

TRANSLATIONAL HEALTH SCIENCE AND TECHNOLOGY INSTITUTE
NCR Biotech Science Cluster, 3rd Mile stone, PO Box.04,
Faridabad-Gurgaon Expressway
Faridabad-121001

Ref.No. THSTI/NIT/20 /16-17

30 Dec 2016

Subject: Purchase of Compact Mass (C- MS) instrument equipped with TLC and
ASAP prob analyser on proprietary basis- For Inviting comments thereon.

The request has been received from Dr Kanury Rao, Head- DDRC of THSTI to purchase the subject items from M/s ADVION INC, USA on proprietary basis. The Proprietary Article Certificate submitted by M/s ADVION INC, USA is attached.

The above documents are being uploaded for open information to submit objections, comments, if any, from any manufacture regarding proprietary nature of the equipment/item giving Reference No. THSTI/NIT/20/16-17. The comments may be emailed to purchase@thsti.res.in or submitted by speed post/courier at the under mentioned address on or before **16 Jan 2017 up to 1500 Hrs.**, failing which it will be presumed that any other vendor is having no comment to offer and case will be decided on merits.

To Be Submitted To

Section Officer (Stores & Purchase)
Translational Health Science and Technology Institute
3rd Mile Stone, Faridabad-Gurgaon Expressway, Faridabad – 121001
Phone: +91-129-2876432

Section Officer (S&P)

Encl:

1. PAC (Certificate)
2. Specifications of equipment

PAC Certificate:



TO WHOM SO EVER IT MAY CONCERN

SOLE SOURCE JUSTIFICATION / PROPRIETARY CERTIFICATE

This is to confirm & certify that EXPRESSION S & L compact mass spec systems with their accessories like ASAP+APCI, Plate Express TLC interface are manufactured by us and are our proprietary technologies particularly with regard to their unique specifications, design & construction.

It also incorporates aspects of technology, for which patent applications have been made and granted.

ESPRESSION S & L CMS – Compact Mass Spectrometer is designed with the chemist in mind, the expression systems are flexible, transportable, mass detector for small and large molecule analysis.

Expression CMS is used for

1. Reaction monitoring

- Direct Injection Analysis (FIA)
 - Choose method in Mass Express; Start the acquisition; Inject sample – Data is acquired
- ASAP-APCI: Compound identification
 - Confirm identity and purity quickly and accurately for both solid and liquid compounds
 - Little to no sample preparation needed with ASAP/APCI and TLC/CMS
- TLC/CMS
 - Unique interface for direct mass analysis of TLC spots
 - Mass confirmation of reaction mixtures and flash fractions

2. Purification

- Mass directed fraction collection for flash chromatography systems and PrepLC systems

3. A versatile mass detector for:

- Any HPLC or UPLC system
- Flow reactors
- SFC systems
- Food safety, Forensic applications, Water purity & Clinical diagnostics

Expression CMS is patented (under Patented API interface): orthogonal ion sampling from heated capillary (US patents 8,373,118 and US 8,473,247). We remain at your service for any further clarifications or further information you may require on this matter.

Yours Truly,
For ADVION Inc,

Dr. VIJAY GUPTA
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Specification:

Specification for the Compact mass (C-MS) Instrument equipped with TLC and ASAP prob analyser

Specifications of the atmospheric pressure ionization mass spectrometer

Mass range: **10 – 1200 m/z**

Mass resolution: Full width at half maximum, FWHM = 0.5 – 0.7 m/z sec⁻¹ at m/z=1000 over entire acquisition range

Available ionization methods: ESI and APCI

Sample introduction methods should be:

1. Direct flow injection (FIA) – dilute and shoot
2. TLC (TLC spot analysis)
3. ASAP (direct solid & liquid analysis without any sample prep)

The instrument should be able to provide following key functions to support synthetic chemistry efforts:

- Direct Injection of the samples (powder or Liquid) without any sample preparation or further dilution of the primary sample without any mobile phase.
- Direct extraction of the sample from reaction vessel and then injection to ionization without any sample preparation or dilution to get M/Z analysis to monitor the progress of the reaction without disturbing the ongoing reaction.
- Orthogonal ion sampling from heated capillary
- TLC spot analyzer: Chemists should be able to get M/Z analysis of various TLC spots
- HPLC- and automated flash purification systems-compatibility of mass spectrometer and software
- Ion source, calibration vials, load/inject valve and API inlet should be located on the front of the unit for easy access. Viewing port to observe ion spray plume.
- Ion sources and inlet capillary should be easily removable for cleaning without venting the MS system
- Solvent stable exterior package. Enclosed source and electronics for safety
- Rough pump, source exhaust and fluid tubing exit through the front allowing access through the hood sash
- Pump and source exhaust should be bi-directional (left or right hand) to allow for optimal hood location without wasted space
- I/Os should preferably be front mounted, allowing for easy access and connection

Additional features required:

- **Mass Spec**

- Orthogonal ion sampling from heated capillary
- Accuracy +/- 0.1 m/z units of the entire acquisition range
- The scan rate is UHPLC compatible, at 10,000 m/z units/second

- Stability +/- 0.1 m/z units over 12 hours' period (18-24 degrees) operating temp
- Polarity: +ve, -ve ion switching in the same run
- Automatic mass calibration
- Not more than 30 min of start-up time, auto-tuning and calibration
- Low Noise Level
- Low Gas Consumption for ESI and APCI less than 10 L/min, ASAP maximum 2 L/min
 - Can start/stop in software or by remote button
 - Automated gas purge of elution head after each extraction
 - Can do single sample extraction with each data file or many extractions in a single data file.

Delivery time, installation, and staff training:

- Within 4 weeks after order, Installation and staff training within 4 weeks or as agreed with the users after this delivery date.

Software

Software should provide chemists with answers in the fewest steps and shortest period of time possible in an easy-to-use interface. TLC spot analyser and ASAP probe analyser are must for this instrument from same vendor. The multi-vendor system will not be encouraged. The data acquisition and workflow solutions should be simple, inviting and efficient.

- software enables automatic optimization of ion source and data acquisition parameters depending on the sample introduction technique chosen (FIA, ASAP or TLC)
- Individual user log-in for system operation and data saving
- It should provide simplified mass interpretation with automatic identification of peaks related to expected compound
- The software provides quantification and deconvolution of acquired data if needed
- Data file should be able to export as net.cdf, .csv, jpeg, png, pdf and xcel files for complete analytical consideration.
- Data can be accessed and processed from an office computer

HPLC- and automated flash purification systems-compatibility of mass spectrometer and software: The system should be easily interfaced with any H(U)PLC, prep-LC or Flash purification systems through the use of a splitter valve (for quantitative purifications) and I/O ports through required software. Chemists should be enable mass directed fraction collection from software

Maintenance & Warranty: For One year Minimum