

Minutes of Pre-Bid Conference (PBC) held on 02.03.2021 for proposed procurement of "HIGH RESOLUTION MASS SPECTROMETRY BASED PLASMA PROTEOMICS AND METABOLOMICS" - 01 No.

As scheduled (PBC) has been conducted on 02.03.2021 for proposed procurement of "**HIGH RESOLUTION MASS SPECTROMETRY BASED PLASMA PROTEOMICS AND METABOLOMICS**".

Scientists / Members of the Technical Sub Committee (TSC) present -

1. Dr. R Sanakaranarayanan, Chairperson, T&PC
2. Dr A B Patel, Member, T & PC
3. Dr P Chandra Shekhar, Member, T&PC
4. Dr B Raman, Member, T & PC
5. Smt. Asha Ramesh, Member, TC & Head, Inst.
6. Dr. Mandar V Deshmukh, Chairperson & TC.
7. Dr. Swasti Raychaudhari, IO
8. Dr. R Nagraj, External Expert.

Dr. G R Chandak, PL could not attend the meeting being on official tour.

Representatives of the following FOUR firms attended the PBC :

Sl. No.	Name of the Firm (M/s.)	Name of Representative
1.	M/s. Thermo Fisher Scientific India Pvt. Ltd.	Dr Pariti Sastry & Sh. Raj Kumar
2.	M/s. Bruker India Scientific Pvt. Ltd.	Sh. Sricharan Nethala & Dr Raja Sekhar
3.	M/s. Agilent Technologies India Pvt. Ltd.	Sh. M. Shesh Kumar & Sh. Arun Kumar
4.	M/s. Water India Pvt. Ltd.	Sh. Prabhugari Raj & Dr. Shiva

Other representative of M/s. Water India also joined through weblink.

The following points were raised and discussed during PBC as per request made by the participating bidders:

The following points were discussed during the PBC:

Queries raised by M/s. Bruker India Scientific Pvt. Ltd.

1. To modify as Mass resolution to "60000" instead of 100000".
2. To modify Acquisition rate from ">15 Hz" to ">20 Hz"
3. To modify Fragmentation specification from "HCD" to "HCD/CID".
4. To modify the Detector specification from "VWD" to "VWD/PDA"

Queries raised by M/s Thermo Fisher Scientific India Pvt. Ltd.

1. To include the “ **ESI Nano source**” in Source ionization Technology specification.
2. To modify Acquisition rate from “ >15 Hz” to “ **>20 Hz**”
3. To modify Fragmentation specification from “ HCD” to “ **HCD/CID**”.
4. To modify the Detector specification from “ VWD” to “ **VWD/PDA**”

Queries raised by M/s. Agilent Technologies India Pvt. Ltd.

1. To modify as Mass resolution to “ **60000**” instead of 100000”.
2. To modify Acquisition rate from “ >15 Hz” to “ **>20 Hz**”
3. To modify Fragmentation specification from “ HCD” to “ **HCD/CID**”.
4. To modify the Detector specification from “ VWD” to “ **VWD/PDA**”
5. To modify the Flow cell specification of “ Please quote flow cells of different volumes up to 12 µl to “ **specify the Flow cell volumes**”

Queries raised by M/s. Water India Pvt.Ltd.

1. To modify Mass range specification “ minimum 50 to maximum 5000 or better” to “ **minimum 50 to maximum 8000**”.
2. To modify Acquisition rate from “ >15 Hz” to “ **> 40 Hz**”
3. To modify Fragmentation specification from “ HCD” to “ **HCD/CID**”.
4. To modify flow range from “ 50nl/min – 2000 nl/min without flow splitting” to “ **200nl/min – 2000 nl/min without flow splitting**”
5. To modify injection reproducibility specification of “ Max 0.2% RSD for entire range” to “ **0.5% RSD or more**”
6. To modify Flow range specification of “Pump should have flow rate from 0.001 to 5ml per minute to “ **maximum up to 2ml**”.
7. To modify Solvent compressibility compensation specification of “User selectable or predefined based on mobile phase compressibility” to “ **user selectable or predefined based on mobile phase compressibility/Automatic**”.
8. To modify the Detector specification from “ VWD” to “ **VWD/PDA**”
9. To modify the Wave length range from “ 190nm to 900nm” to “ **up to 700 nm**”
10. To modify System operating temperature range “ 5 -30°C” ambient temperature to “ **5 - 22°C**”


All four participating firms informed that they do not have problem with other points of tendered specifications and requirements. They were informed by the **TSC** that points raised by them will be examined further by the **CCMB Technical Committee/TSC** and changes to be agreed after due consideration with reference to tendered requirements and end use by **TSC**, if any, will be uploaded in **CPPP** website as part of **revised/ amended** tendered specifications in due course as per tendered terms and conditions for information and reference of prospective bidders on or before **04.03.2021 (15.00 Hrs.)**. It has been also informed that the institute may consider the possibility of reverse auction in **CPPP** website subject to technical feasibility and any decision in this regard will be communicated through **CPPP** website.

All participating bidders have been requested kindly to take a note of changes in tendered specifications and related terms and conditions subsequent to **PBC** held today i.e. **02.03.2021** before they start submitting their online bids as per schedule provided in **CPPP** website on this subject.

Bidders Representatives-



M/s. Thermo Fisher Scientific India Pvt.Ltd.



M/s. Bruker India Scientific Pvt. Ltd.



M/s. Agilent Technologies India Pvt.Ltd

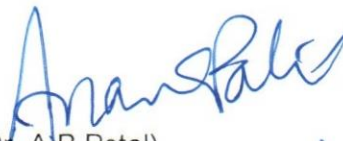


M/s. Water India Pvt. Ltd.

Members of TSC



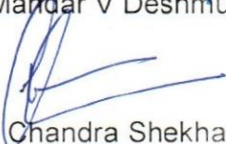
(Dr. Mandar V Deshmukh)



(Dr. A B Patel)



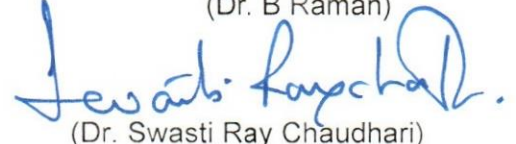
(Dr. B Raman)



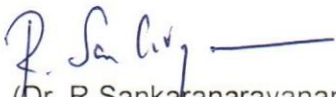
(Dr. P Chandra Shekhar)



(Smt. Asha Ramesh)



(Dr. Swasti Ray Chaudhari)



(Dr. R Sankaranarayanan)



(Dr. R Nagraj)

SPECIFICATIONS FOR HIGH RESOLUTION QUANTITATIVE MASS SPECTROMETRY SETUP FOR PLASMA

PROTEOMICS AND METABOLOMICS

SPECIFICATION FOR HIGH RESOLUTION MASS SPECTROMETER		
SNo.	SPECIFICATION	REQUIREMENT
1	Application Capability	Quantitative Mass spectrometry setup for Plasma Proteomics and metabolomics
2	Mass range	Minimum 50 to Maximum 5000 or better
3	Mass Accuracy (PPM)	Internal calibration: <1 ppm External calibration: <3ppm, the external calibration should hold for more than 24 hrs. For Plasma proteomics, the inter and intraday mass accuracy should be < 1ppm for 5 days minimum with internal calibration.
4	Mass Resolution	Minimum 1,00,000 for the mass range of 50 to 1000 M/z
5	Sensitivity	Should have femto gram sensitivity in MS/MS i.e. 200fg of reserpine should produce S/N of 100:1.
6	Analyzer Technology and ion optics	Quad, Trap, OrbiTrap, TOF,FT, IMS or combination thereof
7	Source Ionization Technology	The System should have ESI source capable to handle flow rate up to 1ml/min for UHPLC inlet mostly. Must be compatible with all commercially available and homemade Columns for Mass Spectrometry analysis. Accordingly, flexible temperature controlled sources should be provided. ESI Nano source should be provided.
8	Ion polarity Mode	Dual Mode (Positive and Negative)
9	Acquisition rate	> 20 Hz.
10	MS ⁿ	At least MS ²
11	Dynamic range	>5000:1 or 5 order with claimed mass accuracy
12	Sample Handling	Automated
13	Fragmentation	HCD/CID
14	Tuning and Calibration	Automatic, internal calibration with reference standard required
	COMPUTER AND SOFTWARE	
15	System Control &	Latest Configuration (hardware & OS).

A collection of handwritten signatures and initials in blue ink, including a large signature on the left, a circled 'S' in the center, and several other initials and names on the right.

	Data system	In addition to system control PC, a separate Xeon processor base high-speed system with 64 GB Ram, 1 TB HDD ,22 inch monitor for proteomics database processing should be quoted separately
16	Software feature	System software should be capable of detecting, recording and analyzing the data. Software package should include latest versions of data acquisition, data processing, qualitative, quantitative analysis, targeted screening, for label free and labeled quantification, data mining analysis etc. for proteomics and Metabolomics application software to be included
SPECIFICATION FOR NANO LC		
1	APPLICATION	For proteomics applications. Must be compatible with all commercially available and homemade columns for Mass Spectrometry analysis. Accordingly, flexible sources should be provided.
	PUMP	Must have direct pumping system with Nano flow capability without flow splitting
2	Pump Type	Binary gradient pump
3	Flow range	200 nL/min – 2000 nL/min without flow splitting
4	Max Pump Pressure	0- 1000 bar or more
5	Flow accuracy	±1 % of full scale
6	Gradient Delay Volume	<1 µL
7	pH range	2-10 or more
8	Solvent Compatibility	For wide range of solvents like Water, ACN, FA ,TFA , MEOH etc.
	AUTOSAMPLER	
9	Injection volume range	0.10–18.00 µL (20 µL loop) in 0.1 µL increments
10	Injection Reproducibility	Max 0.5% RSD for entire injection range.
11	Injection Linearity	0.99 at 0.5 to 10 µL injection volume
12	Carry Over	<0.05% for standard caffeine sample
13	Sample tray format	96 well plates and also should have capacity of sample vials and tubes.
14	Sample compartment Temp range	Min 5°C Max : -20 °C below ambient
15	Temp Stability	± 1.0°C

SPECIFICATIONS FOR ULTRA HIGH PERFORMANCE LIQUID CHROMATOGRAPHY SYSTEM

1	APPLICATION	Ultra High Performance liquid chromatography system for analytical separation of plasma proteins for diagnosis and basic research. Metabolomics application should be supported
2	DEGASSER	4 or more channel degasser with low internal volume
	PUMP	
3	Pump type	Binary Gradient with facility to select up to 4 solvents or high pressure quaternary gradient pump (15000 psi or more)
4	Flow range	Pump should have flow rate from 0.001 to maximum up to 2 ml per minute
5	Flow accuracy	±10 micro liter / min or less
6	Compositional precision	0.075% RSD or less
7	Solvent Compressibility Compensation	User selectable or predefined based on mobile phase compressibility/Automatic
8	pH range	1 to 9 or more
	MANUAL INJECTOR	
9	Type of Injector	Manual injector
10	Sample loading	Suitable Hamilton make Syringes of volumes 50,100 and 250 µl
11	Sample loops	Please quote different loops covering 20 to 250 µl
	TEMPERATURE CONTROLLED AUTO SAMPLER	
12	Temperature range	4°C to 40°C or more
13	Injection range	up to 25 µl in 0.1 µl increments injection volume accuracy
14	Sample Trays	Trays to accommodate 96 x 1.5 -2 ml capacity also should accommodate 96/384 well plates
15	Carry over	0.004 % (40 ppm) or less
	TEMPERATURE CONTROLLED COLUMN COMPARTMENT	
16	Temperature range	5°C (20 degrees below Ambient) to 90°C or more

17	Temperature Stability	$\pm 0.2^{\circ}\text{C}$ or less
18	Column chamber	Should accommodate two columns up to 30 cm column length
	VWD/PDA DETECTOR	
19	Wavelength range	Wavelength range 190 to 700 nm. Deuterium lamp, tungsten lamp. Temperature control for both lamps.
20	Optical bandwidth	6 nm or less
21	Noise	$< \pm 3.5 \mu\text{AU}$ or less
22	Drift	$< 0.1 \text{ mAU/h}$ or less
23	Linearity	$< 5\%$ RSD
24	Flow cell	Please quote flow cells of different volumes. 5-8 μl ---- 2 each 10-12 μl ---- 2 each
	FRACTION COLLECTOR WITH SAMPLE COOLING	
25	Modes	Fraction collector with 96 well plate and vials holder and programmable with UHPLC with Time and Peak fractionation modes.
26	Fraction collector racks	Suitable sample collection rack for 96 vials or more of .05 to 1.5 ml capacity
27	Temperature range	4°C to 40°C
	COMPUTER AND SOFTWARE	
28	System Control & software	PC controlled along with 1 software license for free of cost. Separate PC to be provided for uHPLC setup. uHPLC should be operated standalone and also to be integrated with MS system
29	Software features	(a) Should be capable of automated instrument control, data acquisition, evaluation, integration, quantification and reporting. (b) Simultaneous display of 5 or more chromatograms at preselected wavelengths. (c) Spectral acquisition and evaluation capability. (d) System status information during data acquisition (f) flexibility for system upgrading (g) Customizable reports, calibration routines, system logging, early maintenance feedback and diagnostic features.

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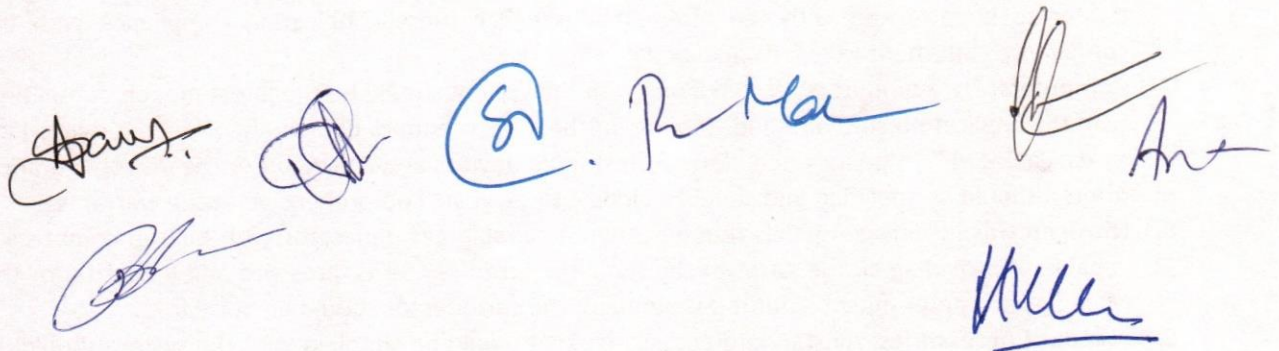
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MANDATORY	<p>a) All necessary tools, hardware and software for successful integration of LC with the offered Mass Spectrometer to be included.</p> <p>b) Should be capable of supporting Quantitative proteomics applications including label-free, SILAC, TMT ,iTRAQ etc. capable of operating in DDA with advance precursor algorithm to assign more precursor for DDA, Variable DIA, PRM, Multiplexing SIM and PRM etc .These applications should be evidenced by peer-reviewed publication on plasma Proteomics using the offered setup. Year wise number of publication record may be provided.</p>
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ENVIRONMENTAL SPECIFICATIONS

1	System operating temperature range	5–30 °C ambient temperature
2	Humidity	30–80% RH
3	Power	Entire system along with accessories should work on 230 V, 1Φ 50HZ. Power.



TERMS AND CONDITIONS

IMPORTANT CLAUSES:

1. **Software:** Full licensed latest software with the upgrade for 3 years to be included in the offer. Soft copy of application software should be supplied along with system.
2. **Warranty:** Comprehensive on-site warranty for 3 years from date of installation.
3. **Manuals:** Trouble shooting information and diagnostic details should be included in the offer. Commitment to this clause to be made by the principals in the offer.
4. **Calibration Standard:** Calibration standards required to cover for a period of 3 years to be included with system. Supply should be in a staggered basis for 3 years based on the life of the calibration standards.
5. **Consumables.** Essential spares and consumables such as lamps – 3 no's, piston seals – 3 no's, capillaries – 3 no's, connectors – 3sets, screws – 3 sets and ferrules—3 sets .etc required for maintaining the system for two years to be included with the system. Following Reverse phase C-18 columns with the following specifications to be included:
 1. 3 micrometer, 100 A, 75 micrometer x 15 cm --- 3 Nos
 2. 2 micrometer, 100 A, 75 micrometer x 15 cm --- 2 Nos.
 3. 2 micrometer, 100 A, 75 micrometer x 25 cm --- 2 Nos.
6. **Technical Literature:** Detailed original literature clearly indicating the technical specification of the tender to be attached with the offer. Tender which merely indicating compliance with the compliance statement will be disqualified.
7. **Computers:** The computers offered along with the system should be the latest models compatible with the application software and suitable for the HT proteomics data analysis. Required interface cards, cables etc. to be included along with storage devices and DVD writers The PC configuration offered should be specified and should include a three years comprehensive onsite warranty.
8. **Nitrogen Gas:** if nitrogen gas is required then a suitable gas generator with built in compressor capable of providing all the gases at the required purity (99.99%), pressure and flow rate for the Mass Spectrometer must be quoted separately. The compressor should be noise free.
9. **Standard Accessories:** All standard accessories that would be supplied with the system should be clearly mentioned in the offer.
10. **Installation:** Systems installation and integration, verification of performance and training of operators be done by well trained engineers and application specialists from the manufacturer at CCMB. All applications related to proteomics should be verified with our test samples.
11. **Service Support:** Local service support should be provided within TWO days from a service call during and after warranty period.
12. **Availability of Spares:** Please indicate the year in which the Model was introduced in the market and confirm whether the spares and consumables for the system would be available for a minimum period of 10 years.
13. **List of Users:** List of users of the offered model in India along with names of contact person, addresses, telephone numbers and email ID's to be enclosed separately.
14. **Demonstration:** Demonstration of identical models as the one(s) offered to be given on request at other customer site.
15. **Technical presentation:** Technical presentations on the systems offered are to be made on the request from CCMB.
16. **Pre-Installation Requirements:** Pre-Installation Requirements to be provided immediately on receipt of confirmed order.

Selection of the system would be based on the response to all the above points apart from the proven technical specifications and features, support, service and suitability to CCMB's requirements. Please therefore respond to all the points.

