

**Post Pre-Bid Clarifications/Corrigendum for Tender specifications**

**against the NIT No.RCB/ATN/27-42/18-19**

Subsequent to the pre-bid meeting held with the prospective bidders on 11/12/2018, the specifications for various items for some of the tenders were reviewed in the light of the points raised by the prospective bidders for the respective items and few changes are made in the technical specifications for the following items (in consultation with the respective users) as under .:

**Cage change Station: Tender No. RCB/ATN/27/18-19**

NO CHANGES IN THE TENDER SPECIFICATIONS

**Ultrasonic Sonication Device : TENDER No. RCB/ATN/28/18-19**

The following specification have been modified:

1. **Specification no.3:** The instrument should be able to process at least 6 samples at a time.
2. **Specification no.4:** The instrument should be able to sonicate sample volumes form as low as 100 microliters to as high a 8 milliliters.

All the other specifications and the terms and conditions of the tender remain unchanged.

**Ball Mill Tissue Homogenizer: Tender No. RCB/ATN/29/18-19**

Regarding point # 5 'The system should be upgradable to accommodate up to 192 samples', the representative from Verder Scientific Pvt Ltd mentioned that although their system can be upgraded to accommodate 192 samples, but the upgradation is only possible with components available from other vendors. Since overall the upgradation is possible, the specification #5 remains unaltered.

Regarding the same point the representative from Ginger Science mentioned that cryo-processing is not available for 192 samples. Since this is not an essential requirement and has not been indicated in the specifications, the specification # 5 remains unaltered.

Regarding point # 10a 'The following accessories must be quoted with the unit: a) Grinding adapter sets (2 Nos) each accommodating at least 20 tubes of 2 ml each capacity', representative from Verder Scientific Pvt Ltd mentioned that their system can only accommodate 10 samples of 2 ml capacity each at each station. Since the samples numbers that can be processed simultaneously gets drastically reduced (from at least 40 to only 20 Nos), this specification requirement cannot be modified.

Representative from Qiagen India Pvt Ltd mentioned (please see attached letter) for point #10a that adapter accommodating 24 or more samples can be quoted by all manufacturer. Since the specifications mentions 'at least 20 tubes' and will accommodate 24 or more requirements, this specification remains unaltered.

Overall the specifications remain unchanged for the Ball Mill Tissue Homogenizer.

**IVC System for Mice: Tender No. RCB/ATN/30/18-19**

NO CHANGES IN THE TENDER SPECIFICATIONS

**IVC System for Rat: Tender No. RCB/ATN/31/18-19**

NO CHANGES IN THE TENDER SPECIFICATIONS

**Analytical Balance: Tender No. RCB/ATN/32/18-19**

NO CHANGES IN THE TENDER SPECIFICATIONS

**Precision Balance: Tender No. RCB/ATN/33/18-19**

NO CHANGES IN THE TENDER SPECIFICATIONS

**Laminar Hood: Tender No. RCB/ATN/34/18-19**

**TECHNICAL SPECIFICATIONS FOR HORIZONTAL LAMINAR FLOW HOOD**

1. Heavy-duty stand mounted with levelling feet and caster wheels for mobility.
2. Cabinet should have Isocide antimicrobial coating on all painted surfaces.
3. Cabinet should have internal dimensions of (WxDxH) minimum 1185 x 625 x 570 mm.
4. Clear transparent, scratch-resistant side panels, with vertical removable sash.
5. Filtration: ISO class 3 air quality work zone as per ISO 14644.1 standard.
6. High efficiency particulate Air (HEPA) filtration system in 0.1  $\mu$  to 0.3  $\mu$  operating at an efficiency of >99.999%.
7. Disposable pre-filters for filtering large particulates.
8. Bench area: One piece, stainless steel, rust-proof and chemical-proof, with curved front edge. Bench surface isocide coated to eliminate >99.9% of surface bacteria.
9. Work zone to be made up of SS 304.
10. Air flow: Initial air flow should be minimum 90 fpm. Horizontal unidirectional air blower operating at 0.45 m/s. Permanently lubricated and energy efficient centrifugal blower with external motors. Low-noise (less than 60 dBA) and vibration free operation.
11. Built-in warm white light of greater than 1200 lux illumination.
12. Germicidal UV lamp – 1 No., 2 number choke-less fluorescent lamps, one service fixture for gas/vacuum/air inlet, 2 electrical sockets
13. Power supply of 220-240 V, 50 Hz.
14. **GUARANTEE/WARRANTY PERIOD: THE TENDERERS MUST QUOTE FOR 5 YEARS**  
Post-warranty CMC for another 5 years shall be separately quoted.
15. A height adjustable, ergonomic laboratory stool should be included free of cost. Bidder should provide evidence of installation of the same/similar model in reputed research institutions/universities across India, and satisfactory performance certificate from 5 users should be provided.

## **FPLC System Tender No. RCB/ATN/35/18-19**

Please see attached letter from a representative from Bio-Rad Laboratories (India) Pvt Ltd.

Addressing concern raised against point '1. Pump section (a)' the flow rate desired cannot be altered considering the diverse requirement of the system. Hence the specification indicated remains unchanged.

Addressing concern raised by supplier against point # 8, the specification may be changed to 'One software licence and two evaluation software should be supplied with the purification unit for data analysis'.

All others specifications remain unaltered as their changing will affect the scientific requirement of the system.

## **GPU Workstation Tender No. RCB/ATN/36/18-19 RCB**

**The following clause in the Specifications stands DELETED :-**

“OEM of GPU Workstations quoted by the bidder should have been featured in at least 5 GPU based workstations listed in the recent Top500 list ([www.top500.org](http://www.top500.org))”

The above clause has been removed from tender document GPU Workstation

**All others specifications remain unaltered as their changing will affect the scientific requirement of the system**

## **Incubator Shaker Tender No. RCB/ATN/37/18-19**

NO CHANGES IN THE TENDER SPECIFICATIONS

## **Fermentation System Tender No. RCB/ATN/38/18-19 RCB**

Bids are invited for a **fermenter system** with specifications as below:

Application:

- Aerobic, microaerobic and anaerobic microbial cultivation for bacteria, yeast and fungi

General:

- Autoclavable vessel system with possibility of vessel size upgradation.
- All electrical and electronic parts should be splash protected.
- The equipment should comply with standard agencies, such as American Society of Mechanical Engineers (ASME) Pressure Vessel, Food and Drug Administration (FDA).
- Requisite comprehensive maintenance manual, equipment operational manual, calibration certificate and software operational manual of the system to be supplied.

Fermentor Vessels:

- Working volume range - 0.8 to 2.2 litres.
- Maximum volume holding capacity for vessels - Not more than 3 L.
- Vessels to be jacketed for temperature control.
- Cylindrical / Graduated with flat or curved bottom

- Lids: Non corrosive metallic with silicone gasket or c/ Clamp or magnetic closures - no screw tightening.
- Ports for addition of acid, alkali, antifoam, feed, sparger air inlet, Jacket inlet and outlet, transfer line, Septum injection ports, sampling, agitator, exhaust gas cooler etc. must be there.
- Compatible design with high pressure up to 1 bar.
- Maximum permissible reactor temperature >121 °C (Autoclave)
- Vessel should be autoclavable filled along with connected tubing and reagents. (acid/base/antifoam/feed).

Probes:

- Optional Probes to be supplied for vessel: biomass measurement (OD600 of 0-150). Online measurement of these parameters must be possible.

Controller:

- A single controller with ability to control process parameters such as pH, dissolved oxygen, temperature, stirring speed, feed rate, anti-foam, etc. should be provided along with the fermenter vessel.
- The controller should have the capability to run interchangeable fermenters of different sizes.
- The controller should be splash-protected or splash resistant.
- The controller should be latest generation PID-based controller with the ability for cascade control automatically without user intervention.
- Cascading of RPM, air and pure oxygen to control dissolved oxygen is must
- A touch screen interface to guide the user through operation of the controller. System must display online overview of all process parameters on the controller screen itself.
- Remote access of process parameters via. internet must be possible.
- Fermenter controller must have capability to integrate other online, offline and inline data and/or signals (mA or mV) from other equipment.

Agitation System:

- Rushton turbine as well as pitched-blade impellers must be provided with the vessels along with the necessary adapters, if needed. Stirrer speed must be in the range 100 - 1000 RPM (or higher) with ability to program and control the stirrer speed in a cascade mode using the provided software.

Peristaltic Pumps:

- Minimum 4 peristaltic pumps should be provided. Of these,
  - 2-fixed/variable speed pumps in-built in the system dedicated for acid and base addition, along with suitable bottles (250 ml) and caps and connectors for universal bottles.
  - 1 variable speed hi-precision pump in-built for nutrient feeding connected to the Microprocessor based control system for nutrient feed operable in continuous mode with minimum flow rate of  $\leq 0.01$  ml/min along with suitable bottles (250 ml) and caps and connectors for universal bottles.
  - 1 external stand-alone hi-precision pump (of the same make as fermentor or of Masterflex) for solution addition operable in continuous mode with minimum flow rate of  $\leq 0.01$  ml/min
- All pumps must be configurable using the control system provided.
- Suitable tubings for the solution addition

### Aeration System

- Two mass flow controller to be supplied for reactor, one for air and second for oxygen.
- Provision for mixing at least two gases (air and oxygen) in precise ratio using MFCs should be there.
- MFC minimum flow rate for each  $\leq 0.01$  ml/min
- Air filtration with autoclaveable membrane filter
- Sparger: Ring or L Type and should have the options to clean.

### Dissolved Oxygen (DO)

- Probe
  - sterilizable fast response and low drift Dissolved Oxygen sensor with cable
  - optical oxygen sensor with integrated opto-electronics, having the full functionality of a measuring device with self-diagnostics
- Control:
  - Cascade control function with any one and any combination of the following parameters (stirrer speed, aeration rate, oxygen rate, gas mix etc.) simultaneously,
  - Capable of controlling DO in a range of 0 - 100% saturation (within 1% accuracy).

### PH Control System

- Controller can be user defined controller for manipulation of critical control parameters
- Adaptive PID Control: within 0.1 pH set points, with facility for dead band, control by addition of acid and base.
- Indication: Digital display
- Probe: sterilizable pH probe with plug and cable
- Dose monitoring of Acid / Alkali for additions during the batch.

### Exit Gas Analyser (to be quoted as optional):

- Offline or online measurement of CO<sub>2</sub> (0.01 - 10% range) and O<sub>2</sub> (<1% to 30%) in the exit gas

### Sampling and Harvest System

- Aseptic and sterilizable sampling system
- Automated sampling system (to be quoted as optional)

### Chiller

- Chiller of sufficient capacity to maintain temperature of fermenters in the temperature range 15 °C below ambient at full working volume must be provided

### Air Compressor:

- A low noise, oil-free compressor with pressure gauge and moisture trap must be provided.

### Vertical autoclave system

- Autoclave system sufficiently large for autoclaving fermenter system (vessels and bottles) should be provided.

### Spare parts for trouble free and maintenance free operation

- Must include one spare pH sensor and DO probe along with its consumables and buffers.
- 3 dozens of air filters for inlet and outlet
- One additional set of all O rings, septums etc.
- Three additional sampling bottles

- Silicon and tygon tubings as required, with minimum supply of Masterflex Silicon and acid/base resistant tubings of 14 mm, 16 mm and 25 mm sizes.

Operation:

- The system must allow the fermenters to be run in batch, fed-batch and continuous mode with continuous monitoring and control of pH, DO, temperature and RPM.

Hardware and software for data logging and fermentation process control:

- Windows based Supervisory Control and Data Acquisition (SCADA) software for monitoring and control of various parameters with security features.
- The software must have capability for remote log in through LAN for real time data login and process control.
- Must have facilities for process validation, batch management features, multi-parameter display, time based programming of set points, regulation of process by both measured and calculated variable (by using equations), equation writing and its integration for control of fermenter parameters, ability to set both high and low limits and alarms, graphic/plotting, off-line data integration (data sheet may be compatible with MS Excel etc. and batch reports.
- It should have facilities for manual override of all values, set points and process parameters during the process and Recipe controls. The quote must include both software and hardware.
- Software to be free of license renewal, and support for minimum 5 year should be included.

Computer:

- Computer/laptop (Branded) with 32" monitor, Intel Core i7 processor, 8 GB RAM, 1 TB Hard disk, 3 no's of USB ports, CD/DVD drive, along with other accessories

Comprehensive Warranty

- CMC for at least extra 4 years must be provided with on-site service in addition to 1 year warranty
- The amount for CMC would be released annually.
- If there's a downtime of the equipment for more than 1 week, 10% of the CMC cost will be deducted for each week of non-operation beyond 1 week.

**Hybridization Oven Tender No. RCB/ATN/39/18-19 RCB**

NO CHANGES IN THE TENDER SPECIFICATIONS

**Gradient PCR Tender No. RCB/ATN/40/18-19 RCB**

Should have a Gradient or Veriflex, Alloy/ silver block for 96 x 0.2ml PCR tube or 96 well PCR plate or 3X32 wells x0.2ml block, with option for two for more PCR blocks gradient/ non gradient for ultimate throughput Or with an option of gradient block for dual 48/48 well x0.2ml

Should have temperature differential range of 1-24 deg C or more.

**UV Spectrophotometer Tender No. RCB/ATN/41/18-19 RCB**

NO CHANGES IN THE TENDER SPECIFICATIONS

**Chemi Luminescent Imager Tender No. RCB/ATN/42/18-19 RCB**

System should have a LED light source of UV Trans /Epi- light 365nm, Blue Trans/Epi- light, 460nm & White Epi Light 470 to 635nm

**Rest of the technical specifications and terms & conditions to the tenders remains the same (unchanged).**

**Last date for submission of sealed bids remains the same upto 28.12.2018 (upto 14:00 hrs) and opening of Tenders (Technical Bids) will be on the same day 28.12.2018 at 15:00 hrs.**