



NIT No.: IITI(MM)/SIC/1/1A/695/SS/2024-2025

February 11, 2025

PREBID REPORT

The online meeting for Pre-bid discussion held at IIT-Indore on 30/01/2025 at 03.00 PM onwards for Supply and Installation of Liquid Chromatography-High Resolution Mass Spectrometry (LCHRMS).

The report of the meeting is as mentioned below.

Sl. No.	Reference of the Clause/ Page No. of the Tender Document	Query raised	Query Raised by	Response from IITI
A)	Ultra High performance Liquid Chromatography (UHPLC)			
1.	(i) LC Pump: Pressure Range: 14,000 psi or better	Pressure Range : 18,000 psi or better. Justification: - All latest system are available with 18,000 psi pressure, which is maximum pressure available. High pressure helps in utilizing 1.8um to 1.5 um UHPLC columns for sharp peak shapes and shortest run times.	M/s. Agilent Technologies India Pvt. Ltd.	No change.
2.	(ii) Autosampler: Injection Loop volume range: 0.1 to 100 µl	Injection Loop volume range: 0.1 to 20µl Justification: - No LC-QTOF applications will required injection volume more than 5ul. The option of higher inj. Vol availability allows users to inject more than necessary sample contaminating high end systems like QTOF.		Accepted. Injection Loop volume range: 0.1 to 20 µl or better
3.	(ii) Autosampler: Capacity of sample Tray: 90 vials (1.5 to 2 ml) or better	Capacity of sample Tray: 100 vials (1.5 to 2 ml) or better. Justification: - 100 vial is standard used by all, systems offering less than 100 vial capacity are old age systems which can get discontinued any time.		No change.


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4.	(ii) Autosampler: Sample carryover: < 0.003% or better	Sample carryover: < 0.004% or better Justification: - We request proposed change, as this specification is locking us out and we cannot participate.	M/s. Agilent Technologies India Pvt. Ltd.	Accepted. Sample carryover: < 0.004% or better
5.	(iv) Detector: PDA or Equivalent: Flow cell Vol. & Path length: Should be 1 microliter or less with 10 mm path length	Flow cell Vol. & Path length: Standard flow cell with 10 mm path length supporting UHPLC system. Justification: - A 1 microliter flow cell is very fragile and results in frequent breakage, increasing operational cost. A standard flow cell of 10 to 13ul will be best suited option. Moreover, there are no specific applications demanding a 1 microliter flowcell in PDA.		No change.
B) System Hardware Specifications: Q-TOF mass Spectrometer				
6.	(i) Mass Analyzer The HRMS instrument must be a high resolution QTOF with > 40,000 Resolution FWHM at around m/z 1000 or Orbitrap with > 2,00,000 Resolving power@ 200 m/z. The Resolution and m/z must be mentioned on the vendor's specification sheet and no other data/proof will be accepted.	The HRMS instrument must be a high resolution QTOF with > 50,000 Resolution FWHM or Orbitrap with > 2,00,000 Resolving power@ 200 m/z. The Resolution and m/z must be mentioned on the vendor's specification sheet and no other data/proof will be accepted. Justification: - All latest QTOFs can offer resolution more than 50,000 FWHM, if Orbitrap is required with 2,00,000 FWHM why not get best resolution on offer in QTOFs as well? We request removal of m/z 1000 for resolution as our specification sheet mention different m/z. We cannot participate with this specs.		No change.
7.	(i) Mass Analyzer The QTOF Mass Analyzer should have: 1. TOF Mass Range: at least 40,000 m/z or better	The QTOF Mass Analyzer should have: 1. TOF Mass Range: at least 30,000 m/z or better Justification: - We request TOF mass range of 30,000 m/z or better. Or else we will	M/s. Agilent Technologies India Pvt. Ltd.	No change.

		<p>not be able to participate. Please find link for application note for large molecule Intact mass analysis with instrument having 30,000 m/z. Click Link for App. Note : App Note_Large Molecules Analysis TOF m/z mass range is different than molecular weight in Daltons. We can perform analysis of mAbs (mol Wt. 1,50,000 Da) using a QTOF with m/z of 10,000 as well. The way it can be done using a Orbitrap with m/z of just 8000.</p>		
8.	Polarity Switching to be added	<p>Instrument should have capability of polarity switching for acquiring Positive & Negative mode data simultaneously in a single injection.</p> <p>Justification: - Polarity switching feature is a must as it plays a very critical role in acquiring Anions and Cations simultaneously in a single run. This is very important during Metabolomics, Lipidomics and Proteomics applications. Also untargeted screening workflows use polarity switching for faster data acquisition. This avoids making 2 separate injections for the same sample and enhances productivity.</p>		No change. However, vendor can quote model with capability of polarity switching
9.	<p>(i) Mass Analyzer</p> <p>Desolvation temperature: The instrument must have capability of 650 degrees or higher desolvation temperature in both ESI and APCI or ESCI ionization modes</p>	<p>Ionization temperature: The instrument must have capability of 650 degrees or higher Ionization temperature in both ESI and APCI or ESCI ionization modes.</p> <p>Justification: - We request to change desolvation temperature to ionization temperature, as Agilent has a more efficient dual stage temperature-based mechanism to apply temperature in ion source. Desolvation temperature is nowhere used in our specification document. We cannot participate with this specs.</p>	M/s. Agilent Technologies India Pvt. Ltd.	No change.


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10.	(i) Mass Analyzer Mass Accuracy:1 ppm or better for both MS & MS/MS modes.	Mass Accuracy:1 ppm or better for MS & <2 ppm for MS/MS modes. Justification: - We request <2 ppm accuracy in MS/MS mode. We cannot participate with this specs. Mass accuracy better than 5 ppm is considered good for structure elucidation and library matching. Also MS/MS add additional level of filtering considering selection of precursor ion in MS mode.		Accepted.
11.	(i) Mass Analyzer Sensitivity: For 10 pg of known company MS standard (e.g Reserpine) s/n ratio should be 2000:1 or better for MS. (Documentary evidence must be submitted for bid evaluation).	Sensitivity: For 1 pg of known company MS standard (e.g Reserpine) s/n ratio should be 500:1 or better for MS and 1500 : 1 for MS/MS. Justification: - We request sensitivity specifications to be improved further. Usually S/N ratio are mentioned at 1 pg level and not 10 pg. Present specification demonstrates a very inferior quality of sensitivity. All major vendors can offer Agilent proposed sensitivities. Also S/N should be captured in specification document, Agilent has no objection in sharing lab generated data supporting on paper specifications.		No change. Please refer point 31(C) for sensitivity
12.	(ii) Ionization Source: • The instrument must be equipped with dual/ combined/ multi mode ESI and APCI or ESCI ionization source. • The sources should be software switchable without manual intervention • Instrument should have auto calibration feature	• The instrument must be equipped with a Dedicated dual spray ESI / Multimode ion source and a separate dedicated APCI source with facility to interchange easily by the user. • Auto-detection of installed source by the instrument and software. System should have the capability of easy switching between ESI and APCI without breaking the vacuum. Justification: - We request changes as proposed which are generalized and superior.	M/s. Agilent Technologies India Pvt. Ltd.	Accepted.

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		<p>Combined or Multimode sources are inferior from a sensitivity aspect, that was the basic reason why your specifications for sensitivity were inferior 10 pg with S/N 2000:1. With dedicated ESI & APCI ion sources the sensitivity can become ~5 times better useful for multiomics applications.</p> <p>ESCI is not an ion source, it is just a mode and is very specific to Waters. Also in ESCI mode ESI & APCI signals cannot be acquired simultaneously and separate injections are to be made for this. Please refer link for more details on ESCI</p> <p>CLICK HERE FOR WATERS LINK ON ESCI</p> <p>Extracts from above linked Waters Doc:</p> <p>Waters push this as it is default feature for them reducing their pricing, this is not for your application benefit. They do have a dedicated APCI ion source which they are avoiding to quote for you. Even Waters never use ESCI mode for their publications on metabolomics / Lipidomics .</p>	
13.	<p>(ii) Ionization Source:</p> <p>Probe for solid sample analysis compatible with instrument.</p>	<p>Justification: -</p> <p>Solid Probes is an old not very successful qualitative technology. It will cost around 20 Lakhs which is huge and significant amount. This amount can be used for some database libraries / software purchase.</p> <p>As sample loading cannot be controlled, solid probe based applications usually tend to over load instrument with sample conc. This results in heavy MS contamination with high intensities interfering masses lingering in instrument for months even after repeated cleaning.</p>	No change.


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		This application also tends to hamper analysis performed after solid probe based applications with unknown masses getting captured in subsequent analysis with hard to justify MS spectra. This negatively impacts data quality when targeting high impact factor journal based publications.		
14.	The Quoted HRMS Equipment must have compatibility with nano LC and Nano Source for future upgradation for Proteomics Applications.	We request you to kindly either ask for Nano LC as a mandatory part to quote or remove it. Asking the Nano LC compatibility for future upgradation not only gives undue advantage to a specific vendor it also restricts us from Participation. Justification: - Kindly remove it so that the specifications can be inclusive in nature and allow other vendors including us to participate.	M/s. Sciex India Pvt. Ltd.	No change.
15	Flow Cell Volume and Path Length: Should be 1 microliter or less with 10 mm path length	This point can only be met by one specific vendor and particular to a specific vendor. Justification: - Kindly remove it or change it to 10 microliter or less with 10 mm path length.		No change.
16.	Mass Analyzer: The HRMS instrument must be a high resolution QTOF with > 40,000 Resolution FWHM at around m/z1000.	This point allows one specific vendor to quote their lowest end model but pushes other vendors to quote their High End Models which gives an undue advantage to a particular Vendor. Justification: - Kindly change it to The HRMS instrument must be a high resolution QTOF with > 41,000 Resolution FWHM at around m/z1000 so that all vendors can quote their mid/high level models.	M/s. Sciex India Pvt. Ltd.	No change.
17.	The QTOF Mass Analyzer should have: 2. Quadrupole Mass Range: i. 15000 m/z or	For Any HRMS system globally the Mass Range is considered in MS mode and ToF or MS/MS mode. It is		No change.

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	better in non resolving mode for QToF ii. 20 to 4000 m/z or better in resolving mode.	very confusing to work with an High Resolution Mass Spectrometer system and work in non resolving mode which again is a specific terminology used by a particular vendor. Justification: - We request you to kindly change it to Mass Range: TOF: up to 40,000 Da or more MS : 5-2000 m/z or More so that we can also participate.		
18.	Acquisition Rate/Scan speed: 30 Spectra/Hz per second or better in both MS & MS/MS Mode	For any HRMS system Globally the Scan speed in MS/MS mode is very crucial and helps in faster acquisition and processing. Justification: - We request you to kindly change it to Scan Speed: MS Mode: up to 25 Spectra/Sec or more and MS/MS : pectra/Sec or more so that we can also participate.		Accepted. Acquisition Rate/Scan speed: 25 Spectra/Hz per second or better in both MS & MS/MS Mode
19.	Linear Dynamic Range: > 5 orders or more	This Point is restricting us from participation. Justification: - > 4 orders or more		No change.
20.	Ionization Source: Probe for solid sample analysis compatible with instrument.	This point can only be met by one specific vendor and particular to a specific vendor. Justification: - We request you to kindly remove it or make it optional.		No change.
21.	B. System Hardware Specifications: Q-TOF HRMS Mass Spectrometer	B. System Hardware Specifications: HRMS Mass Spectrometer. Justification: - Instead of QTOF, kindly mentioned HRMS so that both technologies can participate.	M/s. Thermo Fisher Scientific (India) Pvt. Ltd.	Accepted. B. System Hardware Specifications: Q-TOF/Quadrupole-Orbitrap HRMS Mass Spectrometer
22.	A High-Resolution Mass Spectrometer model comprising of a Quadrupole for isolation of various mass to charge ratios, should have	A High-Resolution Mass Spectrometer model comprising of a Quadrupole for isolation of various mass to charge ratios, should have analyzer either of Time-of-flight tube or orbitrap technology for obtaining		Accepted.

	Time of flight tube for obtaining accurate mass information up to 4 decimal places.	accurate mass information up to 4 decimal places. Justification: - So that we can participate.		
23.	The HRMS instrument must be a Ultra high resolution QTOF with $\geq 40,000$ Resolution FWHM at around m/z 1000 or Orbitrap with $\geq 2,00,000$ Resolving power @ 200 m/z.	The HRMS instrument must be a Ultra high resolution for HRMS $\geq 2,00,000$ FWHM Resolution. Justification: - Higher resolution is need for better unambiguous identification, identification of higher number of proteins, peptides, metabolites, etc. in given sample.		No change.
24.	The QTOF HRMS Mass Analyzer should have: 1. TOF HRMS Mass Range: at least 40,000 m/z or better. 2. Quadrupole Mass Range: i. 15000 m/z or better in non-resolving mode for QTOF and 8000 m/z or better for Orbitrap or equivalent ii. 20 to 4000 m/z or better in resolving mode.	The HRMS Mass Analyzer should have: 1. HRMS Mass Range: at least 40,000 m/z or better for Q-TOF and 6000 m/z for Orbitrap. 2. Quadrupole Mass Range: Up to 2250 m/z. System should be capable to analyse small and large molecules up to 20,000 to 25,000 Dalton. Justification: - It allows for broader participating with better system.	M/s. Thermo Fisher Scientific (India) Pvt. Ltd.	No change.
25.	Desolvation temperature: The instrument must have capability of 650 degrees or higher desolvation temperature in both ESI and APCI or ESCI ionization modes.	Desolvation temperature: The instrument must have capability of 550 degrees or higher desolvation temperature in both ESI and APCI or ESCI ionization modes. Justification: - Thermo Fisher use OptaMax Next Generation source with heated capillary so desolvation temperature doesn't required more than 500 degree for any applications.		Accepted.
26.	The system should include a Collision cell for Collision induced dissociation (CID) / experiments with both low energy and high energy analysis in a single run.	The system should include a Collision cell for Collision induced dissociation (CID) / HCD experiments with both low energy and high energy analysis in a single run.		Accepted.


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		Justification: - For broader participation. We provide higher collision energy cell (HCD). Which is better than CID as there is not 1/3rd mass cut off.		
27.	A comprehensive 5 year of unconditional warranty of system including all the electronics boards, hardware parts, spares and consumables required by the UHPLC, MS, Nitrogen generator and other accessories for smooth running. (except reagents/ solvents/ standards/ columns).	A comprehensive 3 year of unconditional warranty of system including all the electronics boards, hardware parts and spares and required by the UHPLC, MS, Nitrogen generator and other accessories for smooth running. (except reagents/ solvents/ standards/ columns & Consumables). Justification: - Consumables are not covered under warranty. So, request you to please amend accordingly.		No change.
28.	ii) Ionization Source: Probe for solid sample analysis compatible with instrument	Kindly remove this specification Justification: - This is limiting to multiple vendors from participation. So kindly remove the same.	M/s. Thermo Fisher Scientific (India) Pvt. Ltd.	No change.
29.	The software should perform deconvolution for proteins and peptides	Please remove this line as proteomic by nano LC and Nano source are future upgradable option. Justification: - Since Nano LC and Nano Source are asked for future upgradation for proteomics application so request you to remove proteomics software.		No change.
30.	Skilled Manpower to be supplied by vendor for one year duration to cater the instrument operations.	Please remove this point. Justification: - It allows for broader participation.		No change.
31.	B) (i) Mass Analyzer: (pg. 20 & 21)		M/s. Waters (India) Pvt. Ltd.	
a.	The HRMS instrument must be a high resolution QTOF with " 40,000 Resolution FWHM at around m/z 1000 or Orbitrap with " 2,00,000 Resolving power @ 200 m/z. The Resolution and m/z must be mentioned on the	The HRMS instrument must be a high resolution QTOF with " 40,000 Resolution FWHM at m/z 956 or Orbitrap with " 2,00,000 Resolving power @ 200 m/z or better. The Resolution and m/z must be mentioned on the vendor's		Accepted. 40,000 Resolution FWHM at around m/z 1000±50

	vendor's specification sheet and no other data/proof will be accepted.	specification sheet and no other data/proof will be accepted. Remarks:-In our global technical specification sheet the resolution is calculated at m/z 956.		
b.	Mass Accuracy:1 ppm or better for both MS & MS/MS modes.	Mass Accuracy:1 ppm or better for both MS & MS/MS modes with external calibration/lock mass. Remarks:-Higher mass accuracy is required for better identification of unknown compounds and structural elucidation.	M/s. Waters (India) Pvt. Ltd.	No change.
c.	Sensitivity: For 10 pg of known company MS standard (e.g Reserpine) s/n ratio should be 2000:1 or better for MS. (Documentary evidence must be submitted for bid evaluation).	Sensitivity: For 1 pg of known company MS standard (e.g Reserpine) s/n ratio should be 2000:1 or better for MS mode. (Documentary evidence must be submitted for bid evaluation). Remarks:-Higher sensitivity is better for identification of very low concentration of compounds in complex samples like Metabolomics.		Accepted.
32. B) (ii) Ionization Source: (pg. 21)				
a.	The source should be software switchable without manual Intervention	The source/probe and mode of ionization should be software selectable. Remarks:-Since ESI and ASAP are two separate ionization techniques, the probe needs to be changed manually.		Accepted.
b.	Flow rates from 1-2000 µL/min or better without flow splitting	Flow rates upto 2000 µL/min or better without flow splitting. Remarks:-This parameter is basically the capability of LC pump		Flow rates upto 2000 µL/min or better without flow splitting. Is Acceptable.
33. C) Data acquisition workstation with software: (pg. 21)				
a.	Separate workstation for Data Processing of small molecules/ chemistry; metabolites, metabolomics and Data Sharing with internet connectivity.	Clarification required for - Data Sharing with internet connectivity. Remarks:-Since the data is at high risk while using internet.		No Change. There should be ways available to share data online with users.

34. E) Accessories & other Terms and Conditions: (pg. 22)			M/s. Waters (India) Pvt. Ltd.	
a.	A comprehensive 5 years of unconditional warranty of system including all the electronics boards, hardware parts, spares and consumables required by the UHPLC, MS, Nitrogen generator and other accessories for smooth running. (except reagents/solvents/standards/columns).	A comprehensive 3 year of unconditional warranty of system including all the electronics boards, hardware parts, spares and consumables required by the UHPLC, MS, Nitrogen generator and other accessories for smooth running. (except reagents /solvents /standards/columns). Remarks:-Pricing for the Warranty for the next 2 years after the completion of Warranty period, to be quoted separately.		No change.
b.	4 Maintenance kits/PM kits must be provided during the warranty period for the entire setup of UHPLC, MS, nitrogen generator, etc. once per annum.	2 Maintenance kits/PM kits must be provided during the warranty period of 3 years, for the entire setup of UHPLC, MS, nitrogen generator, etc. once per annum; after the completion of first year standard warranty. Remarks:-Depending on the budget to be considered otherwise the pricing will be too high.		No change.
c.	Skilled Manpower to be supplied by vendor for one year duration to cater the instrument operations	Optional-Skilled Manpower to be supplied by vendor for one year duration to cater the instrument operations. Remarks:-Depending on the budget to be considered otherwise the pricing will be too high.		No change.

All prospective/willing bidders are requested to take note of this report as part of the Tender document. All other terms and conditions of the tender remain unchanged.


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