

UNIVERSITY 2019

Institute of Research
Management and Services

OF MALAYA



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(1) INFRA Analysis

Main equipments (rental rate charges apply):

NO	FACILITIES	MODEL	TEST/SERVICES
1	Nuclear Magnetic Resonance (NMR 600 MHz)	Bruker AVANCE III 600MHz	1H & 13C analysis 2D analysis
2	Sample Preparation	--	Carbon/Gold Coating Chemical Treatment /CPD
3	GCMS	7890A GC/ MS Agilent 5975 Shimadzu QP2010 ULTRA GCMS	Compositional Test (Scan & SIM Mode using RTX-5 Column)
4	Confocal Laser Microscope	Leica Tcs Sp5 li	Fluorescent Imaging Life cell imaging (Time Lapse)
5	Field Emission Scanning Electron Microscope (FESEM)	Quanta FEG 450	Morphology Topography
6	Energy Dispersive X-ray (EDX)	EDX-OXFORD	Compositional
7	Surface Area Analyzer (BET)	Micromeritics ASAP2020, TRISTAR II 3020 Kr	Surface Area Pore Volume Pore Size Distribution
8	Differential Scanning Calorimeter (DSC)	Perkin Elmer (DSC-8000)	Heat Flow Analysis Specific Heat Capacity (Cp)
9	Simultaneous Thermal Analyzer (STA)	Perkin Elmer (STA-6000)	Weight Loss Melting Curves
10	Dynamic Mechanical Analyzer	Perkin Elmer	Tensile / Tension analysis Single/dual cantilevel
11	Particle Image Velocimetry (PIV)	Dantec Dynamics Nano L135-15piv	2D Analysis 3D Analysis
12	DNA Sequencer	Applied Biosystems	DNA Sequencing

(3730xl DNA Analyzer)			
13	Real Time PCR	Applied Biosystems Quantstudio (12k Flex Real Time PCR System)	Quantitative PCR Application
14	LCMS	Agilent Technologies 6550 iFunnel Q-TOF LC/MS	Qualitative Mass analyzer(MS & MS- MS)
15	UHPLC	Agilent Technologies 1290 Infinity	Qualitative
16	Ellipsometer	J.A. Woollam M-2000	Change in Polarization Optical Constant Film Thickness
17	Rheometer	TA Instruments DHR-2	Viscosity Viscoelastic
18	Tensiometer	Attension Sigma 700	Surface and Interfacial Tension Powder Wettability
19	-80°C Freezer	ESCO	Storage samples

Other supporting equipment:

NO	FACILITIES	MODEL	TEST/SERVICES
1	Microplate Spectrophotometer	EPOCH-BioTek	Measurement of transmittance or reflectance of solutions.
2	Thermal Cycler	Peqlab / PeqSTAR 2X Dual Block Gradient	Used to amplify segments of DNA via the polymerase chain reaction (PCR) process.
3	Centrifuge (up to max: 15000rpm)	Thermo / Multifuge X3 FR	Isolating suspensions & isotope separation.
4	Class II Microbiological Safety Cabinet	S@FEMATE 1.2	To serve as the primary means to protect the laboratory worker and the surrounding environment from pathogens.
5	Refrigerated Dry Bath Incubator	MK-20	Incubate sample (Temperature:-10°C-100°C)
6	Ultra Pure Water System	PALL / CASCADA	To provide ultra pure water up to 18 $\mu\Omega$, RO water, deionized water.
7	Micro Balance	Mettler Toledo / XS205	Weighing sample up to 5 decimal point.
8	Semi Micro Balance (2 unit)	Mettler Toledo / XS204 & AND / GR-200	Weighing sample up to 4 decimal point.
9	Gel Electrophoresis System	Perfect Blue / E0203	Separation and analysis of macromolecules (DNA, RNA & proteins) and their fragments base on their size and charge.
10	Gel Documentation	APLEGEN/ Omega Lum G	Use in molecular biology for the imaging and documentation of nucleic acid and protein.

11	Autoclave (3 unit)	Tomy	Used to sterilize equipment's and supplies by subjecting them to high pressure saturated steam at 121°C for a round 15-20 minutes.
12	Critical Point Dryer	Polaron CPD 7501	SEM sample preparation
13	Sputter Coater	Biorad	SEM sample preparation

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(2) INFRA HIR

Main equipment (rental rate charges apply):

NO	EQUIPMENT
1	Advance III 600 MHz NMR System
2	Atomic Emission Spectrometer 4100
3	Autoclave
4	Bench Top Refrigerated Centrifuge
5	Biolog OmniLog GEN III Combo Plus System
6	BioMark HD Reader
7	Bio-Rad CFX96 Real Time PCR
8	Biospectrum UVP Imaging System
9	C1 Single Cell Auto Prep System
10	Capillary Electrophoresis 7100
11	Cary 60 Spectrophotometer
12	CHEF Pulsed Field Gel Electrophoresis (PFGE)
13	ChemiDoc MP System
14	Comprehensive Bacterial Bioluminescence Imaging System
15	Covaris M220 AFA Ultrasonicator
16	Electrophoresis BioAnalyzer 2100
17	Fast Protein Liquid Chromatography (FPLC) Model: Akta Purifier Plus
18	Fermenter
19	Filter-Based Microplate Reader (F200PRO)
20	Flow Cytometer
21	Fourier 300 MHz NMR System
22	Fridge & -20 degree Freezer
23	Fume Hood (Ducted Bypass)
24	Gas Chromatography / Mass Spectrometry (GC/MS 5975C)
25	Gas Chromatography-MIDI (GC 7890)
26	GC/Q – TOF 7200
27	Gel Doc XR+ Imaging System

28	GeneChip GCS3000 7G Scanner
29	Gradient 384-well PCR Thermal Cycler
30	High Performance Blot Imager Model: Typhoon FLA9500
31	High Performance Computer (HPC)
32	High Resolution Compound Microscope (Model: DM6000B)
33	High Throughput NGS System [HiSeq + cBot + iCompute]
34	Homogenizer
35	Inverted Microscope
36	Ion Torrent Personal Genome Machine
37	Janus Gripper Integ Platform, Expanded NGS EXPRESS LABCHIP XT SCICLONE NGS WORKSTATION ZEPHYR NGS WORKSTATION Enspire Multimode Plate Reader Covaris S220 AFA Ultrasonicator LabChip GXII System
38	LabChip DS Automated
39	LabChip GX
40	LC-MS/MS QQQ
41	Liquid Handling System
42	Live Cell Imaging Microscope
43	Microflex MALDI-TOF Mass Spectrometry System
44	MicroRotor
45	MiSeq
46	Monochromator Based Microplate Reader
47	Motorized Multipurpose Zoom Microscope
48	Multiplex Bead-based Fluoroanalyzer (Luminex 200)
49	Nanodrop
50	Nanostring nCounter MAX Analysis System
51	NextSeq
52	NGC Quest 10 Plus Chrom System
53	Orbitrap Fusion Basic System
54	PCR machine (ABI Veriti)
55	PCR System - Quantstudio 12K

56	Protean i12 IEF Cell Protean II XL System
57	Proteaon XPR36 System
58	Qubit
59	QX200 Droplet Digital PCR System
60	Rotary Evaporator
61	Simple Light Microscope
62	Single Molecule Real Time DNA Sequencing Instrument
63	SpeedVac Concentrator
64	Stackable Incubator Shakers
65	SX-8G IP-Star Compact Automated System (Diagenode Bioruptor)
66	Table Top Scanning Electron Microscope (SEM), TM3030
67	Tissue Lyser LT
68	Tissue Ruptor
69	U725 Ultra Low Temp Freezer(-80 degree celcius)
70	Ultra High Performance Liquid Chromatography (UHPLC 1290)
71	Ultrapure water system
72	Ultrasensitive High Throughput Thermodynamic Calorimeter (Isothermal Titration)
73	Universal Refrigerated Benchtop Centrifuge
74	Variable Speed Pump Biofrac Fraction Collector Trans-Blot Turbo Transfer System Mini Trans Blot Mini Protean Tetra Tank
75	Vitek

Other supporting equipment:

NO	EQUIPMENT
1	Advantium 2 Plus Remote Alarm (Nitrogen Cylinder Low Pressure Alarm for PacBio RS)
2	Top Pan Balance
3	Fixed Angle Rotor 42.2
4	Universal Refrigerated Benchtop Centrifuge
5	Vortexer
6	Water Distiller
7	RO water
8	Ductless Fume Hood
9	Gradient 384-well PCR Thermal Cycler
10	Gradient 384-well PCR Thermal Cycler
11	96 Well Thermal Cycler
12	Qubit Fluorometer
13	Autoclave
14	Ultrasonic Cleaner
15	Ice Flake Machine
16	Orbital Microplate Shaker (Stovall Belly Dancer)
17	Top Pan Balance
18	Thermomixer C
19	Mini Rotator
20	Vacuum Pump
21	Bench Top Refrigerated Centrifuge
22	U725 Ultra Low Temp Freezer(-86 degree celcius)
23	Ultrasonic Bath
24	Freezer minus 20 degree
25	Refrigerator Lab
26	Vacuum Pump
27	Microcentrifuges
28	Drying Oven (53L)
29	Drying Oven (256L)
30	Microscope binocular & Stereo

31	Oven Incubator (256L)
32	Flake Ice Maker
33	Water Bath
34	Ultrasonic Cleaner
35	Belly Dancer
36	Mini Rotator
37	Bench Top Refrigerated Centrifuge
38	Ultrapure watersystem
39	Fume Hood (Ducted Bypass)
40	Freezer minus 20 degree
41	Ultra-Low Freezer
42	Memmert Oven [256L]
43	Memmert Oven [53L]
44	Stackable Incubator Shakers
45	Incubator [53L]
46	Biolog Turbidimeter
47	Ultrasonic Homogenizer
48	Microscope binocular & Stereo
49	Multi-Vortex V-32
50	Eppendorf Minispin Plus Microcentrifuge
51	Centrifuge Bench/Table Top
52	Mini Rotator
53	Refrigerator Lab
54	Qubit 2.0 Fluorometer
55	Semi Micro Balance
56	Top Pan Balance
57	Nanodrop Spectrophotometer
58	Upright Lab-Grade Freezer (Minus 20 Deg)
59	Automated DNA Size Selection System (Blue Pippin)
60	Thermal Mixer C (Eppendorf)

61	Oven Incubator (53L)
62	Oven Incubator (256L)
63	Microcentrifuges
64	Veriti 96 wells Thermal Cycler
65	PCR System- ECO Real Time
66	Dry Heater Block with Thermostat
67	Ductless Fume Hood
68	Ice Maker
69	Water Bath
70	Oven Incubator (53L)
71	Autoclave
72	Digital Stirring Hotplate
73	Vortex Mixer
74	Microfuge
75	Ultrapure water system
76	Hot plate stirrer
77	Multi Block Heater
78	Mini Rotator
79	Belly Dancer
80	Stirrer
81	Vortex Mixer
82	FLUOROMETER
83	FLUOROMETER
84	Thermal Mixer C (Eppendorf)
85	PCR machine (ABI Veriti)
86	Benchtop Refrigerated Centrifuge

87	Freezer minus 20 degree
88	Refrigerator Lab
89	Microscope binocular & Stereo
90	Drying Oven (256L)
91	Microcentrifuges
92	U535 Ultra Low Temp Freezer(-86 degree celcius)
93	Heraeus Pico 21 Microcentrifuge
94	Leica DM750 Compound Upright Microscope

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(3) INFRA Microbiology

NO	FACILITIES	MODEL	TEST/SERVICES
1	Microplate Reader	VERSAMAX)	Flexibility of monochromator base system that measure wavelength range 340 nm – 850nm in 96 well-plates
2	Refrigerated Centrifuge	KUBOTA 3500	Mix or blend by rotation Around a fixed axis and applying a force perpendicular spin
3	Thermocycler	PEQSTAR96X	Dna sequencing, cloning, generation of probe, quantification of DNA and RNA, studying patterns of gene expression, detection of sequence-tagged sites
4	Looplamp	la 500	Loop mediated isothermal amplification method with temperature and time setting
5	Nanodrop Spectrophotometer	IMPLEN P -300	Measuring DNA Concentration in Microliter volume
6	Gel Documentation	INFINITY VX2	To imaging and documentation of Nucleic acid and protein suspended In polyacrylamide or agarose
7	Real Time PCR	ViiA7	Monitor the amplification Of targeted dna molecule during the polymerase chain reaction
8	Automated Spiral Plater & Colony Counter	EASY SPIRAL INTERSCIENCE & SCAN 500	Automatic plating on petri dish in seconds with decreasing concentration
9	Pulse Field Gel Electrophoresis	BIO RAD CHEF MAPPER	Technique used for for the separation of large DNA molecules by applying to a gel matrix an electric field that periodically changes direction

10	Autoclave	HIRAYAMA HVE 50	To perform sterilization any contaminant with high pressure and temperature
11	Ultra Pure Water System	UUS-552A-1	To emphasize the fact that the water is treated to the highest level of purity for all contaminant type
12	Automatic Flake Ice Maker	ZBS 50	To produce ice flake in use of deactivate the microorganism
13	-25 Freezer	DW-YL270	To provide right temperature of substance based on their characteristic
14	Shaker Incubator	YIH-DER; LM-570RD	To homogenize sample with right rpm and right temperature needed
15	-80 Freezer	ESCO; UUS-793B-1	Provide extreme low temperature to maintain the characteristic of substances
16	Analytical Balance	AB204	Measure accurate weight of the substance
17	PCR Hood	PEGLAB; PCR WORKSTATION PRO	Enclosures provide the contamination free environment for most dna segment detection
18	Biosafety Cabinet Bioair®;	S@FEMATE 1.2	Provide enclosed ventilation workspace for safety working with material that contaminated that required high biosafety level
19	Stomacher	BAG MIXER 400 : W	To homogenise the sample by mixing well

For rates and other enquiries, please contact:

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Laboratory Animal Centre (LAC)

NO	FACILITIES	SPECIES	TEST/SERVICES
1	Supply of laboratory animals	i. Mice ii. Rat iii. Rabbit iv. Monkey	Animal experiments
2	Daily maintenance service	i. Mice ii. Rat iii. Rabbit iv. Monkey	Daily care for animal in quarantine and experimental
3	Daily cage rental	i. Mice ii. Rat iii. Rabbit iv. Monkey	Animal in quarantine and experimental
4	Postmortem table	n/a	To conduct post-mortem of animal

For rates and other enquiries, please contact:

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(4) Digital Object Identifier (DOI) Services

Centre of Research Services (PPP) is the Universiti Malaya coordinator for Digital Object Identifier (DOI) services and registration for the DOI system. The DOI system provides a technical and social infrastructure for the registration and use of persistent interoperable identifiers, called DOIs, for use on digital networks.

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