

**SUPPLEMENTAL/ BID BULLETIN**  
**UNIVERSITY OF THE PHILIPPINES MANILA**  
The Health Sciences Center  
**BIDS AND AWARDS COMMITTEE 3**

**Bid Bulletin No. 2**

June 09, 2022

Project Title: *Supply of GC-MS/MS; GC-MS Triple Quadrupole GC-MS for Biochemical Laboratory*

(PR No. 15584)


Notice is hereby given to all interested suppliers/prospective bidders of the following amendment/modification in the bidding documents for the above cited project:

Particular	From	To
Technical Specification and Terms and Conditions	None	<b>PLEASE SEE ATTACHED REVISED TERMS AND CONDITIONS AND TERMS AND CONDITIONS SUBMITTED BY THE END-USERS.</b>

2. All the other specifications, terms and conditions remain the same.

3. This is posted at PhilGEPS [www.philgeps.gov.ph](http://www.philgeps.gov.ph)

For guidance and information of all concerned.

  
**TRISTAN NATHANIEL C. RAMOS, DDM, MPH**  
Chair ✓

Received by the bidder:

\_\_\_\_\_

Company/Bidder:

\_\_\_\_\_

Date: \_\_\_\_\_



# INSTITUTE OF HUMAN GENETICS

National Institutes of Health, University of the Philippines Manila "The Health Sciences Center"



NIH - IHG12058888



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8 June 2022

**TRISTAN NATHANIEL C. RAMOS, MD**  
CHAIR  
BIDS AND AWARDS COMMITTEE 3  
University of the Philippines Manila

Dear Dr. Ramos,

We are respectfully endorsing the revised Terms of Reference under Purchase Request 15584 for the procurement of GC-MS/MS; GC-MS triple quadrupole GC-MS of the Institute of Human Genetics-National Institutes of Health which was discussed during the Pre-Bid Conference last June 6, 2022.

Thank you very much and we look forward to your continued support to the institute.

Sincerely yours,

**MARIA MELANIE LIBERTY B. ALCAUSIN, MD FPPS**  
Director

UPM - Procurement Office

RECEIVED

MARION YAVORIANO  
BAC 3

June 09, 2022

**TERMS OF REFERENCE**  
**PURCHASE REQUEST 15584**

**1. GC-MS/MS; Triple Quadrupole GC tandem MS**

A. Two Triple Quadrupole Mass Spectrometer (MS1/MS2) specification:

**Ion Source:** EI (standard) and CI (included)

**Ion source material:** with a shield that blocks radiant heat generated by the filament

**Ion source temperature Range:** 140 to 350 °C

**Interface Range:** 50 to 350 °C

**Filaments:** Dual filaments for EI; automatic switching w/ shield

**Detector:** Secondary electron multiplier with overdrive Lens and conversion dynode  $8 \times 10^6$  dynamic range or equivalent

**Electron energy:** 10 to 200 eV; selectable; or equivalent depending on manufacturer's brand

**Mass filters (2):** with pre-rods to achieve high-accuracy mass separation performance

**Mass axis stability:**  $\leq \pm 0.10$  u over 48 hours (constant temperature)

**Mass range:** Minimum range should be  $\leq 10$  m/z and maximum range should be  $\geq 1050$  m/z

**Resolution:** Selectable, Minimum range should be  $\leq 0.4$  and maximum range should be  $\geq 3.0$  Daltons

**Scan rate:** Up to 20,000 amu/s

**Acquisition rate:** 20 scans/sec or better (m/z=50 to 500); 10 scans/sec or better (m/z 100 to 1000)

**Tuning:** Autotune or manual

**MRM speed:**  $\geq 800$  transitions/sec

**Minimum MRM dwell:**  $< 0.5$  msec

**Collision cell:** Hexapole; 0 to 60 eV

**Collision cell gas:** Nitrogen with helium quench gas or Argon Gas

**Collision energy:** Selectable up to 60 eV

**Vacuum system:** Dual stage turbomolecular pump; 360 L/s (main pump); Oil rotary pump, 30 L/minute (60 Hz) (fore pump)

**Software:** Simultaneous SCAN/SIM measurement, data handling (quant/qual)

**EI scan sensitivity:** Signal-to-noise (S/N)  $> 1,500$  at m/z 272 for 1 pg octafluoronaphthalene (OFN) in EI scan. Higher sensitivity is preferred.

**EI MRM IDL:**  $\leq 4$  fg OFN

**EI MRM S/N ratio:**  $> 18,000$  for the transition from m/z 272 to m/z 222 for 100fg octafluoronaphthalene (OFN) in EI MRM. Higher sensitivity is preferred.

**Acquisition modes:** Full scan, MS Product ion scan, Precursor ion scan, Selected ion monitoring (SIM); Multiple reaction monitoring (MRM), Simultaneous full scan and MRM, Product ion confirmation (PIC) mode: MRM acquisition acts as an automatic trigger for the acquisition of product ion spectra; combined full scan and SIR; Automated MRM optimization; pseudo multiple reaction monitoring or equivalent

B. Gas Chromatography (GC)

- GC must have a specification published for retention time repeatability of  $< 0.008$  % or  $< 0.0008$  minutes; area repeatability  $< 1\%$  RSD

- System should have a technology that uses various control methods to control carrier gas flow to a constant flow speed, flow rate, or pressure.

- Four detectors can be installed simultaneously and individually temperature controlled.
- Compatibility of the unit to process analytical data derived from the laboratory's existing unit of single quadrupole GC-MS
- Interface must provide access to all of the following:
  - a. Connectivity to check status or run diagnostics from anywhere within your network
  - b. Built-in self-guided diagnostics and maintenance capabilities
  - c. Method and sequence editing without the need for a data system
  - d. Easy access to logs and complete user documentation
  - e. with password enable feature to limit access to authorized lab users only
  - f. with reliable error and warning system
- Pressure has typical control of  $\pm 0.001$  psi for the range of 0 to 150 psi. Pressure set points may be adjusted in increments of 0.001 for the range 0.000 to 99.999 psi, and 0.01 for the range 100.00 to 150.00 psi with integrated leak detector function
- with 7 pressure program ramps -.
- System must have a split/splitless inlet (S/SL), 0-150 psi. Inlet sealing system is built in standard with each S/SL inlet for quick, easy, injector liner changes in under 30 seconds.
- System is capable of effluent splitting, back flushing, and column switching or multiple backflush configurations.
- The programmed rate setting range should be -250 to 250°C/ min. Temperature set point resolution: 0.1°C or better. The oven should be able to cool down in a maximum of 3.4 min from 450°C to 50°C; with highly precise oven control
- Possible to program 32 temperature ramps, with preset oven cooling rates
- Possible to use capillary columns of 50, 100, 250, 320 microns and above.
- The pressure set points should be adjustable by increments of 0.001 psi up to 150 psi. Maximum temperature attainable should be  $\geq 450^\circ\text{C}$ .
- Split ratio: up to 9999.9:1
- Touchscreen user interface
- System should be supplied with computer that has minimum 16Gb RAM, 480G Solid State Drive (SSD) and a software, which is based on Microsoft Windows 10 operating system for instrument control, data acquisition, data analysis, quantization, automation & customization with online and offline sessions provided.

- System should be designed and manufactured under ISO9001 and should comply with most of international regulatory, safety and electromagnetic compatibility requirement

#### Auto sampler

- Must be have a minimum of 16 vials auto sampler or better, for washing and other reagents for standard addition; must be able to accommodate a minimum of 150 samples per batch run
  - Injection volume range:** 10nl to 200 uL
  - Injection Linearity:** >0.999 coefficient of deviation
  - Maximum Run time:** 9999.99 min.
  - Sample delivery precision:** ≤1.00% RSD
  - Sample Carryover:** <0.005% or 5ppm
  - Safety Mechanics:** Leak Sensor (if applicable) and self-diagnosis function

#### Column and Column Oven

- Column:** 5Sil MS, 30m, 0.25mm, 0.25um or equivalent depending on manufacturer's brand
- Column Temperature Control:** up to 450°C
- Column Tracking:** column history/ information tracking

### C. SYSTEM SOFTWARE SPECIFICATIONS- for data acquisition, data handling (quantitative/qualitative)

with software platform to support data generation and processing:

- Availability of quantification methods database; up to 10 libraries configuration; installation of 3 libraries
- Automated MRM scheduling Dwell time, inter-channel delay time, and inter-scan delay time for individual (acquisition rate and rate assignment)
- should have capability of locking/ adjusting the retention time so that same retention time can be reproduced from system to system and the method should be electronically transferred.
- allows processing of data employing different quantification approaches: 1) multi-point calibration; 2) single point calibration; 3) standard addition procedure; 4) internal standard method; 5) surrogate calibration and others.
- includes automated workflow for setting up and starting of acquisition of samples batches and result generation and Laboratory Information Management System (LIMS) export
- remote access processing of data is possible

### D. COMPUTER SPECIFICATIONS:

- Manufacturer: Hewlett-Packard or equivalent
- Processor: Intel® Core i7-12800H
- Memory: 16GB (2x8GB) DDR4-2666 nECC RAM
- Storage: 1 TB 7200 RPM SATA Hard Drive
- Hard DriveGraphics: Intel UHD Graphics 630
- Communications: Integrated Intel I219LM PCIe GbE Controller; 2nd HP Serial Port Adapter
- Optical Drive: 9.5mm Slim DVD Writer
- Audio: Integrated Conexant CX20632 5.1 HDA codec; 1 audio line in; 1 audio line outPeripheral: HP USB Optical Mouse / HP No Keyboard Option
- Expansion: 5 USB 3.0 (1 front, 4 rear), 3 USB 2.0 (1 front, 2 rear), HDMI port

- Dimensions: 100 x 338 x 381 mm Warranty: HP 3/3/3
- Network Switch: HP OfficeConnect 1420 Series JH329A Gigabit Network Switch (Orderable P/N G1680-63721)
- HP 25es 25" flat, LCD monitor
- HP LaserJet colored printer that can print with a speed of 712.10 sec with a maximum resolution of 600 x 600 dpi for black & color; 800 MHz processor; maximum memory capacity of 128 MB DDR to optimize the performance; has Hi-Speed USB 2.0 port; built-in Fast Ethernet 10/100Base-TX network port & wireless for compatibility and one year of warranty facility.

**Other inclusion:**

- Start-up test kit/s, 300 pcs. Non pre-slit septa 2mL glass vial
- NIST MS Library (latest version), Wiley, Fiehn GC/S Metabolomics RTL Library and kit, SMART metabolite database or equivalent; relevant to pharmaceutical and biochemical compounds and comprehensive database for clinical biomarkers; include Tandem (MS/MS) libraries and GC methods/retention indices library with provision of free updating of the library up to three years from the date of delivery.
- Install Kit for GCs with Gas Purifiers; Gas filter and regulator for Gases
- Vial, screw, 2mL, amber, 100/pk and Blue screw caps, 100/pk and Column based on application
- **Spare supplies/accessories** which include but not limited to: 1) syringe 10 uL for liquid injection, 2) supply of vacuum oil; 3) O-rings; 4) (1) additional analytical column of same specification; 5) vials for washing and waste solvent and 6) one (1) additional column for other clinical diagnosis of IEM applications of the GC-MS/MS; 7) (1) set of gas purifiers; 8) PM kit; 9) one unit 1 TB external hard drive for storage of analytical data (back up); 10) table for the unit; 11) equipment standards and tuning solutions
- Parallel-Redundant Uninterrupted Power Supply (1 unit) which will meet the demand of the required power back up support for the GCMSMS Unit.
- Vacuum pump with (1) free PM service
- Hands-on training will be conducted by factory trained engineers and application specialist to all BGL staff (local at least 3-5 days with hands on).
- Includes all expense paid, minimum of 1-month international training (which include round trip airfare, accommodations, travel and health insurance and cost of living allowance, meals, and other applicable incidental expenses) for two (2) BGL staff in an international clinical lab/ associate laboratory re: 1) utilizing the equipment for method development and validation in clinical diagnosis of IEM; and 2) routine analysis involving urinary organic acid analysis and/or analysis of other biomarkers both for urine and plasma for inborn errors of metabolism via GC-MS/MS.
- Provides analytical methods for analysis of metabolites in biological samples (blood, urine, intracellular materials) and acquisition method with fully optimized GC parameters.
- Warranty: 1 year for replacement of parts and 2 years for services with (2) free Preventive Maintenance service and (1) free Calibration service in line with ISO standards with calibration certificate
- Service support: factory trained service engineers with minimum of 5-year experience
- Should entitle the customer to corresponding discounts on service/ spare parts sale compared to the **supplier's published rates** (after 2-year service and 1 year-on parts, warranty)
- Certificate of Calibration from the Manufacturer (in accordance to ISO guidelines/standards)

E. Reinstallation and re-calibration of GCMS/MS or GC-MS triple quadrupole GC-MS to the New NIH Building with Gas Line

- a. Gas installation package: Gas line system for nitrogen, helium and argon including the tanks and restraints and gas housing (safety measure in case of earthquake); gas shut off valve; and gas purifiers and other applicable accessories
- b. Installation kit with gas purifiers
- c. Re-calibration service with Certificate of Calibration (ISO)
- d. Warranty: 1 year, replacement of parts and services, (2) PM service (semi-annual)

Delivery Period: Within 90-120 calendar days from the date of receipt of P.O.

Price is VAT Inclusive