volume infusion pump is used for the controlled and precise administration of intravenous fluids, chemotherapeutic medications and other therapeutic solutions to veterinary patients. It enables accurate regulation of infusion rate and volume, thereby ensuring safe and consistent fluid and drug delivery during clinical management and intensive care of dogs and cats.
- **Current Utility:** The equipment is routinely utilized in the dialysis unit for the clinical management of dogs and cats with renal dysfunction for controlled intravenous fluid therapy and administration of medications. It is particularly useful during critical care, dialysis (pre and post) and treatment of hospitalized patients, where precise infusion rates and volumes are required. It also supports research and clinical studies requiring standardized and controlled intravenous administration.



Syringe Infusion Pump

- **Make and Model:** AKAS SYRU 4004
- **Purpose:** The syringe infusion pump is used for the precise and controlled administration of small volumes of fluids, chemotherapeutic medications and other therapeutic agents through a syringe. It enables accurate regulation of infusion rate and dosage, particularly when continuous and low-volume administration is required.
- **Current utility:** The equipment is currently utilized in the dialysis unit for the clinical management of dogs and cats, particularly during intensive care and treatment of critically ill renal patients. It is useful for controlled administration of medications and fluids at precise rates



and supports clinical and research procedures requiring accurate and consistent drug delivery.

Patient Examination Hydraulic Table

- **Make and Model:** imedfurns
- **Purpose:** The hydraulic patient examination table is designed to provide a stable, adjustable and ergonomically suitable platform for clinical examination, diagnosis and treatment of veterinary patients. Its height-adjustable hydraulic mechanism facilitates convenient positioning and handling of animals of different sizes, particularly dogs.
- **Current Utility:** The table is placed in-house dialysis unit. The table is routinely used for clinical examination, physical assessment, sample collection, minor procedures and other routine veterinary interventions. Its adjustable height improves accessibility for veterinary personnel and enhances the safe handling, positioning and restraint of patients during diagnostic and therapeutic procedures.



Patient Examination Hydraulic Table

Vital Sign Monitor:

- **Make and Model:** RMS
- **Purpose:** The vital-sign/multiparameter monitor in dogs is used to continuously or repeatedly assess the major physiologic systems—cardiovascular, respiratory, oxygenation, temperature; so that deterioration can be recognized earlier and treatment is initiated before severe decompensation occurs.
- **Current Utility:** The vital sign monitor is placed in-house CCU unit. It is essential for real-time assessment of cardiovascular, respiratory and thermal status in dogs and cats, particularly during emergency care, critical illness and poisoning. They provide continuous monitoring of ECG, heart rate, blood pressure, SpO₂, respiratory rate, ETCO₂/capnography and body temperature, allowing early detection of hypotension, arrhythmias,



hypoxemia, hypoventilation, hypothermia and other complications, thereby facilitating prompt therapeutic intervention.

Animal Weighing scale:

- **Make and Model:** ATGO 200 Kg
- **Purpose:** The weighing scale provides accurate and repeatable body-weight measurement, which is essential for calculating drug doses, chemotherapy doses, fluid requirements and other weight-based treatments in dogs. Accurate weight is particularly important in oncology because many chemotherapeutic drugs have a narrow therapeutic index and dosing errors can result in toxicity or inadequate treatment. Precise chemotherapy dosing and recommended monitoring body weight during treatment is important.
- **Current Utility:** The weighing scale is placed in-house dialysis unit. In emergency cases, rapid and accurate body weight allows appropriate calculation of IV fluid boluses, maintenance fluids, emergency medications and other weight-based interventions before and after dialysis. Fluid-therapy recommendations use body weight directly for calculating fluid deficits, resuscitation and maintenance requirements. Serial weighing is also valuable for detecting changes in hydration and monitoring fluid overload in hospitalized emergency patients.



Cytotoxic Drug Preparation Cabinet:

- **Make and Model:** Microairflow
- **Purpose:** A cytotoxic drug preparation cabinet, preferably a properly certified Class II biological safety cabinet (BSC) or containment primary engineering control, provides a controlled and ventilated workspace for the safe preparation and reconstitution of injectable chemotherapy drugs. It helps contain cytotoxic aerosols, droplets and accidental splashes, thereby reducing occupational exposure of veterinary personnel and environmental contamination. Cytotoxic drugs should be prepared in a controlled area using appropriate PPE and, where applicable, closed-system drug-transfer devices.
- **Current Utility:** It is placed in-house veterinary preventive medicine laboratory. The cabinet is particularly important for preparing individualized chemotherapy doses for dogs and cats with neoplasia, including drugs such as doxorubicin, vincristine, vinblastine, cyclophosphamide and carboplatin. It improves the safety of repeated chemotherapy services by



minimizing aerosolization and contamination during drug reconstitution, dilution and transfer, while protecting veterinary staff, patients, owners and the hospital environment.

Benchtop Centrifuge

- **Make and Model:** Thermo Scientific Sorvall ST 8R Benchtop Centrifuge
- **Purpose:** The Thermo Scientific Benchtop Centrifuge was procured to strengthen laboratory sample-processing and research facilities. The equipment provides efficient and reproducible centrifugation of biological samples and is particularly useful for the separation and preparation of blood and blood-derived components.
- **Research and Diagnostic Applications:** The centrifuge is utilized for separation of whole blood into plasma and cellular fractions, preparation of serum and plasma, processing of blood samples for haematological and biochemical investigations, and preparation of samples for further diagnostic and research analysis. It supports research activities related to veterinary transfusion medicine, haematology, blood component preparation and clinical pathology.
- **Current Utilization:** The equipment is currently utilized for processing clinical and research samples generated through veterinary diagnostic and research activities. It is used for the preparation of serum, plasma, platelet-rich plasma and other blood-derived fractions required for clinical investigations and research studies.
- **Research Utility:** The centrifuge facilitates standardized and reproducible sample preparation and supports research involving canine blood components, transfusion medicine, platelet studies and other laboratory investigations.



Blood Bank Deep Freezer (-40°C)

- **Make and Model:** Vestfrost Solutions, deep freezer -40°C.
- **Temperature:** -40°C
- **Purpose:** The Vestfrost Solutions Blood Bank Deep Freezer was procured to strengthen blood component storage and bio-banking facilities. The freezer provides controlled low-temperature storage for the preservation of plasma, blood-derived components and other temperature-sensitive biological materials, thereby maintaining their quality and stability during storage.

- **Research and Diagnostic Applications:** The equipment is primarily utilized for the storage and preservation of frozen plasma and other blood components generated through blood banking activities. It supports research and clinical applications related to veterinary transfusion medicine, blood component preparation, storage and quality evaluation.
- **Current Utilization:** The freezer is currently utilized for the preservation of canine blood components, particularly frozen plasma and other biological samples associated with transfusion medicine and research activities. It enables maintenance of an organized inventory of blood components for clinical and research requirements.
- **Research Utility:** The equipment supports studies involving blood component storage, evaluation of plasma quality during storage, blood component therapy and development of standardized veterinary blood banking practices. It also provides reliable low-temperature storage for biological samples generated during research and diagnostic activities.



Refrigerated Centrifuge

- **Make and Model:** Thermo Scientific, Heraeus Cryofuge 5500i
- **Purpose:** The Heraeus Cryofuge 5500i refrigerated centrifuge was procured to strengthen sample-processing and blood component preparation facilities. The equipment provides controlled centrifugation under refrigerated conditions, which is particularly suitable for processing blood and other temperature-sensitive biological specimens.
- **Research and Diagnostic Applications:** The centrifuge is utilized for separation and processing of whole blood and blood components, including plasma and cellular fractions. It supports preparation of samples for haematological, biochemical and



immunological investigations, as well as research activities related to veterinary transfusion medicine and blood component preparation.

- **Current Utilization:** The equipment is utilized for processing canine clinical and research samples and for preparation of blood-derived components required for transfusion medicine and laboratory investigations. Refrigerated centrifugation helps maintain appropriate sample conditions during processing of temperature-sensitive biological materials.
- **Research Utility:** The equipment supports research involving canine blood components, platelet preparation, plasma separation, transfusion medicine and evaluation of blood component quality. It also facilitates standardized processing of biological samples for research and diagnostic activities.