

Inter University Centre for Evolutionary and Integrative Biology (iCEIB), University of Kerala, Kariavattom,

Thiruvananthapuram, Kerala, India - 695581

TENDER -Pl.A1/CEIB/17

Dated 01.12.2017

E-Tender Notice

Inter University Centre for Evolutionary and Integrative Biology (iCEIB), University of Kerala, Kariavattom, invites open tender through e-Procurement (two cover system) from the Original Equipment Manufacturers or their Authorised Dealers for the supply, installation and commissioning of HPLC with Accessories

Last date and time for submission of tender online	16.12.2017 at 5.30 pm
Date and time of opening of tender	20.12.2017 AT 11.00 A.M
For technical details contact	Prof. M.C. Subhash Peter, Honorary Director, Centre for Evolutionary and Integrative Biology, University of Kerala. Phone No. 9447044657 E-mail: subashpeter@yahoo.com

[For further details logon to www.etenders.kerala.gov.in](http://www.etenders.kerala.gov.in)

TECHNICAL SPECIFICATIONS of HPLC with Accessories

Specifications:

The HPLC system shall include the following individual stackable self-contained modules.

1. High Pressure Binary - Two Individual Solvent Delivery Units

- It should be High Pressure Binary Two individual pumping system with Gradient Mixer
- It should be capable of standalone operation
- It must be a high speed double micro-plunger in-parallel pump with automatic pulsation correction mechanism achieving pulse-free solvent delivery.
- The flow rate should be settable between 0.0001 to 10 ml/min
- Flow rate accuracy should be $\pm 1\%$ or $\pm 0.5 \mu\text{l}/\text{min}$ of set value whichever is larger
- Flow rate precision must be less than $\pm 0.06\%$ RSD
- Pressure setting range should be 5800psi and above
- The precision of composition must be less than 0.1% RSD.
- Automatic rinsing of plunger must be available.
- It must have a leak sensor as safety feature.
- Suitable Manual Injector to be quoted with Mixer, Loop and Syringe

2. Detectors

Electrochemical Detector

- Operating modes - DC, PAD and Scan
- Potential range - between +2.00 and -2.00 V in 10 mV increments
- Output - between +1 and -1 V or between +10 and -10V (20 bit D/A converter)
- DC mode
- Ranges - 10 pA - 200uA in 1, 2, 5 steps
- Filter (cut off) Advanced digital filter, 0.5 - 0.001 Hz, 1, 2, 5 steps
- Noise - better than 2 pA with a dummy cell (load of 300 M and 0
- 0.5uF, filter off, E_c +800mV and temperature of 30 Deg C

Pulse Mode

- Range - 10nA - 200 uA in 1, 2, 5 steps
- Filter (cut off) Advanced digital filter, 0.5 - 0.001 Hz, 1, 2, 5 steps

times – t1: 100 - 2000ms; t2: 0- 2000ms; t3:0-2000ms in 10 ms steps

Scan mode

Range – 10nA - 200uA in 1, 2, 5 steps

Scan rate – 1 - 50 mV/s in 1, 2, 5 steps

Auto mode

DC mode (5 files) and pulse mode (4 files), cycle time,

– Number of cycles and oven temperature.

Photodiode Array Detector

– Wavelength range 190–800nm

– A deuterium lamp [D2] and a Tungsten lamp [W] should be available as Light

Source for UV and visible wavelengths respectively.

– The photo-diode array detector should have 512 elements and an element resolution of 1.2nm/element must be available

– The flow cells must be temperature controlled from ambient $\pm 5^\circ\text{C}$ to 50°C

– Wavelength accuracy should be ± 1 nm-

The Drift must be smaller than 0.5×10^{-3} AU/Hour

The Noise Level must be smaller than 0.6×10^{-5} AU

Linearity should be equal or more than 2.0AU (ASTM method)

A Conventional flow cell [12 μL volume, 10 mm cell path length, 12

MPa pressure max.]

3. Column Oven

– Column oven with Heating and cooling function, It should be forced-air-circulation type for uniform temperature distribution with a quick feedback mechanism to maintain constant temperature level even when power source voltage fluctuates. Temperature control range should be (room temperature -10) to 80°C ,

4. Degassing Unit

Membrane degassing unit for 3 flow lines should be quote

5. System Controller

It should function as a communication bus module with data buffering capability

Suitable system controller or equivalent to be quoted.

Suitable Chromatography Software to be quoted

Suitable interface to connect the Electrochemical detector to be quoted

6. Data Management System

Suitable computer with Laser printer

7. Accessories

a. Columns

- o Analytical C18 HPLC Column 4.6 mm x 250 mm, 5 μ - 1 no's
- o Sample Solvent Filtration Kit

8. The supplier must provide training for the users of the instruments at site as well as at the supplier's application laboratory, after installation and commissioning. Details of the training program must be attached with the tender.

9. Software upgrades like version ups, if any, should be done without any cost

10. System must come with at least 12 months warranty against defective parts.

General Conditions:

1. The tender shall be submitted in the two bid viz. Technical Bid and Financial Bid. Only those qualified in technical bid will be eligible for participating in financial bid. A presentation regarding the technical specification and item to be supplied shall be done before the technical evaluation committee if requested.
2. The bidder should be a manufacturer or their dealer specifically authorized by the manufacturer to quote on their behalf for this tender as per Manufacturer Authorization From and Indian agents of foreign principals, if any, who must have designed, manufactured, tested and supplied the equipment(s) similar to the type specified in the "Technical Specification". Such equipment must be of the most recent series/models incorporating the latest improvements in design. The models should be in successful operation for at least one year as on date of Bid Opening.
3. **Compliance Statement:** Along with the technical details provide a tabular column indicating whether the equipment quoted by you meets the specifications by indicating

'YES' or 'NO'. If 'YES', support the claim by providing original brochures. **Venders should provide clear brochures/data sheets about the equipment and it's working. Also include adequate proof for the claim regarding the performance.**

4. **Reference:** Names of Institutes with contact person and telephone/ email where similar equipment supplied by you in India [Preferably South India] shall be mentioned in the bid.
5. Incomplete & conditional tenders and tenders received after the due date will be summarily rejected without assigning any reasons thereof.
6. The price should be inclusive of all taxes, duties, transportation, insurance, installation etc. Nothing extra will be paid in addition to the quoted rate. Any amount in Indian rupees for installation, commission, labour, spares, service etc shall be entered in item 2 of BoQ.
7. **Payment Terms:** 90% payment shall be made through irrevocable LC on presentation of complete and clear shipping documents and balance 10% of the amount shall be released after the receipt, installation commissioning and acceptance of the equipment.
8. **Validity of tender:** Tender submitted shall remain valid at least for 120 days from the date of opening the tender. Validity beyond 120 days, from the date of opening of the tender shall be by mutual consent.
9. **Delivery and installation:** Proposed delivery schedule should be mentioned clearly. Delivery and installation should be made at the Centre for Evolutionary and Integrative Biology, University of Kerala, Kariavattom campus, Trivandrum without extra cost. University of Kerala will provide customs duty exemption certificates if required.

10. Service facility: Supplier should mention their details of service setup and manpower in Thiruvananthapuram who are responsible for after sales support.
11. The model number, make, and a printed literature of the product shall submit positively.
12. In case of any dispute, the decision of the University authority shall be final and binding on the bidders.
13. The undersigned reserves the right to reject any or all of the tenders received without assigning any reason thereof.
14. If any component is found to be defective during the warranty period, the vendor has to replace the defective item immediately at their own cost.

Documents to be Uploaded

- 1 Signed Compliance Matrix
- 2 Detailed Technical Brochure
- 3 Under taking of support for next 10 Years
- 4 BoQ
- 5 DD/Hard copy of Bank Guarantee if opted

**The Registrar,
University of Kerala,
Senate House campus, Palayam , Trivandrum- 695 034, Kerala.**