Tender Specifications for High Sensitive Triple Quadrupole LCMSMS System

NIPER-G/PUR/GLOBAL/2018/08		
Specification as per the Tender Notification in Chapter 4		**Amended Specifications as per the Pre Bid meeting held on 22-02-2018 in Chapter 4**
LC-MSMS (Triple Quadrupole)	A Bench Top High sensitive Triple/Tandem Quadrupole LCMS/MS System with facility to either use as standalone or connect to a Fast Liquid Chromatography system using lesser than 2 µm particle size columns for high sensitivity for both qualitative and quantitative analysis	**No Change**
Mass Range	5-2000 amu or better	**5-1500 amu** or better
Scan speed	Should have the scan speed of more than 18,000 amu/sec in QQQ mode	**No Change**
Mass stability	<0.1 Da over a 24 hour period	**No Change**
Interface	Dual/orthogonal or off axis source or any other equally efficient technology capable of avoiding interferences from solvents and other extraneous matter, handling large batches of complex sample matrix over a long period of time without performance degradation.	**No Change**
Ionization source	• Combined ESI and APCI sources to be provided, with facility of interchanging easily by the user, and auto-detection of installed source by the instrument and software. • Switching between ESI and APCI should be ≤ 20 ms • The source should be easily removable from the system to facilitate user cleaning without venting the vacuum, with automatic standby of system while the source / probe is being removed • The source shall have a flow rate compatibility from 50 µL/min to 2000 µL/min, without flow splitting in both ESI and APCI modes • Desolvation temperature for sources should be 600° Celsius or better • Additional one combined APPI and APCI source should be quoted along with main system • All source parameters to be adjustable	**Remaining specs no change** • Desolvation temperature for sources should be **500° Celsius or better**

	through software.	
Source cleaning	Should be done without venting the system and facility to vacuum interlock	**No Change**
Infusion Device	• Infusion device must be integral to the instrument and must be controllable from the instrument software. • At least 3 user changeable sample vials should be built into the system to allowing tuning and calibration solutions to be infused into the probe via the switching valve.	• Infusion device must be integral to the instrument/**self-operate** and must be controllable from the instrument software. At least 3 user changeable sample vials should be built into the system to allowing tuning and calibration solutions to be infused into the probe via the switching valve.
Vacuum system	A robust high efficiency vacuum system with minimum maintenance and utility with low noise level and automatic vacuum lock system.	**No Change**
Triple Quadrupole	Quadrupoles having high standards of mechanical tolerances and minimum coefficient of Thermal expansion to ensure highest mass stability with Pre-aligned pre filters to ensure excellent focusing of Ions into all the Quadrupoles for high sensitivity and resolution in both Q1 and Q3.	**No Change**
Mass Resolution	Must be automatically adjusted to desired resolution (0.50 Da, 0.75 Da or 1.00 Da FWHM)	**No Change**
Sensitivity	• MRM ESI +ve 1pg On column reserpine should give chromatographic S /N greater than 500,000:1 without smoothening MRM transition 609>195 at unit resolution • MRM ESI -ve 1pg On column chloramphenicol should give chromatographic S /N greater than 500,000:1 without smoothening MRM transition 321>152 at unit resolution • Documentary evidence to be submitted along with quotation. For ten injections, %RSD should be <5%. Chromatograms to be provided, with details of mobile phase, column and injection volume.	**No Change**

	Statistical treatment used to determine S/N ratio is to be specified along with raw data.	
Collision cell	Specially designed collision cell to allow use of very low Dwell times (1 milliseconds) without sacrificing sensitivity and eliminate Cross-Talk to enable Multiple MRM Transition Studies within a single run.	**No Change**
MRM Acquisition rate	Should be capable of minimum 500 MRM data points /sec in a single time period, with no loss in sensitivity for co-eluting components at any one point of time.	**No Change**
Operating Modes	Tandem mass spectrometry should have following scan options a. Full scan b. Selected ion monitoring/recording (SIM/SIR) c. Product ion scanning d. Precursor ion scanning e. Neutral loss/gain scanning f. Multiple reaction monitoring g. Simultaneous full scan and MRM along with matrix monitoring to be performed in a single run h. +ve / -ve polarity switching time between alternate MRM scans is minimum 15ms i. Automatic and manual tuning. j. Information dependent acquisition system or equivalent scan mode of MRM to high sensitivity product ion scan for library confirmation.	**No Change**
Dynamic range	6 orders of magnitude or better	**No Change**
Detector	• Long life highly efficient electron multiplier or photomultiplier detector • Must operate both +ve and -ve ion mode and back	**No Change**
HPLC Pump	• Complete LC system and MS should be controlled by single software. • Quaternary Pump capable of switching between four solvents • The instrument should have in-built Vacuum degasser facility with minimum four lines and should be efficient to remove dissolved air online. • Operating flow rate range should be 0.010 to 2.000 mL/min, in 0.001 mL	**No Change**

	increments • Maximum Operating Pressure 15,000 psi or better at up to 1 mL/min • Effective system Delay Volume should be less than < 400ul, independent of system backpressure & with standard mixer for higher sensitivity	
Auto sampler	• Number of sample plates: Two; Vial plate 1.5/2 mL vials • Number of sample injection:1-90 or better • Injection volume range:0.1-10µl in 0.1 µl increment • Sample Temperature 4 - 40 deg. C • Sample Carryover < 0.004% or better • Total system (including pump & Auto sampler) should be capable of operation at 15000 psi or better.	**No Change**
Column oven	• Column Temperature Control 5 deg. C above ambient to 90 deg. C. • Column oven to accommodate 10-15 cm length column or lower. • Column tracking device should be provided preferably.	**No Change**
Column	Suitable sub 2 micron particle size column (100 mm length x 2.1 mm diameter) of C18, C8 and normal phase column – each 1 no	**No Change**
Computer System	Suitable Branded PC (Window Workstation with a 17" Monitor) to operate the instrument with Printer.	**No Change**
Quantification software system	• Application software for quantitative applications having the additional requirement of Quality Control (QC) checks to satisfy statutory or regulatory requirements must be available. • This application must compatible with LC/MS and LC/MS/MS data. Data can be full scan, SIR/SIM or MRM. • Data Acquisition, Peak Integration, Calibration, Quantification and QC calculations must be fully automated. • Quantification and QC parameters must be stored for each compound and individually selected and loaded into new methods.	**No Change**

	• The quantification method editor must be viewable in page view or as a spreadsheet • This application software must allow the monitoring of the molecular ion plus up to 4 confirmatory ions. • Technology for system optimization and status monitoring, technology should monitor and perform the following parameter: – System parameters checking and alerts – Integrated sample/calibrant delivery system and programmable divert valve – Automated mass calibration – Automated sample tuning – Automated SIR and MRM method development – LC/MS system checks-automated on-column performance test. • This application software must flag samples in the browser report when: – the ion ratios fall out-with the user-defined values – the maximum blank acceptance level (user input) has been exceeded – the maximum concentration limit (user input) has been exceeded – the concentration is below the reporting concentration limit (user input) – the concentration falls below the minimum recovery % level (user input) – the concentration falls above the maximum recovery % level (user input) – the coefficient of determination for a calibration curve falls below a user-set level – QC samples fall outside a user-defined number of standard deviations from the mean	

	– the peak of the compound of interest falls below a user defined S/N ratio • Software should have the latest library database of around 1000 compounds viz. (Antibiotic residues, veterinary drugs residue, Aminoglycosides, macrolides, Dyes, Mycotoxins, Vitamins, Pesticides, etc.) • Pesticide database should contain Molecular formula, Mono isotopic mass, Parent ion, Cone voltage (V), Product ion 1, Collision energy (eV) Product ion 2, RT and sensitivity.	
Start-up Kit	LC-MS/MS start-up kit should be supplied as standard	**No Change**
Nitrogen Generator with in-built compressor & Gas Cylinder	• A suitable imported noise free nitrogen gas generator with in-built compressor, filters, or any other accessory required for functioning of system, should be supplied to take care gas requirements for ionization source. • Also a gas cylinder for fragmentation purposes including regulators, tubing, filters, etc. should be supplied.	**No Change**
On line UPS	A suitable online UPS of 10 KVA capacity with at least 60 mins back up for the complete system should be provided.	**No Change**
After sales service	Should have a good after sales service/technical support capable of reaching at short notice the places where LC-MS/MS is proposed to be installed. Visits and unlimited breakdown calls by service/application support, engineers should attend immediately without fail for LC-MSMS including Nitrogen Generator	**No Change**
Training of personnel	• Basic training for a period of not less than one weeks after installation of the equipment to technical personnel should be provided, free of cost. • Trouble shooting training as and when required • Dedicated resident engineer for a period of 3 years should be part of the main system offer	

Hardware	Both MS and LC should be from same manufacturer.	Both MS, **Ionisation source, LC and software** should be from the same manufacturer

Miscellaneous	1. Suppliers should ensure item wise compliance/deviation report. If the bidder is unable to show the proof for the technical compliance of specified points in the tender either in the brochure or technical data sheet or instruction manuals **should available in the website** for the specific point will be considered as does not complies the institutional specification. 2. Supplier should assure the shifting of the equipment to the new campus within the warranty period without any additional cost 3. System should quote with three years comprehensive warranty.

Sd/-
Purchase officer

General Terms and Conditions applicable to all 13 tenders published in newspaper on 19th February 2018 and exhibited in NIPER Guwahati website.

Following additional information is provided for the information of prospective bidders for 13 different items for which tender inquiry is issued:

1. Payment terms:

Considering the request made by few prospective bidders during the pre-bid conference held in the institute on 22nd February 2018, regarding payment terms related with foreign suppliers it is clarified that the **indicated payment terms in the tender documents still remains unchanged**. However Director, NIPER Guwahati **at his own discretion** can consider any other mode of payment requested by suppliers based on the reputation, credentials of foreign suppliers in the field and also protecting the interests of NIPER Guwahati. **No request for advance payment will be considered**.

2. Clarification with regard to projecting the cost implications of free delivery of the item at NIPER Guwahati premises.

Subsequent to the Pre-bid conference with regard to projection of price for items coming from abroad, the following guidelines may be followed:

A) The F.O.B. C.I.F., C.I.P. prices as per the suppliers quote should be indicated in foreign currency only

B) The additional cost towards payments of custom duty against duty exemption certificated provided by the institute, clearance charges, forwarding consignment from port of clearance to NIPER Guwahati premises etc. can be quoted in Indian currency.

For comparing the price with other bids, the institute at the time of preparing comparative chart for the tenders, the total F.O.B., C.I.F., C.I.P. cost will be converted into equivalent Indian currency at the exchange rate prevailing on the date of tender opening i.e. 13th February 2018 at 1500 hours IST and add the equivalent Indian currency value to the clearance and forwarding charges indicated by the supplier.