CSIR - NATIONAL PHYSICAL LABORATORY
Dr. K. S. Krishnan Marg,
New Delhi – 110012 (INDIA)

Contact: 011 4560 8624
Email: sr.cosp@nplindia.org
purchase-so1@nplindia.org

From: Director, CSIR-NPL
Tender No. 14-VI/AG(1112)22PB/T-95

Dated: 26.09.2023

CORRIGENDUM

With reference to NPL's Global Tender ID: **2023_CSIR_725366_1**, Pre-Bid Conference (PBC) was concluded on 05.09.2023 for "HPLC-MS System". Consequent upon the outcome of PBC, **some changes have been made in the technical specification of captioned tender. Revised specifications are as follows:**

Tender Specifications for Supply, Delivery, Installation & Commissioning of Highly Sensitive Liquid Chromatograph Triple/Tandem Quadrupole Mass Spectrometer System (HPLC-MS system).

Sr. No.	Features	Revised Specifications
1.	**Mass Spectrometer system**	• Triple/Tandem Quadrupole with suitable mechanisms for Qualitative and Quantitative analysis with calibration, auto-tuning facility.
(i)	**Interface**	• The interface between UHPLC and Mass Spectrometer should be capable of handling large batches of samples with complex matrices over a long period of time. • The cleaning and maintenance of ion source should be tool free. The ion source should be preferably cone based, if desolvation line/Capillary source is quoted, an additional 5 desolvation lines/capillaries should be provided along with the main system
(ii)	**Flow Divert Valve**	• The source of the system must be capable of handling a flow rate of up to 2 ml without splitting. The system should have an option of divert valve to divert flow into waste as and when required. The diverter valve should be software controlled
(iii)	**Ion Source**	• The MS should employ an angle spray which is an orthogonal-flow sprayer or equivalent technology which enhances the sensitivity across a wide range of LC conditions and reduces maintenance costs. • The system must have combined/ Multimode source to run ESI and APCI modes in a single run. • Dedicated ESI source, Dedicated APCI source and combine/multimode source/dual ion source should be quoted. All three ion source should be quoted separately.
(iv)	**De-solvation Temperature**	The MS interface must withstand high desolvation temperature of 650 °C for ESI and APCI 500 °C or better. The desolvation temperature must be user selectable.
(v)	**Mass Analyzer**	Triple Quadrupole-based mass analyzer with collision cell.
(vi)	**Mass Range**	Mass range should between 5 to1500 m/z or better.

(vii)	**Mass Stability**	The mass stability should be 0.1Da over 24 hours or better.
(viii)	**Scanning Speed**	The scan speed should be 20,000 amu/sec or more.
(ix)	**Polarity Switching**	The polarity switching time should be 15 milliseconds or less.
(x)	**Mass Resolution**	Resolution should be below 0.7 Da in both Q1 and Q3
(xi)	**Mass Accuracy**	The accuracy must be less than +/- 0.15 u
(xii)	**Sensitivity**	**ESI Positive:** S/N **10,00,000:1** for 1pg reserpine on column **or** Instrument Detection Limit (IDL) <1 fg **ESI negative:** S/N**10,00,000:1** for 1 pg chloramphenicol on column **or** Instrument Detection Limit (IDL)<1 fg • The sensitivity specifications must be documented on the official specification sheet published by OEM/ principal company. No lab-generated data will be entertained.
(xiii)	**Cross talk**	The cross talk should be less than 0.005%
(xiv)	**Dynamic Range**	5 Orders or better
(xv)	**Collision Cell**	MS-MS capability must be available in Q2/MS2 via collision-induced dissociation (CID). The collision cell must be capable of performing high-speed MRM analysis as fast as 500 MRM in one Second.
(xvi)	**Dwell time & Pause time**	Dwell time and pause time must not be more than1 millisecond.
(xvii)	**Vacuum System**	The vacuum system should have a compatible turbo-molecular pump and rotary pump
(xviii)	**Detector**	Should be an electron multiplier tube (EMT) detector or photomultiplier tube (PMT) or Discreet dynamo detector (DDD), Channel electron Multiplier or HED
(xix)	**Scan Mode**	Should be capable of performing MS scanning. • Production scanning • Precursor ion scanning • Neutral loss/gain scanning Multiple reaction monitoring
(xx)	**Integrated Auto-Tuning/Calibration Device:**	• The calibration of the mass spectrometer should be fully automated. • The device must be fully controllable from the instrument software
2.	**High-Performance Liquid Chromatography System**	UHPLC System with Quaternary Gradient system, Autosampler, Column Oven, UV Detector should be offered.
(i)	**Solvent Delivery Unit (Pump)**	• Quaternary/Binnary gradient system to handle 4 solvents. • The Flow rate range should be from 0.001to2ml/min or better • Flow rate precision should 0.1% RSD or less • Max. Pressure tolerance capacity should be 15000 Psi/124 MPA or more.
(ii)	**Degassing Unit**	Online degassing unit should be offered with 4 or more flow lines.
	Auto-Sample Injector with Sample Cooler	• The autosampler design should have a variable injection volume between 0.1 µl to 50 µl and a minimum of 80 vials of 1.5 ml or 2 ml capacity

		• Injection volume accuracy of +/- 1% • Injection volume precision of 0.3% RSD • The Carryover must be 0.005 % or less
(iii)	**Column Oven**	The column heater temperature range should be 30 deg C to 65 deg C or better
(iv)	**UV Detector**	Wavelength Range: 190 – 700 nm or better range
		Light Source: Deuterium
		Noise: 5 x 10^{-6} AU or lower
		Linearity: 5 % or at 2.5 AU or better
3.	**Software System:**	
(i)	**Method Package**	Pesticide method Package should be provided
(ii)	**Software Platform for Multi analyte Data Confirmation and Review**	Software workflow for simplifying data review and transforming data processing for streamlining quantitative data review and optimized workflows and should have provision to review the detected peaks and confirm the quantitative results by color coding and flagging. All compounds can be included, or a summary report can be created of just the compound that failed to pass the defined criteria. The tabulated report can include calculated concentrations, ion ratios, and chromatograms for all sample data files.
(iii)	**Software Features**	A single software platform must be provided for seamless control of all the modules of LC and MS. The software must be able to perform the following activities: (a) 'Automatic Optimization of MRM' using Flow injection mode. (b) It must be designed for various acquisition modes such as MS Acquisition mode and MSMS acquisition mode (c) It must have 'MRM triggered full scan MS/MS' function to have additional information and confirmation of target compounds. (d) It should have a database for a minimum of 800 contaminants or more including pesticides, antibiotics, mycotoxins, etc. pertaining to their Molecular formula, mono isotopic mass, parent ion, collision energy, production, RT, Sensitivity, ion ratio, etc.
(iv)	**Software Upgradation**	The Vendor should upgrade the LCMS MS software to the latest version free of cost for a period of 2 years from the date of installation
4.	**Columns (2 Nos.)**	RP C-18 columns: 150 mm x 3.0 mm, 2.5 micron i.d.
5.	**Nitrogen Gas Generator**	Suitable Nitrogen Gas Generator with inbuilt compressor and 99.9% purity must be quoted along with other gas requirements
6.	**Workstation** (Data acquisition, processing, storage and analysis system)	1no. of Branded PC with Xeon processor, 23" or better Screen, 10 TB HDD, minimum 512 GB SSD, 64 GB RAM, and mono laser jet color printer must be provided.
7.	**Preparatory HPLC System**	**Pump -Binary pump** Flow rate: up to 20-22 ml /min or better Flow rate accuracy: 1 % Manual Dual Injector (Analytical & Prep with switching Valve), 20 µl and 2 mL Loops **UV Detector** Wavelength range 190-700 nm Suitable C- 18 Column (19mm X 150mm X 5 micron) Suitable fraction collector

		1 no. of Branded PC with i7 processor, 23 "TFT Screen, 1 TB HDD, 16 GB RAM etc.) and mono laser jet printer has to be provided.
8.	**Warranty**	Warranty of the whole system along for 2 Years should be quoted. The warranty terms should cover the complete hardware (LCMSMS, Nitrogen generator, Prep HPLC system, and software)
9.	**On-site Training**	On-site training for 2 persons for 2 weeks needs to be provided
10.	**Service & Support**	The supplier/OEM should have a service support center and spare part inventory in Delhi. The vendor should confirm the availability of spare parts for the next 10 years from the date of purchase of the equipment.

Therefore, following extension in due date of submission & date of opening of the said tender may be read exactly as follows:

Due date & time of tender submission
For : 26.09.2023 up to 3:00 PM (IST)
Read as: 10.10.2023 up to 3:00 PM (IST)

Date & Time of Tender Opening
For : 27.09.2023 at 3:00 PM (IST)
Read as: 11.10.2023 at 3:00 PM (IST)

All other terms & conditions of said tender will remain the same.

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Sr. Controller of Stores & Purchase

भारतीय निर्देशक द्रव्य विभाग

Indian Reference Material Division # 5.01

Date: 05.09.2023

Subject: Minutes of the TSC meeting pertaining to HPLC-MS was held on dated 05.09.2023

A pre-bid conference was held on dated 5th Sep 2023 at CSIR-NPL to discuss the specifications of HPLC-MS. The following TSC members and external experts were invited to attend the meeting:

1. Dr. H.K. Singh (Chief. Sci.)	Chairman
2. Dr. Vandana Tripathy (Pr. Sc., AINP)	External Expert
3. Dr. JC Biswas (Chief Scientist)	Member
4. Dr. T. K. Mandal (Chief Sci.)	Member
5. Dr. Sachchidanand Singh(Chief. Sci.)	Member
6. Dr. Anjana Dogra(Sr. Pr. Sci)	Member
7. Arvind Gautam(Sr. Sci.)	Indentor

Due to their official engagement, the following members did not attend the meeting -

- Dr. JC Biswas (Chief Scientist)
- Dr. T. K. Mandal (Chief Sci.)

The following OEM/vendors are attended the pre-bid conference:

(i) M/s PerkinElmer India
(ii) M/s.Spincotech Pvt Ltd. (Shimadzu India)
(iii) M/s. Waters India
(iv) M/s. Sciex India

The TSC Chairman welcomed all the members of TSC and external expert and vendors. The chairman briefed about the objective of the meeting. The indenter presented the general specifications of the HPLC-MS and had a thorough discussion on generalizing the specifications.The valuables suggestions were given by the TSC chairman, by External expert, vendors and by other committee members. As per the suggestions of TSC members and external expert, and vendors the revised specifications sheet and suggestions from vendors is attached herewith for your kind consideration as Annexure-I & II.