



Established in 2001 and located on the first (1st) floor of the School of Dental Sciences

The Molecular Biology Laboratory is a specialized facility that offers a comprehensive platform for advancing cellular and molecular research, including studies in DNA/RNA extraction, gene expression, and protein analysis. Designed to support translational research and clinical applications, the lab provides a fully equipped environment with workstations and laboratory benches tailored to a variety of molecular biology workflows. It is available to members, postgraduates, researchers, and associate partners at USM.

SPECIAL TRAINING AND ATTACHMENT

1. Reverse Transcription PCR [RT-PCR] (from DNA / RNA extraction to analysis)
2. Quantitative / Real Time PCR [Q-PCR] (from DNA / RNA extraction to analysis)

Category	Charge (RM)
School of Dental Sciences	1,000 / 2 weeks
USM	10,000 / 4 weeks
Others	20,000 / 4 weeks

REAL TIME PCR

Model: One Step Plus

Allows precise measurement of DNA, RNA, and proteins in samples.



CHARGE (RM)	PPSG	USM (RM)	Others (RM)
Standard Curve / Comparative	FREE	100 / run	200 / run
Melt Curve	FREE	200 / run	300 / run

PCR THERMAL CYCLER

Model: PeQLab

Optimizes PCR conditions for target nucleic acid sequences by allowing multiple temperature variations in a single run, producing millions of copies.

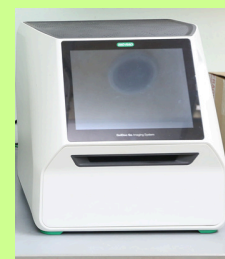


School of Dental Sciences	USM (RM)	Others (RM)
FREE	50 / run	100 / run

GEL IMAGE ANALYZER

Model: Gel Doc Go

Visualize and document DNA, RNA, and proteins that have been separated in polyacrylamide or agarose gels.



School of Dental Sciences	USM (RM)	Others (RM)
FREE	100 / run	200 / run

Protein Analysis Equipment:

- Transblot Turbo System
- Mini-Protein Tetra Cell

Other Equipment:

- Multipipetator
- Biophotometer
- Concentrator Plus
- Centrifuge
- Waterbath

Gel Analysis Equipment:

- Electrophoresis Set

- Real time turbidimeter
- Vortex
- Mixer
- Freezer
- Laminar Flow

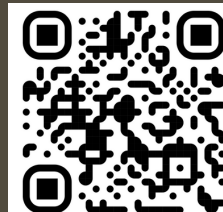
Further information, please contact:

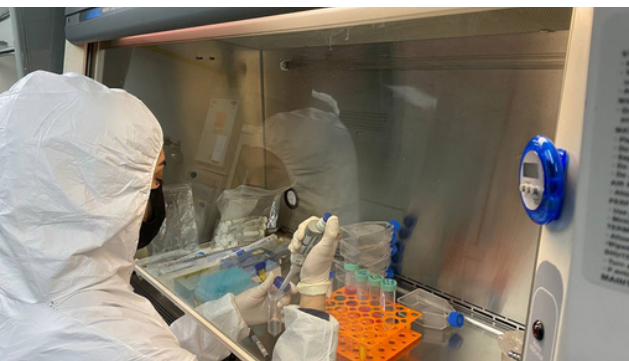
Wan Nor Aziemah Wan Zainulddin
Phone number: 097675856
E-mail: aziemah@usm.my

WORKING HOURS :

Sunday - Wednesday: 8.10 am - 4.30 pm
Thursday: 8.10 am - 3.30 pm

APPLICATION FORM:





TRAINING

Join us for training carefully crafted for beginners. A one-on-one hands-on session with experts who have more than 10 years of experience in cell culture. This hands-on training will provide a strong foundation for your advanced scientific research.

A. BASIC CELL CULTURE TRAINING (FOR BEGINNERS)

- Aseptic techniques
- Media preparation
- Cell thawing
- Cell passage/ subculture
- Cell cryopreserve
- Cell counting

Category	Charge (RM)
School of Dental Sciences	500 / week
USM	800 / week
Others	1000 / week

*for group of 2 persons/session, 10% discount fee will be given), Duration: 1 week

B. MTT ASSAY (CYTOTOXICITY)

Topic will be focusing on cytotoxicity test using MTT assay and result evaluation.

Category	Charge (RM)
School of Dental Sciences	1000 / week
USM	1000 / week
Others	1200 / week

*For group 2 persons/session, **10% discount** fee will be given).Duration: 1 week

PACKAGE A + B

For those who register for both training sessions, a **20% discount** will be applied to the total of both fees. Additionally, for groups of two persons per session, another **10% discount** will be applied.
Duration: 2 weeks

Date: Depends on the customer (T&C apply)

Location: Craniofacial Science Laboratory, School of Dental Sciences, USM

Date of registration: 1 month before training

Benefits:

- One-on-one hands on training
- Free consumables and all training materials
- Free module

TEST SERVICES

MTT assay (Cytotoxicity)

To assess the overall toxicity of materials, medical devices, and plant extracts using:

- Mouse Fibroblast Cells (L929).
- MTT assay.

Category	Charge (RM)
School of Dental Sciences	2000 / Sample
USM	2500 / Sample
Others	3000 / Sample

The Cell Culture Unit is located on the 1st floor inside the Craniofacial Science Laboratory, School of Dental Sciences, USM.

The Cell Culture Unit offers a clean room facility where it is a controlled environment with a specialised design to minimise environmental pollutants for research and teaching purposes.

FACILITY

The cell culture room is supplied with HEPA-filtered air of Class 100, 1000, and 10,000. The room is suitable for carrying out a variety of clinical laboratory tasks, from basic cell culture to the most complex cellular manipulations.

List of instruments:

- Biosafety Cabinet Class II
- Inverted Microscope
- CO2 Incubator
- Water Bath
- Refrigerated Centrifuge
- Cell Counter
- -20°C Freezer and Refrigerator

*clean room gowns, wipers, disinfectants and gloves will be provided

Category	Charge (RM)
School of Dental Sciences	150 / month
USM	200 / month
Others	300 / month

*charge is inclusive of consumable item

WORKING HOURS :

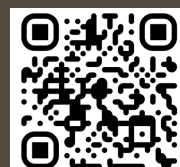
Sunday - Wednesday: 8.10 am - 4.30 pm

Thursday: 8.10 am - 3.30 pm

Please contact:

Nik Nabila Hanis Nik Abd Malik
 Phone number: 097675903
 E-mail: niknabilahanis@usm.my

APPLICATION FORM



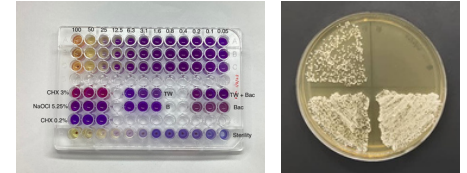


ANTIMICROBIAL SUSCEPTIBILITY TESTING

Minimum Inhibitory Concentration/ Minimum Bactericidal Concentration (MIC/MBC) (Aerobic/Anaerobic)

MIC is the broth and agar dilution methods to determine the lowest concentration of antimicrobial agent that inhibit the visible growth of microorganism.

MBC/MFC assay is used to determine the lowest concentration of antimicrobial agents that kill the microorganisms.



Price: from RM200 / sample or organism

Microbiology Unit is established under Craniofacial Science Laboratory to cater research and learning activities in School of Dental Sciences.

It also provides paid services on Antimicrobial Testing and Antimicrobial Susceptibility Testing, as well as basic and special training in microbiology.

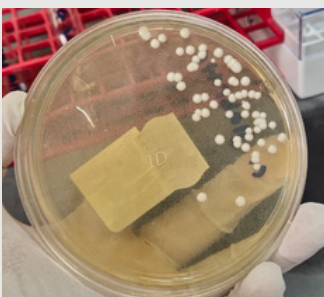
Our collections available:

LIST OF BACTERIA

- *Enterococcus faecalis* (ATCC 29212)
- *Actinomyces viscosus* (ATCC 15987)
- *Lactobacillus salivarius* (ATCC 11741)
- *Lactobacillus acidophilus* (ATCC 4356)
- *Streptococcus mutans* (ATCC 25175)
- *Streptococcus sobrinus* (DSM 20381)
- *Streptococcus sanguinis* (ATCC 10556)
- *Staphylococcus aureus* (ATCC 33862)

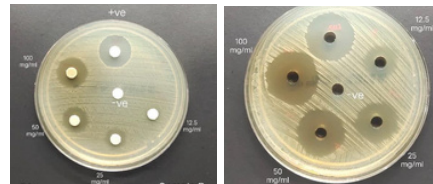
LIST OF FUNGI

- *Candida albicans* (ATCC 10231)
- *Candida glabrata* (ATCC 2001)
- *Candida tropicalis* (ATCC 1369)



ANTIMICROBIAL SUSCEPTIBILITY TESTING

Agar Diffusion Test (Aerobic/Anaerobic)



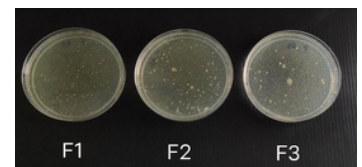
Price: from RM200 / sample or organism

This test is used to determine the sensitivity or resistance of pathogenic organisms to various antimicrobial agents.

The test is based on the determination of inhibition zone proportional of bacterial susceptibility to the antimicrobial present in the disk/well.

TOTAL PLATE COUNT (TPC)

TPC is used to measure the microbial load in a sample by determining the colony forming units of CFU.



Price: from RM200 / plate

Further information, please contact:

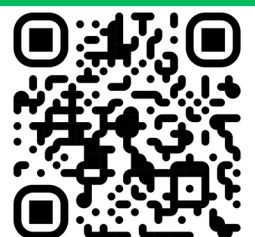
Ms. Che Suhailah A. Rahman
suhailah@usm.my
09-7673000 / 5754

WORKING HOURS :

Sunday - Wednesday: 8.10 am - 4.30 pm

Thursday: 8.10 am - 3.30 pm

APPLICATION FORM:



HISTOLOGY UNIT, CRANIOFACIAL SCIENCES LABORATORY (CSL)

SCHOOL OF DENTAL SCIENCES, UNIVERSITI SAINS MALAYSIA, HEALTH CAMPUS, 16150 KUBANG KERIAN, KELANTAN



The Histology Unit in the Craniofacial Science Laboratory, School of Dental Sciences, USM, provides comprehensive histology technical services in histopathology.

Our laboratory is equipped with advanced instrumentation, such as a tissue processor, embedding station, microtome, tissue floating bath, slide warmer, and autostainer, and is staffed by experienced technologists to deliver accurate and timely technical services.

One of the foundational techniques we offer is Hematoxylin and Eosin (H&E) staining, a fundamental method in histopathology. This technique, known for its precision, allows for a detailed examination of tissue structures under the microscope. H&E staining highlights cellular morphology and tissue architecture, enabling a precise diagnosis and characterization of pathological changes.

We offer four basic technical services in histopathology.

Whether you are a healthcare provider seeking diagnostic support or a researcher investigating tissue biology, our histology testing services are tailored to meet your needs with the highest standards of quality and professionalism.

WORKING HOURS :

Sunday - Wednesday: 8.10 am - 5.10 pm
Thursday: 8.10 am - 3.40 pm

TECHNICAL SERVICES

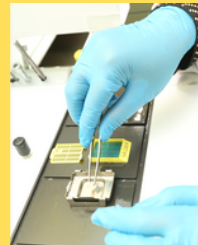
PROCESSING

Processing is the process of infiltrating the specimens with a sequence of solvents in preparation for sectioning



EMBEDDING

Embedding is the process in which the tissues or the specimens are enclosed in a mass of the embedding medium using a mould. Tissue is typically embedded with paraffin.



SECTIONING

Sectioning is the process of cutting tissue into thin slices.



STAINING & MOUNTING

Staining is the process of coloring tissues using dyes to allow the visualization of cells and extracellular matrix.

Mounting is the last step in the series of histological preparations for a slide to protect the cell film from damage, air drying, and stain fading.



Any queries, please contact:

- **Unit Histology, CSL**
Contact No. : 09-7675780 / 5781
- **Haswati @ Nurhayati Abdullah**
Science Officer
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Email: haswati@usm.my

