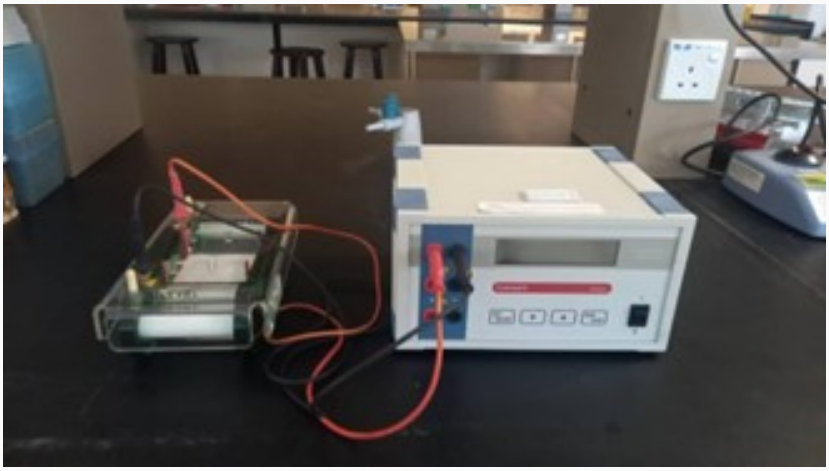
Pharmaco-Toxicology Research Laboratory (PTRL)

Advanced Research Facilities and Services at PTRL

Pharmaco-Toxicology Research Laboratory (PTRL) operates as an integral component of the Department of Pharmacology and Pharmaceutical Chemistry at the Faculty of Pharmacy, Universiti Teknologi MARA (UiTM) Selangor, Puncak Alam Campus. Situated on level 6 of the FF3 Building, PTRL is dedicated to providing a comprehensive range of services and facilities tailored to meet the diverse needs of researchers. The laboratory offerings encompass an extensive suite of capabilities, including extraction methodologies, antioxidant activity studies, plant culture techniques, cell signalling investigations, polymerase chain reaction (PCR) work, western blotting procedures, stem cell research, chromatography analyses, flowcytometry applications, imaging technologies, freeze-drying of samples and precise evaluation of animal activity parameters. Moreover, alongside this comprehensive range of laboratory equipment, PTRL takes pride in extending its facilities to accommodate an array of specialised research studies. These include plant tissue culture studies, investigations into fungus and bacteria, exploration of natural herb extraction processes, and in-depth analyses of animal activity. Through the provision of these specialised facilities, PTRL aims to support and facilitate a wide spectrum of scientific research endeavours, contributing to the advancement of knowledge and innovation across various disciplines.

PTRL is a fully equipped research laboratory that offers its services and equipment to researchers from various fields and levels, such as lecturers, postdoctoral fellows, postgraduates and undergraduate students, for their final-year projects. The laboratory also fosters collaborations with other faculties at UiTM, as well as other universities and private sectors. Key equipment available at our laboratory includes a freeze dryer, rotary evaporator, high-performance thin layer chromatography (HPTLC) and gel electrophoresis set, each serving critical roles in scientific research applications. Among these, the freeze dryer serves as a pivotal tool for researchers, as it effectively removes water from perishable materials, thereby preserving their integrity, extending shelf life, and facilitating convenient transportation. Notably, the freeze dryer operates in three distinct phases: freezing, primary drying (sublimation), and secondary drying (adsorption), ultimately expediting the drying process by up to 30%.

Freeze dryer



Gel Electrophoresis

The rotary evaporator is mainly used for evaporation, concentration, crystallisation, drying, separation and solvent recovery, as well as the continuous distillation of large amounts of volatile solvents under reduced pressure. Its applicability extends to pilot experiments and productions in the biological, pharmaceutical, chemical and food processing industries, providing essential support for various research endeavors.

Rotary Evaporator

Similarly, HPTLC finds wide application in pharmaceutical industries, offering valuable contributions to process development, identification, and detection of adulterants in herbal products, as well as in quality control of herbs and health food. Notably, HPTLC presents several advantages over the more commonly used high-performance liquid chromatography (HPLC) technique, including high throughput and cost-effectiveness, making it an indispensable tool in pharmaceutical research and quality control. Finally, gel electrophoresis is a basic lab technique used to separate deoxyribonucleic acid, ribonucleic acid, or proteins based on the size of their molecules. This technique plays a pivotal role in genetics and biochemistry, enabling the precise analysis and separation of biomolecules.

High Performance Thin Layer Chromatography (HPTLC)

The laboratory also conducts assessments of cardiovascular parameters, encompassing electrocardiogram analysis, pulse measurement, evaluation of heart rate variability, and the establishment of the PowerLab instrument for the acquisition of pharmacological data and physiology research employing preclinical animal models. PTRL has facilitated various training sessions focused on the utilisation of PowerLab for preclinical drug screening as well as the conduct of pharmacological evaluations through drug screening. These initiatives align with PTRL's commitment to conducting comprehensive pharmacological and toxicological evaluations, further underscoring our dedication to providing researchers with cutting-edge facilities and supporting the advancement of innovative research across diverse scientific disciplines.

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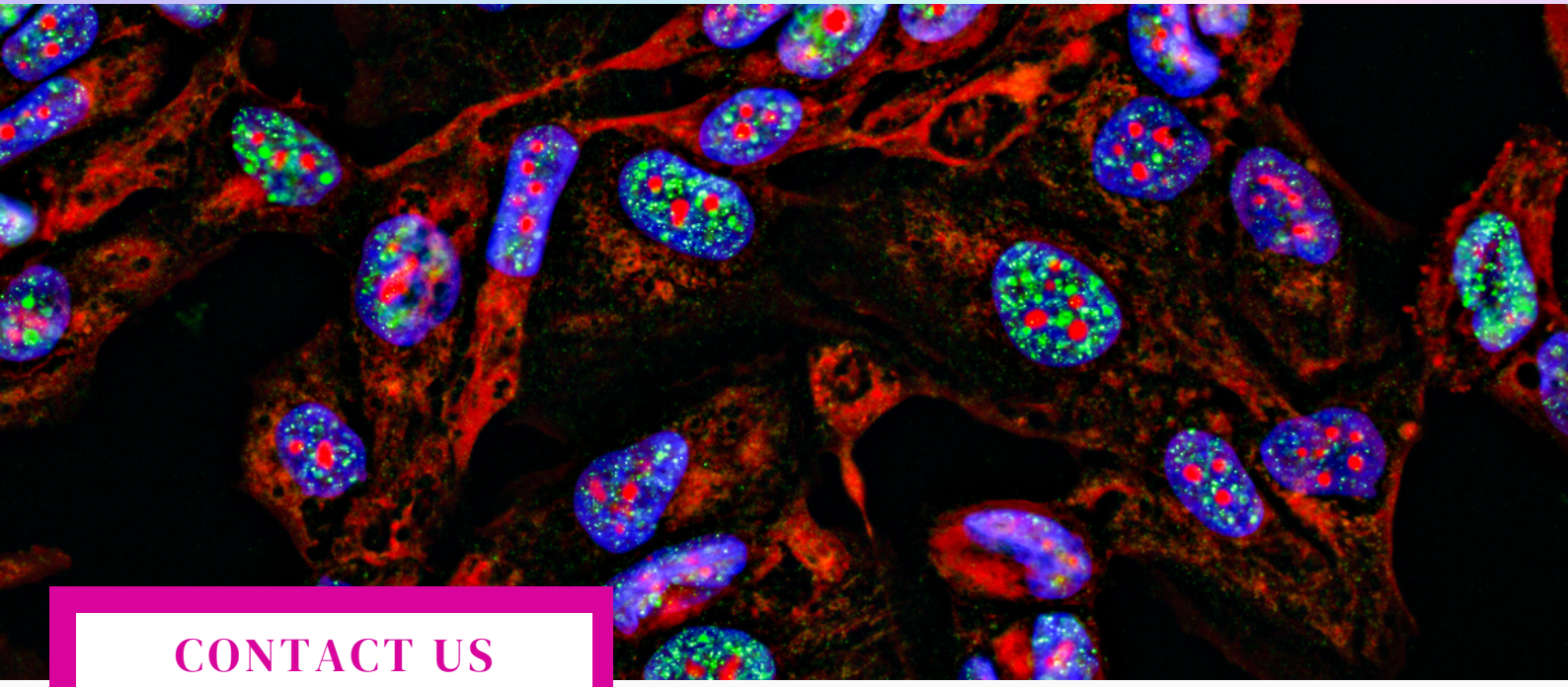
PRESCRIPTION

Latest news and updates from the Faculty of Pharmacy



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