Global Tender Notification for the procurement of
"Automated Fast Protein Liquid Chromatography (FPLC) system."
at the Department of Developmental Biology & Genetics,
Indian Institute of Science, Bangalore

June 20, 2023

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 (Item No.118) in the GOI, MOF office memorandum dated OM No. F.4/1/2023-PPD Dated 03.04.2023.

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 and Commercial bids.**
- The technical bid must include all the details of the instrument's technical specifications and terms and conditions masking only the price component. Bill of materials, brochures, technical datasheets, and other documents may be enclosed to help evaluate the technical bid. The Technical bid should have an item-wise compliance report of all

specifications indicated below. Prices quoted should include all taxes, duties, delivery of the items to the site and installation.

- The commercial bid must include the instrument's price in Indian/Foreign currency CIP/CIF - IISc Bangalore basis.
- The warranty should be for a period of 3 years from the date of installation. Annual maintenance contracts for two years after the warranty period may be quoted separately.
- 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.
- 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 11th July 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 - 10 ml/min or more.
- System should operate in a pressure range from 0 - 20 MPa or more 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 that enables simultaneous monitoring of 3 or more different wavelengths in the range of 190-800 nm or similar.
- 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 have a minimum of 2 inlet lines for buffers, an inject valve for sample injection, and 1 or more 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 and 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 ± 0.1 pH units and with a pH monitoring range between 0-14.
- Automatic switching off the lamp in standby mode to ensure a long lamp lifetime.
- System should be able 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.
- Fraction collector should be capable of being used in time, volume, or peak recognition mode with multimodal collection capabilities.
- 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.
- System should be provided with license-free standalone evaluation software for decongestion of work on the main system.
- The system should have basic control features and 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 and the option to turn off lamps to save lamp capacity.
- Software should be freely upgradeable along with the upgradation of system firmware to allow system operations through upgraded software.
- Software should have an in-built library of columns from vendors and third-party vendors.
- Software should be capable of analyzing data files generated from the same software and equivalent external software.
- System should be provided with sample loops of sizes: 100 ul, 200 or 250 ul, 500 ul, 1 ml, 2 ml, 5 ml, 10 ml and 50ml for sample loading.
- Instrument and fraction collectors should be supplied with a minimum of 3 years of warranty.

• Instrument should be provided with a compatible computer with the following specifications or better: i7 processor, 16 GB RAM, suitable display and Windows 10, 64-bit system for software-based instrument control, operations, and data analysis.
• Following accessories must be included with the system – 1). Chemiluminescence imaging capable gel documentation system. It should be capable of imaging agarose gel and Coomassie-stained acrylamide gels. Motorized camera and capable of cumulative image acquisition. Must have internal control system with 2 TB storage or external if supplied should meet the desired specification. Appropriate UPS to be included. 2). Semi-dry gel transfer apparatus for western blotting. It should be capable of two midsized gels. All components to be included for the unit. 3). Appropriate cold cabinet capable of holding the FPLC system. 4). The supplier must include columns (for gel exclusion [superdex 75 and 200 or equivalent], ion exchange [Q, DEAE, and phenyl Sepharose], and affinity purification [Ni and GST resin columns]) and appropriate resins along the system. Ion exchange and hydrophobic selection kit should be inlcuded.
• The participating vendors/firms should have provided and installed the same system at least five research labs in centrally funded technical institutes (IISc, IITs, NITs) and national research labs within India. A detailed list of users and contact information of at least five 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 11-07-2023 to the below address.

'The Chair, Department of Developmental Biology & Genetics, Ground Floor, Biological Sciences Building, Indian Institute of Science, Bangalore 560012, Karnataka, India'.

Any further queries can be made to deepaksaini@iisc.ac.in and copy mark to office.dbg@iisc.ac.in.

Dr. Deepak K Saini
Professor
Department of Developmental Biology & Genetics
Biological Science Building
Indian Institute of Science,
Bangalore 560012.