

Sealed Tenders are invited by the Principal, PSGR Krishnammal College for Women, Coimbatore- 641004 upto **5.00 P.M** on **31.01.2023** (Separate Technical bid and Commercial bid) from the specialized reputed Indian firms having their GST Number, for the following equipment to be purchased under **DBT BUILDER scheme**:

1. Floor model ultra-centrifuge
2. Electroporator
3. Nanodrop UV-vis spectrophotometer
4. -20 degree freezer
5. Workstation with accessories
6. Micropipettes (variable & fixed)
7. Refrigerated centrifuge
8. Orbital shaking incubator
9. pH meter
10. Weighing balance
11. Magnetic stirrer
12. Heating block

Further details can be obtained from Dr. K.S. Tamil Selvi, Department of Botany upto 5pm on 25-01-2023.

IMPORTANT

1) The Tenders should be sent by Registered Post and "Tender for Equipment for DBT BUILDER" should be mentioned on the cover

2) Address to send the Tenders

The Principal
PSGR Krishnammal College for Women
Avinashi road
Peelamedu
Coimbatore 641 004
Tamil Nadu
0422 4295959

3) Important Dates

Last date for receipt of the Tenders at our institute - 5pm on 31.01.2023

Technical specifications for the equipment to be purchased under DBT-BUILDER scheme at PSGRKCW

(For all the instruments warranty of one year or more must be provided.)

Floor model Ultracentrifuge centrifuge: Specifications

1. Operational Control Requirements:

Centrifuge should have the following control specifications

1. Maximum Speed: 100,000 rpm
2. Maximum RCF (x g): 8,00,000
3. Speed Control accuracy: ± 2 rpm of set speed
4. Set Temperature range: 0 to 40°C in 1°C increments
5. Temperature Control: ± 0.5 °C of set temperature
6. Temperature display: Actual rotor temperature in 0.1°C increments
7. Ambient Operating Range: 10 to 35°C or more
8. Acceleration Profiles: 10 or more
9. Deceleration Profiles: 11 or more
10. User- Defined Program feature with at least 100 programs.
11. Sample imbalance protection: ± 5 ml or 10% whichever is greater
12. Easy-to-use Large 15-inch LCD Screen based touch user-interface.
13. Large Full Color touchscreen display with adjustable positions.
14. Drive: Frequency-controlled, brushless direct-drive induction motor.
15. Instrument should have inbuilt optical disk and safety features which can sense and calculate the rotor inertia energy and stops the system to prevent rotor failures if rotor run above its energy.
16. Remote control of instrument from multiple sources including computer, by cell phone, iPod touch, iPad.
17. Instrument should be featured with Switched Reluctance Drive technology for high speed with high torque that allow rapid acceleration and deceleration rates without compromising integrity of samples.
18. Adaptors to accommodate small volume samples without sacrificing the maximum g force of the rotor.
19. Company should have dedicated application specialists with a proven track record to provide training as and when required and should also have an application-training Center in India. The company must have to provide comprehensive training to our technical staffs/students/Scientists.

20. Application and service support should be directly provided by the company.
21. Instrument should be able to handle volumes starting from small such as 2ml to large volume 1500ml.
22. Quoted model must have at least 15 installations supplied to various reputed Universities/ institutes/ICAR/CSIR institutes throughout India in past 3 years and the bidders should submit a installations report of the quoted model. Bidder should also provide a user list and at least 5 user satisfactory certificates from recognized research Institute/University in India where the instrument quoted model has been extensively used for similar applications.

System should be able to perform minimum following applications:

Extraction of extracellular vesicles, exosomes from different samples of varying volumes

1. Swing Bucket Rotor:

- i. Rotor Capacity: 6 x 38.5 ml or more
 - ii. Rotor Speed: 32,000 rpm or more
 - iii. Rotor g-Force: 170,000 x g or more
 - iv. Rotor k-factor: 206 or less
 - v. Material: Titanium
- a. Include 50 numbers of Ultra clear tubes of 38.5 ml or higher capacity that can be run at 32 000rpm and 1,75 000x g
 - b. Include 25 numbers of thick wall poly propylene tubes of 31.0ml or more that can be run at 32,000rpm and 1,75,000 x g.
 - c. Include 50 numbers of sealable poly propylene tubes of 15ml or more that can be run at 32,000rpm and 1,75,000 x g.
 - d. Include 50 numbers of sealable conical poly propylene tubes of 8.4 ml or more that can be run at 32,000rpm and 1,75,000 x g.
 - e. should also include floating spacers for lower volume.

The above-mentioned technical specifications are highly desired. However, lower technical specifications may be considered if the above-mentioned specifications are found to be unsuitable in financial terms. The Institute reserves the right to go for lower specifications taking into consideration its financial constraints and technical preferences.

Electroporator : Technical specifications

- The electroporator system must allow universal electroporation, i.e., transfect all cell types, from primary and stem cells to bacteria and yeast including those that are resistant to chemical transfection
- The system should have preset protocols that include the most common mammalian and plant protoplasts, bacteria and yeast
- The electroporation system should provide both exponential and square wave forms.
- The system should offer flexibility — choice of programs for preset protocols, optimization protocols, manual operation, and/or user protocols
- The electroporation system must offer reproducibility — using arc quenching features to ensure reproducibility and sample protection
- The electroporator must deliver up to 3,000 V and should be compatible with any electroporation buffer
 - Pulse Voltage : 200-2500 V
 - Capacitor : 10UF,2500V
 - Pulse Discharge
 - Charge Time : <8S

Must be programmable for voltage settings.

Refrigerated Centrifuge

- Temp. range 0 to + 40 deg C
- Short spin key
- Fast cool option & stand by cooling
- Facility to put “at set rpm” function
- 10 acceleration & 10 deceleration rates
- Equipped with Automatic rotor recognition and Imbalance sensor results in prevention of over speeds.
- Motorized lid latch-automatic lid locking
- Choice of various fixed angle rotors; 30x1.5/2.0ml, 48x1.5/2.0ml, 20x5.0ml, 6x15/50ml, 6x85ml.
- Ability to spin 15 ml and 50 ml falcon tubes and oak-ridge tubes at 11000 rpm and 16000g with 6x85/50 ml fixed angle rotor, adaptor should be available for volumes from 1.5 ml to 85 ml (Such as 2.0ml, 5.0ml, 7.0ml, 15 ml, 18ml, 20ml, 30ml, 50ml)
- The fixed angle and swing out rotor (4x100ml, 4x250ml) should accommodate both round bottom tubes as well as falcon tubes.
- Rotors should come with Aerosol tight lid.
- All rotors should be made of aluminum and autoclavable at 121 C.
- Should have Timer 1 min to 99 min. with continuous run function short-spin.
- Should have facility to validate speed temp and time with certified device.
- Centrifuge must be ISO and European CE certificate.

Nanodrop Spectrophotometer

- It should be compatible for DNA, RNA & Protein quantification.
- It should be equipped with Laptop/Desktop with 2 KVA UPS
- It should have measuring wavelength range 220 to 900 nm
- Wavelength accuracy should be ± 1 nm • Photometric range should be 0 to 1.5 Abs • Sample volume should be 1-2 μ l
- Light source should be Xenon flash, Wavelength Setting And Scanning automatic
- Spectrum measuring time should be 3 sec or less
- Type of spectrophotometer UV-Visible, single beam and monochromator type of holographic grating.

-20 degree freezer

Temperature : -18 to -20 degrees

Capacity : 180 to 200 Litres

pH Meter

The direct reading Laboratory pH meter (Digital) operable at 230V +/- 10V A.C., 50 Hz power supply with necessary cable connections and other standard accessories required for smooth operation.

1. The measurement of pH, mV, and temperature should be possible.
2. Range of pH measurement should be 0 to + 14.00.
3. Accuracy for each pH measurement should be ± 0.005 .
4. For calibration, pre-programmed buffer sets should be supplied, and automatic buffer
5. recognition and display should be possible, with maximum 3 point calibration, manual
6. calibration with selected buffers should be possible.
7. Should have dead stop function.
8. Range for mV should be -999.9 to +999.9. Accuracy for each mV measurement
9. should be ± 0.3 mV.
10. Auto range function for mV, which can be switched off, if needed.
11. Temperature measurement range should be from 0 to 120°C.
12. Accuracy for temperature ± 0.1 °C.
13. Selection for °C and automatic switch over to manual temperature input when no
14. temperature input is connected.
15. Two channel for pH, mV and temperature measurements.

Incubator Shaker

1. Compact Bench top shaker with temperature control range from Ambient +5°C to 60°C
2. Orbital shaking with orbit diameter of 25 mm
3. Temperature control accuracy $\pm 0.5^\circ\text{C}$ of set point
4. Speed 50-350 rpm with accuracy of ± 2 rpm
5. LED display for temperature and speed
6. Universal platform and clamps to hold flasks of various capacity
7. Tray Dimension : 420 x 420 mm
8. Safe view of samples through internal glass door, without impact on temperature
9. Automatic restart after power interruption
10. Thermostat cut off for over temperature protection
11. Noiseless operation
12. Operational voltage - $220 \pm 20\text{V}$, 50 Hz
13. Two years standard warranty from the date of installation

Heating Block

- Temperature range ambient +5°C to 110°C, with rapid heat-up time
- Stability: $\pm 0.1^\circ\text{C}$
- Uniformity: $\pm 0.1^\circ\text{C}$

Hotplate stirrer

- a. Maximum stirring speed- upto 1500 rpm with stepless speed control and good speed stability
- b. Heating Capacity -300W
- c. Top plate Size -150x150mm
- d. Maximum capacity-2L
- e. Temperature range- up to 300 °C
- f. Temperature accuracy- $\pm 1^\circ\text{C}$
- g. Temperature control-PID and digital energy regulatory mode
- h. Hotplate-Should be chemically resistant to acid and alkali
- i. Top Plate Material-Stainless steel
- j. Controls for both hotplate and stirrer should be provided with suitable indicators.
- k. Necessary electrical cables and magnetic beads should be provided.
- l. Warranty-1 year

Micropipettes

- a. Variable Volume Micropipettes feature built-in tip ejectors and autoclavable tip cones.
- b. easy to calibrate and maintain, and easy to disassemble for autoclaving.
- c. Manufactured as per ISO 9001:2008,. Each pipette should be individually calibrated according to ISO 8655 standards
- d. Calibration certificate must be provided with each pipette.
- e. Accuracy and Precision values should be those laid down in the ISO 8655 standards.

Variable volumes:

20-200 μl with increments in 1 μl

2-20 μl with increments in 0.2 μl

100-1000 μl with increments in 2 μl

0.5-10 μl with increments in 0.1 μl

Weighing Balance : Nos – 2

- 1) Weighing Capacity : 220g
Readability : 0.1mg
Weighing chamber height: 209 mm
Pan Size : 90mm dia
Linearity : < +0.2mg
Repeatability : < + 0.1mg

- Rectangular all Glass Draft Shield opening from three sides

- 2) Weighing Capacity : Upto 1kg
Accuracy : 10mg

Gel Documentation system

Auto-focus and Auto-exposure required.

Touch-screen functionality required

Display resolution 1,024 x 768 pixels 9.7 in. (24.64 cm) display

Maximum image area 21 x 14 cm (W x H)

Detector 6.3 MP CMOS

Pixel size 2.4 x 2.4 μm

Bit depth (gray levels) 65,536

Dynamic range >3.5 orders of magnitude

Excitation source :

- Trans-UVB (standard)
- Epi-white (standard)
- Trans-white (with optional White Tray)
- Trans-blue (with optional Blue Tray)

Emission filter 535–645 nm (standard)

Data output 16-bit or 8-bit: SCN, TIFF, JPEG image

Operating voltage 100–240 VAC, 50–60 Hz

Operating temperature 10–28°C

UV Spectrophotometer

Double-beam spectrophotometer with single monochromator

Silicon photodiode detectors

Wide wavelength range – 190 to 1100 nm

Fixed bandpass 1.0 nm for high resolution measurement

High-speed scanning up to 8,000 nm/min