

**SECTION 3: REQUIREMENT SPECIFICATIONS**
**Equipment 1: LC-HRMS**
**Laboratory/ Location: Food Safety Laboratory**
**HSA000ETT17000052**
**Quantity: 1 unit**

|                                                                                                                                                                       |                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| <b>Supply of New Liquid Chromatograph tandem High Resolution Mass Spectrometry System (LC-HRMS)</b><br><br><b>Location:</b> Food Safety Laboratory <b>Quantity:</b> 1 | <b>Compliances (Yes/ No)</b><br><br><i>**If No, please indicate reason of non-compliances.</i>     |
| <b>Tenderer shall offer a system that can fully meet the specification as follows with equivalent or better functions.</b>                                            |                                                                                                    |
| <b>Technical Specifications</b><br><br><b>High Performance Liquid Chromatograph System</b><br><b>(A) Solvent Rack with Degasser</b>                                   | <b>Yes/ No But Better<br/>(Refer to Annex For Technical Explanation)</b>                           |
| (i) Solvent line purging flow rate must be able to operate at 5ml/min per solvent channel.                                                                            | Yes/ No<br><b>(Better)</b>                                                                         |
| <b>(I) Binary Pumps</b>                                                                                                                                               | Yes/ No                                                                                            |
| (i) Binary pumps must be able to operate in the pH range of 2-12.                                                                                                     | Yes/ No                                                                                            |
| (ii) Binary pumps must be able to perform gradient proportioning and withstand operating pressure of 1200 bar or higher during analysis.                              | Yes/ No<br><b>(Better)(18,000 psi)</b>                                                             |
| (iii) Must have minimum 2 x 2 solvent channels.                                                                                                                       | Yes/ No                                                                                            |
| (iv) Proportioning accuracy of $\pm 0.2\%$ or better.                                                                                                                 | Yes/ No                                                                                            |
| (v) Proportioning precision is $< 0.15\%$ standard deviation.                                                                                                         | Yes/ No                                                                                            |
| (vi) Flow accuracy of $\pm 0.1\%$ or better.                                                                                                                          | Yes/ No                                                                                            |
| (vii) Must have built-in leak sensors, active rear-seal wash system and excess pressure monitoring function.                                                          | Yes/ No                                                                                            |
| <b>(B) Thermostatted column compartment</b>                                                                                                                           |                                                                                                    |
| (i) Must provide finger tight fittings with zero dead volume for easy connection to columns.                                                                          | Yes/ No                                                                                            |
| (ii) Must provide temperature accuracy of $\pm 0.5^{\circ}\text{C}$ or better.                                                                                        | Yes/ No                                                                                            |
| (iii) Must provide temperature stability of $\pm 0.1^{\circ}\text{C}$ or better.                                                                                      | Yes/ No                                                                                            |
| (iv) Must support minimum temperature operating range from 5 to 60 $^{\circ}\text{C}$ .                                                                               | Yes/ No<br><b>(Better)(4 to 90 <math>^{\circ}\text{C}</math>)</b>                                  |
| <b>(C) Well Plate Autosampler</b>                                                                                                                                     | Yes/ No                                                                                            |
| (i) Injection method must use in-line split-loop principle.                                                                                                           | <b>Yes/ No</b>                                                                                     |
| (ii) Must have minimum sample capacity of 100 x 1.5ml HPLC vial.                                                                                                      | Yes/ No                                                                                            |
| (iii) Must have injection cycle time of $\leq 20\text{sec}$ or better                                                                                                 | Yes/ No<br><b>(Better)( <math>&lt;15\text{s}</math> inject to inject, with load ahead enabled)</b> |
| (iv) Must supply one 20 $\mu\text{l}$ injection loop or higher capacity for sample injection                                                                          | Yes/ No                                                                                            |

**SECTION 3: REQUIREMENT SPECIFICATIONS****Equipment 1: LC-HRMS****Laboratory/ Location: Food Safety Laboratory****HSA000ETT17000052****Quantity: 1 unit**

| <b>Supply of New Liquid Chromatograph tandem High Resolution Mass Spectrometry System (LC-HRMS)</b> |                                                                                                                                                                                                                                                                 | <b>Compliances (Yes/ No)</b><br><i>**If No, please indicate reason of non-compliances.</i> |
|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| <b>Location:</b> Food Safety Laboratory <b>Quantity:</b> 1                                          |                                                                                                                                                                                                                                                                 |                                                                                            |
| (v)                                                                                                 | Must have injection volume accuracy of $\pm 0.5\%$ .                                                                                                                                                                                                            | Yes/ No                                                                                    |
| (vi)                                                                                                | Must have injection volume precision of $\leq 0.25\%$ RSD.                                                                                                                                                                                                      | Yes/ No                                                                                    |
| (vii)                                                                                               | Must have carry-over of $\leq 0.004\%$ for caffeine                                                                                                                                                                                                             | Yes/ No                                                                                    |
| (viii)                                                                                              | Must have built-in needle wash function.                                                                                                                                                                                                                        | Yes/ No                                                                                    |
| (ix)                                                                                                | Must have sample thermostating minimally include 4 to 40°C.                                                                                                                                                                                                     | Yes/ No                                                                                    |
| <b>(D) <u>Quadrupole High Resolution Mass Spectrometer System</u></b>                               |                                                                                                                                                                                                                                                                 | Yes/ No                                                                                    |
| (i)                                                                                                 | Must accommodate space constraint of 100cm x 300cm in laboratory for instrument installation.                                                                                                                                                                   | Yes/ No                                                                                    |
| (ii)                                                                                                | Must deliver real-time data acquisition and data processing capability.                                                                                                                                                                                         | Yes/ No                                                                                    |
| (iii)                                                                                               | The mass spectrometer must come with single data system for synchronized instrument control and data acquisition.                                                                                                                                               | Yes/ No                                                                                    |
| (v)                                                                                                 | The quadrupole mass filter must provide variable and stepless precursor ion isolation width selection from 0.4Da to full mass range.                                                                                                                            | Yes/ No                                                                                    |
| (vi)                                                                                                | The mass spectrometer must be able to perform parallel filling and detection.                                                                                                                                                                                   | Yes/ No                                                                                    |
| (vii)                                                                                               | The mass spectrometer must be able to operate in compliance to instrument specifications from 22 to 28°C or wider temperature range.                                                                                                                            | Yes/ No                                                                                    |
| (viii)                                                                                              | Software must be provided to control Liquid Chromatograph and Mass Spectrometer for Qualitative and Quantitative analyses and batch acquisition.<br><br>Software must provide information on accurate mass, isotopic pattern and MS/MS library match functions. | Yes/ No                                                                                    |
| (ix)                                                                                                | The mass spectrometer (hardware) must be able to perform intact proteins analysis, together with a separate/built-in software to support data acquisition in real time.                                                                                         | Yes/ No                                                                                    |
| (x)                                                                                                 | Sensitivity: 500 fg (femtogram) Buspirone on column must yield S/N > 100:1 for Full MS or 200 fg (femtogram) Reserpine on column must yield S/N > 60:1.                                                                                                         | Yes/ No<br>(Better)                                                                        |
| (xi)                                                                                                | Mass Resolution: Must be able to deliver mass resolution of >70,000 at Full Width at Half Maximum (FWHM) for all scan modes for both positive and negative polarities.                                                                                          | Yes/ No<br>(Better)                                                                        |
| (xii)                                                                                               | Must be able to perform concurrent polarity switching in a single scan.                                                                                                                                                                                         | (Do not require)                                                                           |

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**Laboratory/ Location: Food Safety Laboratory**

**HSA000ETT17000052**  
**Quantity: 1 unit**

| Supply of New Liquid Chromatograph tandem High Resolution Mass Spectrometry System (LC-HRMS) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Compliances (Yes/ No)<br><i>**If No, please indicate reason of non-compliances.</i> |
|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| <b>Location:</b> Food Safety Laboratory <b>Quantity:</b> 1                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                     |
| (xiii)                                                                                       | The mass spectrometer must be able to operate in the settable mass range from 50 to 3,000 <i>m/z</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Yes/ No<br><b>(Better)</b>                                                          |
| (xiv)                                                                                        | Scan Speed: Must be able to perform 10 scans per second or better in Full Scan or MS/MS scan mode.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Yes/ No<br><b>(Better)</b>                                                          |
| (xv)                                                                                         | Mass Accuracy:<br>- < 3ppm RMS with external calibration over 24h and without any kind of mass recalibration;<br>- < 1ppm RMS with internal calibration.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Yes/ No                                                                             |
| (xvi)                                                                                        | Polarity Switching: The mass spectrometer must be able to perform ionization polarity switching within one second while maintaining mass accuracy of ≤5ppm in a single injection.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Yes/ No<br><b>(Do not require)</b>                                                  |
| (xvii)                                                                                       | Scan Functions:<br>- The mass spectrometer instrument set up must allow scheduled setup of different events using a graphical user interface.<br>- Must acquire and display Full Scan mass spectra.<br>- Must acquire and display Selected Ion Monitoring scan data for monitoring selected ions for target compound analysis.<br>- Must acquire and display Full Scan MS/MS spectra.<br>- Must acquire and display Selected Reaction Monitoring/Multiple Reaction Monitoring (SRM/MRM) data sets.<br>- Neutral-loss triggered data dependent MS/MS methodology, selecting predominantly precursor ions for MS/MS fragmentation, which show a predefined neutral loss under fragmenting conditions.<br>- Timed SIM for scheduled data acquisition of target compounds.<br>- Timed MS/MS for scheduled data acquisition of target compound fragment spectra.<br>- Must acquire "data independent acquisition" data sets. | Yes/ No<br><br><br><br><br><br><br><br><br><br><b>(Better)</b>                      |
| (xviii)                                                                                      | Other Functions:<br>- Must have automatic gain control to automatically control ion injection time for optimized ion current across the entire chromatographic peak.<br>- Must have dynamic exclusion capability to temporarily exclude an ion, while allowing MS/MS spectra acquisition of minor abundant precursors.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Yes/ No<br><br><br><b>(Better)</b>                                                  |
| (xix)                                                                                        | Ion Sources & Probes: <b>API</b><br>- The API source must have flat tuning and must have ion-optics that enable automated tuning.<br>- The API source must have an automatic tuning program.<br>- The API source must incorporate a safety interlock switch to shut off voltages when probe is removed from source housing.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                     |

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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>- The API source must incorporate Sweep Gas in order to reduce chemical noise.</li> <li>- The API control must include high-voltage dual-polarity power supply, sheath gas flow control, and auxiliary gas flow control to accommodate a wide variety of applications.</li> <li>- Must include an independently heated ion capillary tube, heated by an external heater capable of temperatures up to 400°C.</li> <li>- The ion capillary tube must be removable to provide vent-free maintenance.</li> <li>- All voltages for focusing the ion beam in the API source must be controlled through the data System.</li> <li>- Must include a removable ion sweep cone.</li> <li>- Must support interchangeable ESI and APCI ionization sources and probes.</li> </ul> <p><b>ESI Probe</b></p> <ul style="list-style-type: none"> <li>- Must be able to perform rapid switchover between APCI and ESI using quick release connecting retainers, and without breaking vacuum.</li> <li>- Must operate at flow rates from 1µl/min to 1 ml/min using 100% water without splitting.</li> <li>- The ESI probe needle must be moveable in the x,y and z dimensions relative to the sampling orifice for optimal tuning.</li> <li>- The probe must be capable of temperatures up to 400°C to increase the desolvation efficiency and decrease chemical noise.</li> </ul> <p><b>APCI Probe Assembly</b></p> <ul style="list-style-type: none"> <li>- Must operate at flow rates from 50 µl/min to 2 ml/min using 100% water without splitting.</li> <li>- Must use ceramic heater.</li> <li>- Must include a feedback-controlled heater capable of operation up to 500°C to vaporize the solvent and analyte.</li> <li>- The APCI sample nozzle must be moveable in the x,y and z dimensions relative to the sampling orifice for optimal tuning.</li> </ul> | <p style="text-align: center;"><b>Yes/ No</b></p> <p style="text-align: center;"><b>Yes/No</b></p> |
| <p>(xx) Vacuum System</p> <ul style="list-style-type: none"> <li>- Differentially pumped vacuum system with final vacuum &lt; 4 x 10<sup>-9</sup> Torr.</li> <li>- Roughing pump must come in a noise isolation enclosure.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <p style="text-align: center;"><b>Yes/ No</b></p>                                                  |
| <p>(xxi) Detection System</p> <ul style="list-style-type: none"> <li>- The detection system must have digital electronic noise discrimination.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <p style="text-align: center;">Yes/ No<br/><b>(Better)</b></p>                                     |

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| <b>Supply of New Liquid Chromatograph tandem High Resolution Mass Spectrometry System (LC-HRMS)</b><br><br><b>Location:</b> Food Safety Laboratory <b>Quantity:</b> 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Compliances (Yes/ No)</b><br><br><i>**If No, please indicate reason of non-compliances.</i> |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                |
| <b>(E) <u>Data System</u></b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Yes/ No                                                                                        |
| <p>(i) Two sets of bench-top computer with one printer for data acquisition and data processing with minimum configuration as follows:</p> <ul style="list-style-type: none"> <li>- Processor, 3.3 GHz</li> <li>- 4096 MB 800 MHz DDR2 RAM</li> <li>- 1 TBB SATA II hard drive</li> <li>- DVD-RW</li> <li>- Network-card 10/100</li> <li>- 2 PCI- und 1 PCI-Express- slots</li> <li>- Networkchip 10/100/1000 on board</li> <li>- Operating System, English Windows 7 Professional (32Bit OS)</li> <li>- 23 inch TFT flat screen colour monitor</li> <li>- Cross linked-cable or compatible</li> </ul> <p>(ii) Both the data acquisition computer and data processing computer must be peer-to-peer connected to enable seamless (one-way) data transfer.</p> | Yes/ No                                                                                        |
| <b>(F) <u>Furniture (Applicable for Bench-Top models only)</u></b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Yes/ No                                                                                        |
| <p>If the proposed model is a bench top unit, Tenderer must provide with the following:</p> <p>(i) Must custom-make and supply one or more tables to fit space constraints of 100cm (width) x 300cm (length) for LC and HRMS, respectively, where relevant.</p> <p>(ii) Table(s) must come with 3 drawers.</p> <p>(iii) Table(s) height (~76cm) must flush with existing bench at installation site.</p>                                                                                                                                                                                                                                                                                                                                                      | Yes/ No                                                                                        |
| <b>(G) <u>Training and commissioning</u></b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Yes/ No                                                                                        |
| <p>(i) Must provide onsite or off-site for the following:</p> <ul style="list-style-type: none"> <li>- Theory training (single session, for a total of approximate 34 HSA trainees);</li> <li>- Basic training (4 sessions, for a total of approximate 34 HSA trainees);</li> <li>- Advance training (2 sessions, for a total of approximate 12 HSA trainees);</li> <li>- Maintenance training (1 session for a total of approximate 6 HSA trainees).</li> <li>- At least one theory training, basic training and/or maintenance training must be completed before 31<sup>st</sup> March 2018.</li> </ul>                                                                                                                                                     | Yes/ No                                                                                        |
| <b>(H) <u>Two projects delivery</u></b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Yes/ No                                                                                        |

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| <b>Supply of New Liquid Chromatograph tandem High Resolution Mass Spectrometry System (LC-HRMS)</b><br><br><b>Location:</b> Food Safety Laboratory <b>Quantity:</b> 1 |                                                                                                                                                                                                                                                                                                                                                                               | <b>Compliances (Yes/ No)</b><br><br><i>**If No, please indicate reason of non-compliances.</i> |
| (i)                                                                                                                                                                   | Tenderer must be able to develop, validate and transfer one macromolecule and one small molecule analytical methods within 3 months after onsite instrument commissioning.                                                                                                                                                                                                    | Yes/ No                                                                                        |
| <b>(I) Onsite inspection post tender award</b>                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                               | Yes/ No                                                                                        |
| (i)                                                                                                                                                                   | Contractor must perform site readiness inspection and onsite risk assessment for new instrument installation safety compliance.                                                                                                                                                                                                                                               | Yes/ No                                                                                        |
| (ii)                                                                                                                                                                  | The Contractor must be able to perform risk assessment for the LC-HRMS instrument that is located in the designated laboratory. A risk assessment report in 5x5 matrix must be submitted prior to the delivery of the instrument.                                                                                                                                             |                                                                                                |
| <b>(J) Accreditation / Certification</b>                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                |
| (i)                                                                                                                                                                   | The manufacturer of the product shall preferably ISO 9001 certified or equivalent. A copy of the certificate must be submitted for evaluation upon request.                                                                                                                                                                                                                   | Yes/ No                                                                                        |
| <b>(K) Installation, commissioning &amp; warranty</b>                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                               | Yes/ No                                                                                        |
| (i)                                                                                                                                                                   | LC tandem HRMS system must be delivered, unpacked, assembled and fully commissioned before 31 <sup>st</sup> March 2018, with three-year warranty including annual preventive maintenance. All replacement for hardware and software must be provided. The consumables required to perform the PM shall also be included at no additional charge.                              | Yes/ No                                                                                        |
| <b>(L) Post warranty maintenance services</b>                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                               | Yes/ No                                                                                        |
| (i)                                                                                                                                                                   | Tenderer shall also quote for 3-year post warranty comprehensive maintenance contract for the instrument that includes of the following:<br>a) Annual PM<br>b) Unlimited breakdown calls during Office Hours<br>c) Consumables required to execute the PM<br>d) Supply of replacement parts<br>e) Software upgrades if any<br>f) Provision of technical & application support | Yes/ No                                                                                        |
| (ii)                                                                                                                                                                  | The Contractor shall bill HSA on annual basis upon completion of each PM.                                                                                                                                                                                                                                                                                                     |                                                                                                |
| <b>(M) Application &amp; Technical support (onsite)</b>                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                               | Yes/ No                                                                                        |
| During warranty and post warranty contract coverage period, the tenderer must provide the following:                                                                  |                                                                                                                                                                                                                                                                                                                                                                               | Yes/ No                                                                                        |
| (i)                                                                                                                                                                   | Application and technical support with a maximum response time of 4 hours upon receipt of oral/written notification.                                                                                                                                                                                                                                                          |                                                                                                |
| (ii)                                                                                                                                                                  | The Services to be performed by the Contractor shall consist of Preventive Maintenance and Corrective Maintenance as described below.                                                                                                                                                                                                                                         |                                                                                                |



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| <b>Supply of New Liquid Chromatograph tandem High Resolution Mass Spectrometry System (LC-HRMS)</b><br><br><b>Location:</b> Food Safety Laboratory <b>Quantity:</b> 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Compliances (Yes/ No)</b><br><br><i>**If No, please indicate reason of non-compliances.</i> |
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| <p>of material, workmanship, design, assembly, installation or integration for a period of one (1) month from the date of acceptance of the materials by the Authority (hereinafter referred to as "the Materials Guarantee Period"). The Equipment Guarantee Period and the Materials Guarantee Period shall collectively be known as the "Guarantee Period".</p> <p>b) Where during the Guarantee Period, any part or unit of the Equipment serviced by the Contractor or materials used for the Services or supplied therefor are found to be defective of any of the reasons specific in Clause Guarantee-(a) above, the Contractor shall at the written request of the Authority replace the same at the expense (including freight charges, transportation costs or other incidental charges) of the Contractor or if the Authority so agrees make good or repair the same at the expense (including freight charges, transportation costs and other incidental charges) within a Guarantee Turn-Around-Time of seven (7) working days. The Equipment or materials or part or unit thereof so replaced or repaired shall be subjected to the Guarantee under this Clause for the Authority or one (1) month whichever is later and such balance of the Guarantee Period shall begin to run only from the date of receipt of the part or unit so replaced or repaired by the Authority.</p>                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                |
| <p><b>SAMPLE EVALUATION</b></p> <ol style="list-style-type: none"> <li>1. Test samples in individual 1.5ml HPLC vials will be provided by HSA. These test samples comprised of pure standards and sample extracts spiked with standards and shall be provided once only. Instructions for analytical testing will be provided during sample vials collection.</li> <li>2. All sample vials must be analysed in a facility located in Singapore only.</li> <li>3. It is recommended testing be performed within 24 hours to reduce effect (to a minimum) due to degradation, either in solution or in matrix.</li> <li>4. Tenderer shall collect the sample vials on <b>Wednesday, 26<sup>th</sup> July 2017</b> and the report shall be submitted within 2 weeks i.e. <b>10<sup>th</sup> August 2017</b>, unless the Authority <u>gives consent</u> in writing <u>for extension of deadline</u>.</li> <li>5. All test results must be accompanied by analysis date and time stamps.</li> <li>6. All test sample vials must be analysed using the instrument proposed for the tender. Results obtained by using proxy instruments will not be considered.</li> <li>7. Tenderers who do not participate in the test sample evaluation phase or who fail to follow the instructions provided for analytical testing will be disqualified from the evaluation.</li> <li>8. All Tenderers must submit a summary report, in tandem with a comprehensive report that discusses (i) test methods, (ii) individual ion chromatograms, (iii) peak areas, (iv) resolutions, (v) signal to noise ratio, (vi) RSD values (where applicable), (vii) MS/MS spectrum, as well as (viii) application libraries or compound table for identification (if any) purposes, either in hard copy or in digitized pdf format via e-mail.</li> </ol> | <p><b>Yes/ No</b></p>                                                                          |

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| <b>Supply of New Liquid Chromatograph tandem High Resolution Mass Spectrometry System (LC-HRMS)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               | <b>Compliances (Yes/ No)</b><br><i>**If No, please indicate reason of non-compliances.</i> |                        |                            |                                  |                                         |                                            |                                           |                                               |                |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|--------------------------------------------------------------------------------------------|------------------------|----------------------------|----------------------------------|-----------------------------------------|--------------------------------------------|-------------------------------------------|-----------------------------------------------|----------------|
| <b>Location:</b> Food Safety Laboratory                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>Quantity:</b> 1                            |                                                                                            |                        |                            |                                  |                                         |                                            |                                           |                                               |                |
| 9. Two types of test samples shall be provided as follows: <table border="1" data-bbox="277 459 1094 758"> <thead> <tr> <th>Small molecules analysis</th> <th>Macromolecule analysis</th> </tr> </thead> <tbody> <tr> <td>100ng/ml standard of drugs</td> <td>100ng/ml standard of lantibiotic</td> </tr> <tr> <td>3 levels of concentration for standards</td> <td>Single level of concentration for standard</td> </tr> <tr> <td>2 unknown test samples for identification</td> <td>Single unknown test sample for identification</td> </tr> </tbody> </table> |                                               | Small molecules analysis                                                                   | Macromolecule analysis | 100ng/ml standard of drugs | 100ng/ml standard of lantibiotic | 3 levels of concentration for standards | Single level of concentration for standard | 2 unknown test samples for identification | Single unknown test sample for identification | <b>Yes/ No</b> |
| Small molecules analysis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Macromolecule analysis                        |                                                                                            |                        |                            |                                  |                                         |                                            |                                           |                                               |                |
| 100ng/ml standard of drugs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 100ng/ml standard of lantibiotic              |                                                                                            |                        |                            |                                  |                                         |                                            |                                           |                                               |                |
| 3 levels of concentration for standards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Single level of concentration for standard    |                                                                                            |                        |                            |                                  |                                         |                                            |                                           |                                               |                |
| 2 unknown test samples for identification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Single unknown test sample for identification |                                                                                            |                        |                            |                                  |                                         |                                            |                                           |                                               |                |

**COMPLIANCE OF REQUIREMENT SPECIFICATIONS**

**I hereby confirm that I can meet all the specifications and requirements as stated in Section 3: Requirement Specifications.**

Tenderer's (as \*Principal/Agent)  
 Company or Business Registration No: 200512450H

Tenderer's official

Stamp:

Authorized Signature

Name: Joanna Ang

Designation: Account Manager

Please indicate any non-compliance to requirement specifications here should there be any.

| Reference To    | Remarks                                                                                  |
|-----------------|------------------------------------------------------------------------------------------|
| (A),(B),(C),(D) | Offering ULTRA PRESSURE Liquid Chromatograph System with Ion Mobility Qtof (Refer Annex) |
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