File No.: GA-25/2/2025-Gr.Admin-FSSAI
Food Safety and Standards Authority of India
(A statutory Authority established under the Food Safety and Standards Act, 2006)
(General Administration-Central Procurement Unit)
FDA Bhawan, Kotla Road, New Delhi – 110002

Dated: 09.07.2025

Corrigendum

Reference is invited to the GeM Bid No. GEM/2025/B/6066121 dated 15.05.2025 and the pre-bid meeting held on 29.05.2025.

2. In this regard, the Technical Specifications of the Liquid Chromatography-Mass Spectrometry Mass Spectrometry (LC-MS/MS), UPLC with PDA, Fluorescence and RI Detector have been revised and the same are being placed at Annexure-I & Annexure-II respectively.

3. Further, the Bid End Date is being extended upto 21.07.2025

4. All other Terms and Conditions shall remain the same.

(This issues with the approval of the Competent Authority)

9.7.2025

(Avinash Kusumakar)
Joint Director

ANNEXURE 1

Technical Specifications of Liquid Chromatography–Mass Spectrometry Mass Spectrometry (LC-MS/MS)

General Tender Specification		
The latest Triple/Tandem Quadruple LC-MS/MS Bench-Top System for high sensitivity trace level qualitative and quantitative analysis with complete software control for multi-residue analysis to meet food safety regulations with the following specifications UPLC with Auto-sampler, degasser, column oven, with a splitter to analyze injected sample by MS/MS. Instrument should meet the global food regulation requirements (like CODEX, USFDA, EU, FSSAI, etc.)		
S. No.	**Parameter**	**Description**
1.	**Pump**	i. Binary pump capable of switching between four/two solvents. ii. The system should be capable of being operated both as a HPLC and Fast HPLC. iii. Vacuum degassing capability iv. Operating Flow Rate Range to be 0.01 to 2.00 ml/min, in 1µl increments with Gradient profiles. v. Maximum Operating Pressure: 15,000 psi or better. vi. Effective System Delay Volume ≤ 100µl, independent of system backpressure. vii. Compatible to pH 2 to 12 viii. Composition Accuracy: +/- 0.5% or better ix. Composition Precision: 0.15% RSD or +/- 0.04 min SD, whichever is greater, based on retention time. x. Flow Precision: 0.075% RSD or +/- 0.02 min RSD, 6 replicates, based on RT (0.500 – 2.000 mL/min), xi. Flow Accuracy: +/- 1.0% (0.500-2.00 mL/min) or better. xii. Back Pressure: 15,000 psi or more.
2.	**Degassing Unit:**	i. Online degassing unit
3.	**Auto-Sampler/ injector**	i. The Auto sampler must accommodate not less than 100 vials ii. Injection precision should be <0.3% RSD or better iii. Vial capacity – up to 1.5- 2ml iv. Needle washing facility – should have needle washing facility from internal and external side programmable v. Built in dilution and derivative system facility vi. Syringe size –Should accommodate the injection volume stated above. vii. Injector Linearity > 0.999 coefficient of deviation viii. Sample carryover - <0.005% ix. It should have the facility of keeping the sample in a cooling condition (temperature range from 4 to 40ºC.
4.	**Column Oven:**	i. The temperature range should be 5 degrees above ambient to 80 ˚C / 90˚C or better. ii. It should be able to accommodate at least 2 Nos of 25 cm or better columns within the oven. iii. Temperature Stability: ±0.1 ºC of set temperature or better.

5.	**Workstation software**	i. Latest version of software which full fills the requirement of 21 CFR part 11, Food safety compliance. Compatible to LIMS ii. The ion ratios fallout with the user defined values iii. Software should have the library database of around 1000 compounds viz pesticides, antibiotic residues and mycotoxins etc. iv. Perform alternating +ve /- ve scan in one run. v. Automated quantification and reporting of acquired samples – Batch wise and individual. vi. The software should provide the capability to save data in a user-specified folder or subfolder, allowing flexibility in choosing the desired storage location. vii. LIMS compatibility software for batch analysis is desirable viii. Any update of software during warranty and CMC period should be done free of cost.
MSMS Detector		
6.	**Auto-tuning**	i. Auto-tuning with sensitivity and resolution optimization for both positive ion and negative ion modes.
7.	**Mass Range**	i. 10-2000 m/z or better
8.	**Scan Speed**	i. 15000 Da /sec or better
9.	**Resolution**	i. 0.7 Da or better at a unit mass resolution
10.	**Mass Stability**	i. 0.1 Dalton over 24 hours or better
11.	**Sensitivity/ Detection Limit**	i. MRM ESI +ve 1pg on column reserpine should give chromatographic S/N greater than >15,00,000:1 without smoothening MRM transition 609-195. (Proof of Statement must be provided). ii. MRM ESI -ve 1pg on column chloramphenicol should give chromatographic S/N greater than >15,00,000:1 without smoothening MRM transition 321-152. (Proof of Statement must be provided) iii. 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. Statistical treatment used to determine S/N ratio is to be specified along with raw data. iv. The same data is to be reproduced after the installation of the instrument at the site. v. Instrument detection limit: Should be 0.5 fg or less (Proof of Statement must be provided)
12.	**Polarity Switching**	i. +ve / -ve polarity switching time between alternate MRM scans: <20 ms or better
13.	**MRM channels**	i. Must be able to measure minimum 450 MRM/sec in one acquisition to enable Transition Studies within a single run.
14.	**Dynamic Range**	i. 6 orders of dynamic range or better

15.	**Detector**	i.	PMT/EMT/CEM/DDD detector having the highest sensitivity system should bequoted.
16.	**Nitrogen Generator**	i.	Suitable gas generator where ever available shall be provided and cylinders with all accessories such as SS double stage gas regulator, gas purification panel with brackets etc. Gas cylinders, minimum two nos.
		ii.	Gas Generators capable of supplying all necessary gases with the required purity, pressure and flow rate, as required for the LC-MS/MS instrument should be provided. It should be complete with all necessary accessories.
		iii.	Highly reputed brand of Nitrogen generator with inbuilt compressor with low noise should provided. Should be covered under two years comprehensive warranty with at least two Preventive maintenances along with PM kit each year. Satisfactory performance certificate should be given every six month of preventive maintenance visit.
17.	**Source cleaning**	i.	The cleaning of the source should be possible without venting the system.
18.	**Infusion Device**	i.	The infusion device must be an integral component of the instrument and should be operable through the instrument's software, enabling the infusion of tuning and calibration solutions into the probe via a selection valve.
19.	**Ionization source**	i.	Compatible to both ESI and APCI source, with a facility of interchanging easily by user and auto detection of installed probe by the instrument and software.
		ii.	Ionization ESI and APCI sources to be provided as standard, with facility of interchanging easily by the user, and auto-detection of installed source by the instrument and software. The ionization must be done both in a positive & negative mode.
		iii.	The source should be easily removable from the system to facilitate user cleaning without venting the vacuum, with automatic shutdown of system while the source / probe is being removed.
		iv.	The source shall have a flow rate compatibility from 200 µL/min to 2000 µL/min, without flow splitting in both ESI and APCI modes.
		v.	Temperature for ESI/APCI sources should be 450° Celsius or better.
		vi.	Desolvation temperature for ESI and APCI sources should be 450° Celsius or better.
		vii.	All source parameters to be adjustable through software.
20.	**Operating modes**	i.	Full scan
		ii.	SIM scan
		iii.	Product ion scan
		iv.	Precursor ion scan
		v.	Neutral loss/gain scan
		vi.	Multiple Reaction Monitoring (MRM)
21.	**MRM Library**	i.	The latest version of the Pesticide and antibiotics MRM library with more than 850 pesticides having analyst should be

		provided along with the system.
22.	**LC Columns**	i. Columns for pesticides analysis (Multi residue) – 4 nos, along with suitable guard column. ii. Column for polar pesticides analysis without derivatization – 2 nos, along with suitable guard column. iii. Column for vitamin analysis (water soluable) – 2 nos, along with suitable guard column. iv. Column for vitamin analysis (fat soluable) – 2 nos, along with suitable guard column. v. Column for Steriods and stilbens – 2 nos, along with suitable guard column. vi. Column for antibiotics – 2 nos, along with suitable guard column. vii. Guard column holder – 4 set.
23.	**Consumables/ Spares**	i. Vials (1.5 mL) with cap, insert and septa 100 Nos each- 10 Nos should be provided (total 1000nos each). ii. PM kit for HPLC and MS sufficient for trouble free operation during warranty and CMC period should be provided along with instrument. The PM kit to include all consumables of HPLC and MS including O rings, probe capillaries, inlet steel tubing, Check valves and seals, rotor seals, spray needles, syringe or any other minor consumables other than column and peak tubing's. iii. 2 set of 10, 20 and 1 set of 50 and 100µl loop additional shall be provided for injection. iv. The vendor should provide a PFAS kit so the users can perform PFAS applications on the same system in food Matrix (Food of Animal Origin) – Fish, Milk, Honey and Water. The vendor should also be providing the application method details for PFAS application. System should be supplied with suitable accessories required for Sample Preparation/ analysis and QUECHERS Kit (as applicable) for PFAS analysis in food Matrix (Food of Animal Origin) – Fish, Milk, Honey and Water. 1000 nos. v. System should be supplied with suitable Sample Preparation accessories. vi. QuEChERS Prepackaged dispersive and extraction Kits (1000 nos each) for Pesticides etc in following matrices: a) HLB cartridges or equivalent b) High fat containing food. c) High Water content food. d) Highly Pigmented foods (eg chlorophyll, lycopene,carotene etc). e) Vitamin (SPE C18 900mg cartridge).

24.	**UPS System and Pre requisite:**	i. 10 KVA UPS with a minimum of 60-minute backup time for supporting the instrument. ii. Reputed Branded of online UPS system of 10 KVA capacity with comprehensive warranty of minimum 5 years inclusive of SMF batteries should be provided.
25.	**Computer & Printer**	i. Suitable branded computer, i7 processor with 12 GB DDR3 Memory, Up to 1 TB SATA hard drive (7200 RPM) with original MS office professional lifetime. ii. DVD-RW 24" LCD/LED Monitor with suitable authorized operating system iii. Hp LaserJet colour automatic back-to-back printer with scanner. iv. Any update of software during warranty and CMC period should be done free of cost.
26.	**Software**	i. Latest version of software which full fills the requirement of 21 CFR part 11, Food safety compliance. Compatible to LIMS ii. The ion ratios fallout with the user defined values iii. Software should have the library database of around 1000 compounds viz pesticides, antibiotic residues and mycotoxins etc. iv. Perform alternating +ve /- ve scan in one run. v. Automated quantification and reporting of acquired samples – Batchwise and individual. vi. The software should provide the capability to save data in a user-specified folder or subfolder, allowing flexibility in choosing the desired storage location. vii. LIMS compatibility software for batch analysis is desirable viii. Any update of software during warranty and CMC period should be done free of cost.
27.	**IQ/OQ/PQ**	i. The instrument must be "Qualified" along with the Software. Necessary reagents along with Documents must be provided. During installation and qualification, Instrument should perform as per submitted specification in presence of user. ii. IQ/OQ/PQ to be performed as per OEM Standard protocol should be done free of cost with necessary traceable standards (traceable to ISO 17034). iii. PM visit along with kit must be supplied every year with the system till the warranty period. iv. Documents, Kits & standards etc. as required being supply along with the instrument v. To be done free of cost with traceable calibration standards for the first 5 years' warranty period (at installation & at every maintenance visit of each year) along with PM kits. vi. OQ/IPV should be done free of cost with supply of PM Kits and calibration standards at least once in a year during warranty period. vii. Documents, PM Kits & calibration standards etc. to be supply along with instrument at every PM visit free of cost during warranty period. viii. Satisfactory performance certificate should submit to the laboratory

		after calibration of LC-MSMS before one month of warranty period expired with supply and fixation of PM kits of HPLC and MS system.
28.	**Warranty**	i. Minimum 5 years from the date of completion of IQ, OQ and PQ of LC-MS/MS to the satisfaction of NFL including Nitrogen Generator, PC and all accessories. ii. The date of warranty period for LC-MSMS including Nitrogen Generator, PC, Printer, Gas cylinders with its accessories and all associated supply of LC-MSMS, which will start from the date completion of IQ, OQ and PQ of LC-MSMS. iii. It should cover hardware, software as well as wear and tear consumables (except column and sample preparation), Up-gradation of software to the latest version (if applicable-), prompt service (within 48 hours on-call), training and application support during the period without any extra charge. iv. In case of breakdown of the system, the servicing to be done immediately by the supplier during the warranty period and maximum down time period is 48 hrs, if it's not attended the warranty will extend accordingly. v. Warranty should be covered for all accessories and 3rd party items provided with the system. For delay in attending break-down call beyond 2 working days a penalty @ ₹10,000/- per day shall be charged. Such amount will be deducted from any amount due or which may become due to the supplier. The warranty period shall automatically stand extended by the number of days taken to rectify the defects.
29.	**After sales service/Post Warranty**	i. 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-MS/MS including Nitrogen Generator and UPS system. ii. Troubleshooting training (Instrumentation/Application) as and when required shall be provided free of cost. iii. The application and method development support must be rendered for minimum 30 days during the warranty period. iv. The vendor should also assure supply of spares, accessories, consumables and service for at least 10 years including Nitrogen generator. v. Terms and conditions for the AMC & CMC, after the warranty period has to be specified. vi. Quote for AMC & CMC for 6th, 7th, 8th, 9th & 10th years, to be submitted separately. vii. The CMC shall include parts cover all hardware including detector, software as well as wear and tear consumables (except column and sample preparation), PM kit (yearly), annual calibration along with documentation. viii. **AMC/CMC price quoted by the vendor will be considered as independent price.It will not be considered for finalizing the L1.**
30.	**Training**	i. Basic training for a period of not less than two weeks after installation of the equipment to technical personnel and further for method development whenever required during warranty and

		CMC period should be provided, free of cost. ii. Application support for method development for antibiotics, pesticides, mycotoxins analysis should be provided during warranty and as well as during CMC period, whenever required shall be imparted free of cost. iii. Trouble shooting training as and when required shall be imparted free of cost. iv. The instrument supplier has to perform on site method development and validation as per the laboratory /FSSAI regulatory requirements/ DG SANTE/ protocols for all pesticide, aflatoxin, vitamin and antibiotic in least four matrices as selected/ preferred by the lab.
31.	**Experience**	i. The supplier should have executed at least Minimum 20 or more of the model/series of model quoted successful installations among which 5 should be installed in Government institutes. ii. The Complete users list for the quoted model in India, with contact addresses, emails and phone numbers should be provided
32.	**General conditionsof supply**	i. The instrument and all its sub units should operate on 240 volts 50 Hz powersupply. ii. All the operation and maintenance manuals, circuit diagrams, application notesand application software's to be supplied should be in English language.
33.	**Servicing of LC-MS/MS, Nitrogen generator, Vacuum pump & UPS System**	i. The servicing of LC-MS/MS, Nitrogen generator, Vacuum pump & UPS System shall be carried out only by the OEM authorized service center/ engineer only, during the warranty period/ CMC period.
34.	**System performance requirements**	**i. Repeatability:** Should be able to demonstrate RSD < 5% for 10µl injection of 0.5µg/kg standard solution containing group of pesticides without internal standard should be provided by supplier along with tender documents in Matrix- Tea and spices for Pyridalyl, Spinosad, Dinotefuran. (Calibration data, Chromatograms, Experimental data, Injection volume, COA of standard/ column used to be provided).

Technical Specifications of UPLC with PDA, Fluorescence and RI Detector

General Tender Specification		
Quaternary solvent system with degasser, Auto sampler, Column oven and detectors. Total system (including pump, detector and auto sampler) should be capable of operation ranging minimum 15000 psi or better. Instrument should meet the global food regulation requirements (like CODEX, USFDA, EU, FSSAI, etc.)		
Sl. No.	**Main component**	**Desired Specifications**
1	**Pump**	i. High-Performance Binary gradient pump, capable of switching between four/ two solvents. ii. **Flow range:** 0.01 to 2.0 mL or better iii. **Flow rate accuracy:** ±1.0 % or better iv. **Flow rate precision:** ≤0.1 % RSD or better v. **Compositional accuracy:** ±0.5 % or better vi. **Back Pressure:** 15,000 psi or more.
2	**Degassing Unit**	i. Online degassing unit should be part of main system.
3	**Auto-Sampler/ injector**	i. The Autosampler design should have variable injection volume capability. ii. Temperature setting ranges from 4 °C to 35 °C or better. iii. The Carryover must be below 0.005 % or better. iv. Suitable sample rack for handling a minimum of 90 Nos. of 1.5-2 ml vial. v. Injection-volume Precision: <0.3% RSD or better
4	**Column Oven**	i. The temperature operating range should be ambient to 80 °C or better. ii. It should be able to accommodate at least 2 Nos of 150 mm columns within the oven. iii. Temperature Stability: ±0.1 ºC of set temperature or better.
5	**Diode Array Detector or Photodiode Array Detector (DAD/PDA)**	i. Wavelength range should be 190 – 700 nm or more. ii. Detection type should be with 1024 element photodiode array. iii. Light source - Deuterium and/ or tungsten lamps/ xenon. iv. Data rate should be up to 80 Hz (points/sec) or better v. Wavelength accuracy = ± 1 nm. vi. Flow cell: <1 µL or better volume, 10 mm cell path length vii. Noise**: < 5 x 10-6 AU** viii. Drift: **< 0.5 x 10-3 AU/Hr** ix. Peak Purity analysis
6	**Fluorescence detector (FLD) with Post-Column Derivatisation unit**	i. Light source: Helium/ Xenon lamp Excitation Wavelength range: 200 nm to 850 nm or better ii. Emission Wavelength Range: 210nm to 850 nm or better iii. Spectral bandwidth: 20 nm

		iv. Wavelength accuracy: ± 3 nm or better v. Wavelength repeatability: ± 0.2 nm or better vi. Signal to Noise ratio for Water Raman peak should be > 500 vii. Flow cell volume: < 2 uL viii. Data rate: 70Hz or better ix. Post Column Derivatisation (Photo chemical or electro chemical) unit shall be supplied with FLD
7	**Refractive Index Detectors (RID)**	i. RI Range: 1.00 to 1.75 RIU ii. Measurement range: ± 6 x 10-4 RIU iii. Noise level should be ± 2 x 10-9 RIU iv. Drift: 2 x 10-7 RIU/h v. Compatible with flow rates up to 5 mL/min vi. Flow cell volume: < 2 uL vii. Safe leak detection viii. Temperature control 30°C /ambient to 55 °C or better ix. Data collection rate: 60Hz or better
8	**Computer platform and Software**	i. Computer platform Software and operating system ii. Suitable branded computer, i7 or equivalent Advanced processor with 16 GB DDR3Memory, Upto 1 TB SATA hard drive (with 5 TB External Drive) (7200 RPM) or better for software requirements of HPLC DVD-RW 32" LED Monitor with suitable authorized operating system, 4 USB Port or higher configuration. iii. Licensed MS Office and PDF editor to be included along with the system. iv. Software must be Multitasking type. It must acquire and process the data simultaneously. v. Workstation must be able to control the UHPLC with FLD RID and PDA/DAD & acquire, store, process and reproduce the data by the same computer. vi. Software must have automated calibration and Quantitative optimization. vii. Automated Quantitation and reporting of acquired samples. viii. Data may be processed as it is being acquired. ix. Chromatography software with integrated Oracle/SQL/ other database for the easy retrieval of data in case of disaster. x. Suitable multi-functional LaserJet B/W Printer should be supplied. xi. Software should comply with 21 CFR Part 11 regulations and Support GLP operations.

9	**Branded UPS System**	i.	5 KVA online UPS with batteries with 60 mins backup suitable for complete system should be offered.
10	**Instrument Performance Verification/IPV (IQ,OQ, PQ)**	i. ii. iii. iv.	Automated system generated OQ and PQ report as per the end user requirement should be submitted. To be done free of cost with ISO 17034 traceable calibration standards for the first 2 years (at installation & at every maintenance visit of each year) with PM kits for UHPLC including detectors with lamp, only consumables will be cover in CMC, UPS with its accessories and all associated supply of UHPLC. OQ/IPV with report should be done free of cost with supply of PM Kits and calibration standards during warranty period. Satisfactory performance certificate should submit to the laboratory after calibration of UHPLC including detectors with lamp, Post column derivatiser unit, UPS with its accessories and all associated supply of UHPLC before one month of warranty period expired with supply and fixation of PM kits of UHPLC system. UPS with its accessories and all associated supply of HPLC before one month of warranty period expired with supply and fixation of PM kits of HPLC system.
11	**Warranty**	i. ii. iii. iv. v.	Minimum 5 years from the date of completion of IQ, OQ and PQ of UHPLC to the user satisfaction including PDA, FLD Detectors, POST COLUMN DERIVATISER (Photo Chemical or electrochemical) for mycotoxin analysis and UPS all associated accessories of UHPLC. The date of warranty period for UHPLC including detectors with lamp, POST COLUMN DERIVATISER unit, UPS and all associated supply of UHPLC will start from the date completion of IQ, OQ and PQ of UHPLC. It should cover hardware, software as well as wear and tear consumables (except column and sample preparation), prompt service (within 48 hours on-call), training and application support during the period. In case of breakdown of the system, the servicing to be done immediately by the supplier during the warranty period and maximum down time period is 48 hrs, if it's not attended the warranty will extends accordingly. For delay in attending break-down call beyond 2 working days a penalty @ ₹5,000/- per day shall be charged. Such amount will be deducted from any amount due or which may become due to

		the supplier. The warranty period shall automatically stand extended by the number of days taken to rectify the defects (beyond 2days).
12	**After sales service/Post Warranty**	i. Should have a good after sales service/technical support capable of reaching at short notice the places where UHPLC is proposed to be installed. Visits and unlimited breakdown calls by service/application support, engineers should attend immediately without fail for UHPLC including PDA, FLD with POST COLUMN DERIVATISER (Photo chemical or electro chemical) unit and UPS system. ii. Troubleshooting training (Instrumentation/Application) as and when required shall be provided free of cost. iii. The application and method development support must be rendered for minimum 30 days during the warranty period. iv. The vendor should also assure supply of spares, accessories, consumables and service for at least 10 years. v. Terms and conditions for the AMC & CMC, after the warranty period has to be specified. vi. Quote for AMC & CMC for 6th, 7th, 8th, 9th & 10th years, to be submitted separately. vii. The CMC shall include parts cover all hardware including detector, software as well as wear and tear consumables (except column and sample preparation), PM kit (yearly), annual calibration along with documentation. viii. **AMC/CMC price quoted by the vendor will be considered as independent price.It will not be considered for finalizing the L1.**
13	**Spares and accessories**	i. The following consumables, but not limited to should be supplied along with instrument: a) C18 (2.1×100MM) – 2 Nos b) Sugar analysis columns- 2 Nos c) Certified Vials (1.5 mL) with cap and septa 1000 Nos each. d) Poly Spring inserts or glass insert vials-150uL 1000 Nos each. e) High Recovery Vials (2 mL) with septa cap 1000 nos each. f) Amber Vials (2 mL) with septa cap 1000 nos each. g) PM kit for HPLC for trouble free operation during warranty period should be provided free of cost every year along with instrument. h) Injection Loop of 100uL for the auto sampler should be offered. Qty-1 i) UHPLC Peak tubing (5 meter), (UHPLC round tight ferrules- 40 Pcs).
14	**Experience**	i. The supplier should have executed at least Minimum 20 or more of the model/series of model quoted successful installations among which 5 should be installed in Government institutes. ii. The Complete users list for the quoted model in India, with contact addresses, emails and phone numbers should be provided.

15	**Delivery**	i. The instrument supplied to the site of address provided. If any permit such as road permit/way bill, customs/excise duty, octroi or any taxes should be borne by the supplier. If any documents required for the above purpose, the office may consider to provide on request prior intimation
16	**Training Component**	i. The supplier will have to carry out the successful installation at our laboratory premises (wherever the system will be installed) and provide on–site comprehensive training for scientific personnel operating the system and support services for 5/7 days every year with the system and training at the supplier's lab premises is also required.