# *ANNEX II + III:* TECHNICAL SPECIFICATIONS + TECHNICAL OFFER

**Contract title: Supply of laboratory equipment for the purposes and functioning of scientific laboratories of the Blue Growth Research centre at Trakya University in Lots**

**Lot 1 Supply of GC-MS MS**

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**Publication reference:** <**CB005.3.12.001 – PP - Supply 7** >

**Columns 1-2 should be completed by the contracting authority**

**Columns 3-4 should be completed by the tenderer**

**Column 5 is reserved for the evaluation committee**

Annex III - the contractor's technical offer

The tenderers are requested to complete the template on the next pages:

* Column 2 is completed by the contracting authority shows the required specifications (not to be modified by the tenderer),
* Column 3 is to be filled in by the tenderer and must detail what is offered (for example the words ‘compliant’ or ‘yes’ are not sufficient)
* Column 4 allows the tenderer to make comments on its proposed supply and to make eventual references to the documentation

The eventual documentation supplied should clearly indicate (highlight, mark) the models offered and the options included, if any, so that the evaluators can see the exact configuration. Offers that do not permit to identify precisely the models and the specifications may be rejected by the evaluation committee.

The offer must be clear enough to allow the evaluators to make an easy comparison between the requested specifications and the offeredspecifications.

| **1.**  **Item number** | **2.**  **Specifications required** | **3.**  **Specifications offered** | **4.**  **Notes, remarks,  ref to documentation** | **5.**  **Evaluation committee’s notes** |
| --- | --- | --- | --- | --- |
| **1** | **1. GC-MS MS**  1. System must be consists of a gas chromatography, a triple quadrupole mass spectrometer, Head-Space Unit, Thermal desorption unit, Pryolyzer unit, Stir bar sorptive extraction unit, auto-injection unit for liquid and gases, a personal computer and accessories.  2. Gas chromatograph shall have a microprocessor, and all systems mentioned above shall be computer controlled and programmed with a single software.  3. It shall also be operable independent of computer. It shall be designed for capillary column use. It shall be a touch screen on the GC.  4. It shall consist of an injector block, a column oven and an interface between the GC and MS/MS, all shall be independently temperature controlled.  5. The injector shall be a multimode or PTV type that can be heated up to 450 °C. Injection block should have cooling system and should be carried out at least 4-stage temperature program. Injection block gas pressure values to be set with accuracy 0.001 psi  6. Injection block should be set to at least split-splitless njections  7. The injector total flow setting must be adjustable between 0-1250 ml/min H2 or He.  8. Electronic pressure control shall be possible for injector and column.  9. 2 injection block and at least 3 detectors except mass detector could be mountable to Gas Chromatography at the same time.  10. Column oven shall be heated up to 450 °C with 0.1 °C increments, at least 20 steps temperature programs shall be applicable and it shall be capable of applying ramp rates between 1 and 120 °C/min.  11. Column oven must cool down from 450 °C to 50 °C at most within 4 minutes  12. The unit of pressure values should be set as psi, kpa and bar.  13. Gas flow rates for the column must be adjustable between 1-100 psi in at least 0.001 or 0.0001 psi increments.  14. Mass scan range shall be at least 10-1050 amu and it shall at least be adjustable in 0.5 amu steps to any value desired.  15. It shall be designed to satisfy direct entry of 0.32 mm or smaller i.d. capillary columns to the ionization source.  16. The interface between the GC and the MS shall be temperature controlled to at least 350°C in maximum 5°C increments.  17. The ionization must be electron impact type. Related parts and consumables must be supplied.  18. Ion source shall be heated up to 350 °C.  19. Minumum MRM reading (dweell) time should be 1 milisecond  20. Scan speed shall be at least 20.000 amu/sec.  21. Mass detector must be electron multiplier type.  22. It must be sensitive for detecting 10 fg/uL octafluoronaphtalene provided that S/N> 1000/1. Instrument detection limit for 10 fg/uL OFN should be at most 5 fg.  23. There must be at least two filament installed in the system in EI mode.  24. Autosampler tray shall be controllable and programmable with computer.  25. Vials which are used in the autosampler’s trays must have a volume at least 2 ml, and the caps for these vials shall be with pre-placed septa.  26. The software shall work in accordance with the systems parts and there shall not be any or problems arising from this software when worked in accordance with its user manual.  27. The software must perform complete instrument control of all GC and MS parameters, tuning, calibrations, diagnostic tests, data analysis during data acquisition, comparing ion chromatograms, common graphical representation of TIC and selected ions and mass ranges, searching mass spectra from the libraries, quantitative analysis, easy direct plotting of spectra and chromatograms, easy transfer of spectra and chromatogram to text editor software, etc.  Accessories: 100 units of septa; 100 units of SBSE stir magnetic bar, 3 units of syringe for liquid injection; 10 units of MS ferrule; 10 units of GC ferrule; 3 units of Column; Montage kits should be given with the device; 500 vials of 2 mL capacity and 500 caps with pre-placed septa suitable for the vials for iquid injection; At least 8 m3, 1 Helium and nitrogen gas cylinders and 1 manometers suitable for the gas, filters, traps and fittings  28. The device should be guaranteed for at least 2 year against any manufacturing and assembly defects. Spare parts and service must be guaranteed for 10 years after the end of the warranty period. |  |  |  |