

**Global Tender Notification for the procurement of  
“Automated Fast Protein Liquid Chromatography (FPLC) system”  
at the Evolutionary Venomics Lab, Center for Ecological Sciences,  
Indian Institute of Science, Bangalore**

**December 22, 2022**

Dear Sir/Madam,

**Subject: Automated Fast Protein Liquid Chromatography (FPLC) System  
for research laboratory uses**

This is a request for global tender quotations for the purchase of an “Automated Fast Protein Liquid Chromatography system”. This machine will be used to purify protein samples at the lab level using different types of chromatography such as Gel filtration, Ion exchange, Affinity, etc.

FPLC is exempted from local tendering, and this machine’s GTE is listed (List. No.121) in the GOI office memorandum dated 21<sup>st</sup> June 2022, No.F. 4/1/2022 – PPD (Pt.).

**Terms and conditions for submission of bids**

- ❖ Your quotation should clearly indicate the terms and conditions of the quotation, delivery schedule, entry taxes, customs duty if any, payment terms, warranty coverage, etc.
- ❖ **The quotations should be submitted in two bids system, i.e., Technical bid and Commercial bid.**
- ❖ The technical bid must include all the details of the instrument’s technical specifications along with terms and conditions masking only the price component. Bill of materials, brochures, technical datasheets, and any other document may be enclosed to help the evaluation of the technical bid. The Technical bid should have an item-wise compliance report of all specifications indicated below. Prices quoted should be inclusive of all taxes, duties, delivery of the items to the site and installation
- ❖ The commercial bid must include the price of the instrument in Indian/Foreign currency FOR-IISc Bangalore basis.
- ❖ The warranty should be for a period of 3 years from the date of installation. Annual maintenance contracts for 2 years after the warranty period may be quoted separately.
- ❖ We prefer to make payment by Letter of Credit – 90% against the presentation of documents and 10% after installation. In addition to this, LC Amendments, Extension, and Confirmation charges, if required, are to be borne by the beneficiary.
- ❖ If the goods are found to be defective, they must be replaced/rectified at the cost of the suppliers within 15 days from the date of receipt of written communication from us. If there is any delay in replacement/rectification, the warranty period should be correspondingly extended.
- ❖ Customs Duty Exemption certificate will not be provided by the Institute.

- ❖ Conditional tenders will not be accepted.
- ❖ The purchaser reserves the right to accept or reject any bid, to annul the bidding process, and to reject all bids at any time before the award of the contract, without incurring any liability to the affected bidder or bidders.
- ❖ **Please submit your bid valid for 90 days** along with the terms and conditions
- ❖ **The last date to submit your bids is January 15, 2023**

### **Technical Specifications of FPLC (Automated Protein Purification System)**

- Completely Bio-compatible inert, fully automated modular system to maintain protein integrity and labile post-translational modifications.
- System capable of running at flow rates ranging from 0.001 – 25 ml/min, Max flow rate, isocratic (wash / column packing) is 50 ml/min.
- System should operate in a pressure range from 0 – 20 MPa with an accuracy of +/- 1.2%.
- The system should have a dual pump with types: Piston pump and metering type/reciprocating
- The system should come with a multi-wavelength detector which enables simultaneous monitoring of 3 or more different wavelengths in the range of 190-800 nm or similar with the following UV-Vis parameters simultaneously without changing the lamp or light source: a UV range of at least 0 to >2 AU with the noise of less than 0.1 mA and minimum UV linearity of  $\pm 5.0\%$
- The system should have a gradient mixer and must be capable of creating as well as executing binary gradient elution programs between 0-100% of the elution solvents or solvent mixtures
- The system should be supplied with a minimum of 2 inlet lines for buffers, an inject valve for sample injection, and minimum 2 outlet lines. Additionally, it can have the option of a mixer bypass for sample loading through system pumps.
- The system should be upgradeable to include a column switching valve with software-controlled column bypass/forward flow/reverse flow operations as well as the connection of up to 5 columns or more.
- The system should have the option to add a pH valve with a flow restrictor at a post-column position which can be bypassed using the software. It should be able to monitor pH with an accuracy of  $\pm 0.1$  pH units and with a pH monitoring range between 0-14.
- The software should be able to incorporate variable delay volume based on the position and length of the column and tubing. Ideally, the delay volume of the system should be less than 250uL.
- System should have a lamp- no warming up and no heat-up time option and automatic switching off the lamp in standby mode to ensure a long lamp lifetime. The system should have optical fiber-based light delivery to the detector.

- System UV detector should have an absorbance range of at least -6 to +6 AU crucial for sharp peaks. Useful when samples give reading in the negative spectra of the absorbance.
- Sensitivity is 4 decimal units with an optical path length of 2 mm and the option of 5mm
- System should have the capability to run in bypass mode with up and down the flow by bypassing the column.
- The system is pre-assembled with predefined tubing.
- System should be supplied with a conductive monitor for conductivity measurement between 0.01ms/cm to 999.9 ms/cm. The system should be supplied with automated temperature compensation and flow restrictor.
- System should have the external detectors through an I/o box and be capable of doing software-controlled multistep purification.
- The system should be supplied with a covered fraction collector with the capability of collecting fractions in deep well plates (24, 48, or 96 well) and/or tubes and capable of using 3, 8, 15- and 50-ml tubes, with additional capabilities of collecting in 250 ml bottles as well, minimizing spillage and cross contamination, collecting samples ranging from 0.1-250 ml.
- Fraction collector should be capable of being used in time, volume, or peak recognition mode.
- The system should be supplied with an outlet valve of 5 ports.
- The system should come with an in-built pressure sensor to regulate the flow rate and the system should be compatible with running in a cold cabinet/ cold chamber.
- The system should be supplied with all accessories like tubing, connectors, ferrules, etc., that are biocompatible and should be equipped with basic tools for routine maintenance and smooth operation of the FPLC system.
- System should be software-controlled, software to be intuitive, interactive process pictures, and simplified evaluation. Full control during manual and programmed runs.
- Software control with Method Queues resulting in attending operations.
- Scheduling of the backup (user results file) should be automated.
- System should be provided with licensed standalone evaluation software for decongestion of work on the main system.
- Watch functions included in the system
- The system should have basic control features as well as connectivity of an external computer system for software controls. The system and Software should be fully GLP/GMP compatible and should be capable of upgradation to a US FDA 21CFR Part11 compliant version.
- The system software should have an inbuilt feature to queue up various purification methods for attended purification, real-time control, and modification of pre-designed methods during the run to enable method optimization as well as the option to turn off lamps to save lamp capacity.
- Software should be freely upgradeable along with the upgradation of system firmware to allow operations of a system through upgraded software.

- Software should have an in-built library of columns from vendors as well as third-party vendors.
- Software should be capable of analyzing data files generated from the same software as well as equivalent external software.
- System should be provided with sample loops of sizes: 100 ul, 200 or 250 ul, 500 ul, 1 ml, 2 ml, and 5 ml for sample loading. 23. Instrument and fraction collectors should be supplied with a minimum of 3 years of warranty.
- Instrument should be provided with a compatible desktop computer with the following specifications or similar: 22-inch monitor, i7 processor, 16 GB RAM, and Windows 10, 64-bit system for software-based instrument control, operations, and data analysis.
- The participating vendors/firms should have provided and installed the same system at a minimum of 10 research labs in centrally funded technical institutes (IISc, IITs, NITs) and national research labs within India. A detailed list of users along with contact information of at least 5 primary users must be provided.

For the FPLC system and software, the participating firms must quote all-inclusive delivery prices and the entire shipment must be insured from the manufacturer's warehouse to the installation site at IISc.

**Important: Please note that the FPLC system should match all technical specifications listed above. Submitted technical bids should contain a detailed compliance certificate as per the technical specifications listed in the tender document.**

Both the Technical and Commercial bids should be put in separate sealed envelopes and put together in another cover stating, “**Automated Protein Purification System-FPLC**” and should reach us on or before January 10, 2023, to the below address.

**‘The Chairman, Centre for Ecological Sciences, 3rd Floor, Biological Sciences Building, Indian Institute of Science, Bangalore 560012, Karnataka, India’.**

Any further queries can be made to [ksunagar@iisc.ac.in](mailto:ksunagar@iisc.ac.in) and copy mark to [office.ces@iisc.ac.in](mailto:office.ces@iisc.ac.in).

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