SPECIFICATION OF MALDI-ToF

The system should be based on Matrix assisted Laser desorption and Ionisation Time of Flight Mass spectrometry.

The system should be a complete package with suitable data base software and workstation for microbial identification including Bacteria (Gram positive, Gram negative, Aerobic, Anaerobic Bacteria, Mycobacterium (both MTBC and NTM), Yeast and Filamentous Fungi .

General Specification

The package should have the below specification or better:

1. Should be IVD and BIS approved Bench-Top MALDI TOF MS based microbial identification system with Linear TOF measurement with effective path length of >70cm.

2. Should have mass range from 1 to 500 m/z or 2000-20000 Dalton.

3. Should have Positive mode of ionization mode for protein/ peptide ionization for microbial ID.

4. System should be equipped with Solid state Laser with variable repetition rate to enhance the speed with a Warranty of atleast 500million shots.

5. System should have automated mechanism for self cleaning through software and should have easy maintenance mechanism.

6. Capable of identifying microbes up to species level and capable to denote mixed cultures.

7. Should be able to detect species with low amount of input cells $<10^6$, and it should be a high throughput system capable of identifying atleast ~200samples/Hr.

Database & Software

1. The database should be IVD approved. It should include microbial strains isolated from different sources such as Human, Animal and Environmental for unbiased ID.
2. The IVD approved database should have nearly 4000 Bacterial species & 200 Yeast species.
3. Should have IVD approved Mycobacteria database with atleast 100 species of both MTB & NTM.
4. Should have IVD approved Filamentous fungi database with atleast 100 species.
5. Should have a upgradtion possibility of software to add new species/ strains by the user for inhouse Library generation.
6. All the software should be versatile, easy to use instrument control, and database and analysis software.
7. Results should be displayed directly with the species name of the microbe.
8. Should have regular upgradation possibility for IVD approved software free of cost.
9. Should have kits for Direct ID from Blood culture/Body Fluids as well as Kits for Anti-Microbial Resistance (AMR) patterns for various antimicrobials.
10. Should have taxonomy trees against reference spectra concerning taxonomic relationships.

11. Should have suitable software for Protein Molecular Weight measurement for research application.
12. Demonstration of the quoted model should be done.
13. Should provide estimate of cost of consumables for the 200 samples per day for five years.

Workstation, Accessories & Reagents

1. Should provide work station essentials like Computers with suitable digitizer, hard drive, Operating System, Color Printer and Barcode scanner etc.

2. Should provide sufficient number of target plates for sample input, Matrix & calibration Standards

3. All required consumables along with their cost to be quoted at the time of bidding .

4. Equipment should have onsite warranty of 5 years followed by CMC of 5 years after expiry of warranty period.