

Laser Capture Micro-dissection system (One)

Each specification should be described in detail with suitable literature

1. Internationally reputed certified open system.
2. Ergonomic design suitable to work at 230- 250 V, 50Hzs.
3. Sample after dissection should be contact/ contamination free.
4. Intuitive control of all microscope functions, contrast techniques including status display.
5. Contrasting techniques – transmitted light Bright field, phase contrast, Differential Interference Contrast (DIC) and reflected light fluorescence.
6. Motorized at least 6 fold Nosepiece with multi position motorized DIC turret / slider.
7. Motorized Transmitted Light Illumination.
8. Transmitted light illumination should have high performance white light.
9. Motorized condenser with numerical aperture 0.9 or better.
10. Fluorescence turret with at least 6 positions and that should be operated via Software or inbuilt keys along with narrow band pass filters for DAPI, FITC / GFP, Rhodamine / TRITC, Texas Red, CY3 & CY5.
11. Variable wavelength (>12wavelength varies between 360nm to 800 nm i.e. monochromatic) based LED illuminator.
12. Eyepiece pair must have 10x with 25mm or larger FOV.
13. High resolution Fluorescence grade objectives –4x-5x, 10x, 20x 40x, 60x or 63x/0.7NA, 60x or 63x/1.4 NA & 150x. All objectives should be corrected with UV and IR laser ranges from 300 to 900 or better.
14. To prevent the tissue damage from UV laser and it should be maintenance free, long life.
15. Motorized XY scanning stage along with specimen holders for glass slides, petri dishes & Chambered Slides.
16. Motorized multiple collection units and from various sized petri dish for live cell dissection.
17. Dissection of different samples should be in on-demand by moving the mouse/stylus pointer to mark and dissect.
18. System should have provision for multi-depth dissection for thick samples.
19. Dissection should be possible either in BrightField or Fluorescence while imaging.
20. System should have facility for long term live cell based micro dissection procedures for downstream applications.
21. High resolution cool digital camera dual mode with 2.5 mp 2/3 inch CCD sensor, fire wire cable, interface to produce 1:1 image on PC with PCI Interface Card, Fire Wire and fire wire cable 4m; with C-mount 0.70x HC. Camera should have cooling on/off facility to increase life of CCD sensor. Camera suitable with both, monochrome imaging for fluorescence & color imaging mode for Normal observation.
22. The software should contain modules to perform the functions such as control of microscope, laser, stage control, samples collection unit, dissection of samples, camera, multi-channel image acquisition and image-merging facility and auto-focus. Software should be user friendly for all applications.

- 23. System should be supplied with PC workstation (better & latest specifications to be offered at the time of actual supply)
 - Main Workstation: High performance PC Workstation with Windows 10 Professional (64 bit) operating system. Intel Xeon Quad core E5-1620 V2 3.7 GHz 10MB // 16GByte 1600RAM // NVIDIA Quadro K600 1GB high performance GPU // 2 TByte SATA hard disc drive // 16x DVD+/- RW Supermulti Drive eSATA, USB 2.0, IEEE 1394 A/B // Keyboard and mouse with Full-HD LCD-Monitor 27" or larger (1920x1080) with desk table and better configuration for proper support of system.
- 24. Air compressor of international make based, anti-vibration table to mount complete system.
- 25. Proof of agreement should be mentioned point wise in the catalogue.
- 26. Building management system compatible.
- 27. System should be supplied with matching UPS.
- 28. Equipment warranty: Three year from the date of installation with after sale service
- 29. Should have proven track record for last 5 years
- 30. List of installation in the government research organization to be furnished along with contact details
- 31. The supplier will be responsible for Installation and commissioning of instrument at ICFMD, Argul, Bhubaneswar, Odisha at no extra cost. International validation will be subsequently done by a third party. Any discrepancy will be met by the supplier.

Automated DNA/RNA extraction system (01)

Each specification should be described in detail with suitable literature

1. Internationally reputed make, Ergonomic design; BMS compatible
2. Should be compatible to reagents and plastic wares from a wide range of reputed international suppliers
3. Should quickly and easily purify DNA, RNA, Viral RNA, micro RNA etc from a wide variety of samples
4. Systems should be able to process 8 to 96 samples in a single run
5. Software should enable simulation of protocol/programme before actual run/start & to estimate time to complete the assay. Appropriate warning system to monitor the run.
6. Software should have unlimited license which will enable multiple users and offline use.
7. Should have provisions for adding new protocols/programme for nucleic acid extraction
8. Should have user friendly software for data management and documentation
9. Should have the design for increased safety and low between and within run cross contamination
10. Should offer precise and robust pipetting
11. Should have at least 6 deck positions and fully automated deck framing
12. Transfer of reagents and nucleic acid from variety of labware options for downstream applications
13. Heat block option for applications requiring temperature control
14. Should have provision for decontamination
15. Should be compact and easily fits on to lab benches
16. Should allow purification and processing steps to be performed in 96 well plate (deep well and PCR plates)
17. Should have provision for liquid waste collection
18. The whole unit should be automatically supervised and controlled by microprocessor.
19. RS 232 interface
20. Should have Electrical outlet (compatible with Indian Plug-top)
21. Voltage/ Frequency 220-240V/50-60 Hz
22. Equipment warranty: Three years from the date of installation with after sale service
23. Should have proven track record for last 5 years
24. List of installation in the government research organization to be furnished along with contact details
25. The vendor should provide a compatible UPS back up

26. The supplier will be responsible for Installation and commissioning of instrument at ICFMD, Argul, Bhubaneswar, Odisha at no extra cost. International validation will be subsequently done by a third party. Any discrepancy will be met by the supplier

Dry heat sterilizer (1 number)

1. Internationally reputed make
2. Ergonomic design and compatible to building management system (BMS)
3. Should be Microprocessor based digitally controlled equipment suitable for daily usage.
4. Should have double walled construction, External/Internal Material: SS Steel 316 or better
5. Size of inner chamber approx 55x55x70 cm with internal lighting facility
6. Useful volume approx: 300-350 lit
7. Insulated door fitted with heavy hinges, mechanical door lock.
8. Temperature range 30-250°C, digitally temperature setting accuracy
9. Forced uniform air circulation, Digital safety thermostat.
10. Delayed start and stop function, high quality heating element
11. Tem. Set and display sensitivity: <1 °C
12. Tem. Variation: ± 1 °C
13. No. of Shelves : Minimum 4 (tilt proof chromium plated or better quality)
14. Silicon or better door gasket to ensure zero leakage during the operation
15. Microprocessor control system and digital displays, control panel option
16. 24 hour timer for preheating or timed shutdown, with temperature sensor
17. Alarm for sterilizing and fault state, buzzer alarms when a cycle of sterilization is completed
18. Provision for door safety locking system
19. RS 232 interface
20. Voltage/ Frequency 220-240V/50-60 Hz
21. Equipment warranty: Three years with after sale service in India
22. Should have proven track record for last 5 years
23. List of installation in the government research organization to be furnished along with contact details
24. The supplier will be responsible for Installation and commissioning of instrument at ICFMD, Argul, Bhubaneswar, Odisha without any extra cost.

Media filtration system (0.20 micron) BT: (One number)

1. International make for sterilization and clarification of tissue culture media, antibiotics
2. Ergonomic design for easy, one-person operation
3. Compatible to building management system (BMS)
4. Filtration Area 0.1 m² to 1.5 m²
5. Should have vacuum filtration unit, along with appropriate peristaltic pump or vacuum pump with hose and accessories including Vacuum oil, pressure tubing, adapters, gaskets.
6. Process volume: minimum 10 liters
7. Minimum Feed Flowrate: 100 mL/min
8. Maximum Operating Pressure: 5 bar g
9. Filter pore size 0.22µ, pyrogen < 0.5 eu/ml,
10. Receiver capacity up to 10 liter
11. Tubings and Fittings 316 stainless steel grade or better
12. Polymers medical grade epoxy silicone/glass
13. Transfer Pump (Tubing dependant)
14. PES or equivalent grade filters
15. Maximum Operating Pressure: more than 4 bar
16. Includes downloading software with USB cable
17. Voltage/ Frequency 220-240V/50-60 Hz
18. Equipment warranty: Three years with after sale service
19. The supplier will be responsible for Installation and commissioning of instrument at ICFMD, Argul, Bhubaneswar, Odisha without any extra cost.

Roller apparatus-Bench top (in incubator) (01 number)

1. Internationally reputed make
2. Ergonomic design and compatible to building management system (BMS)
3. Vibration free smooth rolling start and stop
4. Speed range from 0.1 to 2 rpm and is adjustable in steps of 0.1
5. Provision to monitor and document cell cultivation
6. Shall be provided with control unit
7. Shall be connected to a printer or PC
8. Audio visual alarm in case of power failure and motion loss
9. Capacity: 16 roller bottle (8 decks, 2 vessels per deck), scalable
10. Compatible roller bottles; up to 29 cm length, 10-12 cm diameter
11. Detachable control unit that can be kept outside of the incubator
12. Voltage/ Frequency 220-240V/50-60 Hz
13. Equipment warranty: Three years with after sale service in India
14. Should have proven track record for last 3 years
15. List of installation in the government research organization to be furnished along with contact details
16. The supplier will be responsible for Installation and commissioning of instrument at ICFMD, Argul, Bhubaneswar, Odisha without any extra cost.

ELISA Reader

Each specification should be described in detail with suitable literature

1. Internationally reputed make.
2. Microprocessor based PC controlled along with stand alone ELISA reader with after sale facility with FDA, IVD CE and ISO certification.
3. Power Requirement: 220-240V, 50Hz.
4. Photometer: 8-12 measurement channel and 1 reference channel (Minimum)
5. Wavelength range: 340-750nm and better.
6. Absorbance range: 0 to 4.0 OD.
7. Should have a photometric accuracy of $\pm 3\%$ or better.
8. Should have multi label and kinetic measurements.
9. Light source: Halogen Lamp with lamp save features.
10. Should be able to work at wide range of ambient temperature.
11. Should have external printer connectivity option.
12. Essential spares like fuses and lamp should be included.
13. Voltage/ Frequency 220-240V/50-60 Hz.
14. Windows based software along with lifelong license with latest computer with 17" TFT screen, UPS (~~2KVA~~ with minimum of 30 minutes backup) & 2 years of comprehensive warranty.
15. Warranty: 03 years with after sale service in India
16. List of user and installation during last 3 years must be provided.

Circulating refrigerated water bath

1. Internationally reputed make.
2. Ergonomic design and compatible to building management system (BMS).
3. The instrument is based on advanced micro-processor technology with temperature control
4. Operation through key pad
5. Bench top model
6. 8- 10 liter capacity
7. Tank made up of stainless steel
8. Immersed components are corrosion resistant
9. Temperature range of 0°C-100°C with accuracy of $\pm 0.2^{\circ}\text{C}$
10. Circulating water bath pump: A. Maximum pressure: 8.1 PSI (56 millibars)
B. Maximum Flow rate: $>15\text{lit/min}$ (adjustable)
11. Should be compatible with voltage/ Frequency 220-240V/50-60 Hz
12. Heater capacity: $>2\text{ KW}$
13. With reservoir Drain valve, rack for test tubes, insulated tubing for water circulation
14. High temperature auto cut with over temperature alarm set point can be adjusted
15. Should be provided with thermostat and inbuilt compressor
16. Should have digital display
17. Equipment warranty: Three years with after sale service in India
18. List of user and installation during last 3 years must be provided.

Glassware washing Machine-FM

1. Reputed make. Floor standing model
2. Ergonomic design and compatible to building management system (BMS)
3. Body for heat and sound insulation and inner cabinet should be of 316 stainless steel grade
4. Racks with rails of type 316 stainless steel should be provided with detachable large spindles for washing narrow- neck glassware. Glassware holders, clips, nozzles and additional interchangeable small spindles should be included.
5. Capacity: 150 litres or better
6. Rack should accommodate a variety of inserts for holding beakers, culture tubes and other special glassware.
7. It should contain Display preferably LCD for customizing cycles and monitoring all Operation.
8. It should maintain water recirculation rates for thorough cleaning.
9. It should have Dual pumps, one for washing and one for draining with inbuilt filters
10. Built -in steam generator that produces hot vapor to penetrate and remove dried residue for cleaner glassware.
11. Audible Alarms with display for Hot Glass, Please Wait, Water Low, Water High And Overflow.
12. Manual fill detergent dispenser for powder or liquid detergent.
13. Manual-fill rinse aid solution dispenser
14. Cleaning of wide range of laboratory glassware's such as beakers, test tubes, washing bottles, graduated cylinders, volumetric flasks, conical flasks, pipettes etc. of various capacities per wash cycle as;

Type	Volume	Units to be washed
Conical flask	100ml	25-30
Conical flask	250ml	15-20
Conical flask	500ml	10-15
Conical flask	1000ml	5-10
Conical flask	2000ml	2-5
Glass bottle	100ml	25-30
Glass bottle	250ml	15-20
Glass bottle	500ml	10-15
Glass bottle	1000ml	5-10
Glass bottle	2000ml	2-5

Vendors can quote separate racks with accessories for washing pipettes (5-10 ml capacity) and media bottles (5-10 liter capacity)

15. Voltage/ Frequency 220-240V/50-60 Hz
16. Equipment warranty: Three years with after sale service in India
17. List of user for last 3 years in India to be provided