

# MASS SPECTROMETRY FACILITY

## CSIR-CDRI, Lucknow

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### Charges & Sample Requirement

SL NO.	Analysis	Requirements on Test Sample	Charges in INR./hr./ Spectrum (18% GST will be extra)
1.	ESI/APCI-MS analysis of purified compound only	1-2 mg sample. (Solubility: Methanol, waters or acetonitrile)	<b>450/- per sample</b>
2.	ESI/APCI-HRMS analysis of purified compound only	1-2 mg sample. (Solubility: Methanol, waters or acetonitrile)	<b>900/- per sample</b>
3.	Qualitative LC-ESI-HRMS method development and sample analysis.	5-10 mg sample with information about Nature of sample and solubility (in methanol, waters or acetonitrile)	<b>1350/- per sample/hr (Minimum: 3 hour experiment; 1350 X 3 = 4050/- per sample)</b>
4.	Quantitative LC/MS method development, validation and sample analysis.	5-10 mg sample along with 1-2 mg standard (reference compound). Information about Nature of sample/matrix and solubility by user( methanol, waters or acetonitrile) for 1-3 compounds	<b>1350/- per sample/hrs (Total: 40 hours experiment; 1350 X 40 = 54000/- per sample)</b>
5.	Intact mass analysis by MALDI-TOFMS; (100-500ug Purified Protein)	(Lyophilized/dissolved@10ug/ul purified protein; Shall be tested through SDS-PAGE before analysis, Expected MW to be provided by the user). Bovine Serum Albumin shall be used as positive control.	<b>2000/- Per sample (for all users)</b>
6.	Peptide Mass Fingerprint (PMF); Only MS	For eluted and lyophilized tryptic peptides; Sample to be supplied by user in the form of lyophilized tryptic peptides. Tryptic peptides of commercially available proteins such as Bovine Serum Albumin shall be used as positive control for MS/MS analysis.	<b>1500/- per sample (for all users)</b>
7.	MS/MS analysis for protein identification (~50ug Protein)	For eluted and lyophilized tryptic peptides; (5 peaks MS/MS) Sample to be supplied by user in the form of lyophilized tryptic peptides.	<b>2500/- per sample (for all users)</b>
8.	Nano-LC based fractionation of protein samples (trypsin digested) spotted on MALDI Spotter for MS/MS analysis	Sample to be supplied by user in the form of lyophilized tryptic peptides.	<b>4500/- per sample (for Nano-LC based fractionation) and subsequently 750/- per spot MS/MS analysis through MALDI-TOF/TOF of all the spotted fractions.(for all users)</b>

**Note- The above charges are for acquiring and providing the data only.**

1. As per government rules, GST (18%) will be charged extra on the analysis charges.
2. The analytical data/spectra are provided only for research/development purposes. These can't be used as certificates in legal disputes.
3. Analytical service charges are payable in advance by **National Electronic Funds Transfer (NEFT)** in favour of the Director, Central Drug Research Institute, Lucknow-226031.
4. Samples and payment details should be sent preferably in the same cover.
5. Separate samples should be sent for different analysis.
6. Maximum 5 samples per lot for any type of analysis are accepted at a time.
7. Please send the samples in quantity as mentioned in the above brochure. Samples are not recovered unless a special request is made.
8. Radio-active, unstable and explosive compounds are not accepted for analysis.
9. Interpretation of spectra/data is not undertaken normally. In special cases, this service can be provided as a sponsored project on payment of extra charges.
10. **In case of electronic payment, transaction details must be mention in correspondence letter.**

**All Correspondence should be address to:**

**Facility In-charge,**

Mass Spectrometry Unit,  
Sophisticated Analytical Instrument Facility & Research  
CSIR- Central Drug Research Institute, B.S. 10/1 Sector-10, Jankipuram Extension, Sitapur Road,  
Lucknow-226031 (U.P.) Phone-+91-522-2772450, Ext. 4510, Mobile: +91-9935146775,  
E-mail: sanjeev\_kanojiya@cdri.res.in

**Electronic Payment by NEFT:**

**Name of A/C Holder:** Director CDRI, Lucknow

**Account number:** 30269374557

**Name of Bank:** State Bank of India, **Branch:** CDRI, **IFSC code:** SBIN0010174

**Place:** Lucknow 226031



GSTIN

09AAATC2716R8Z6

Legal Name

COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH

Trade Name, if any

CENTRAL DRUG RESEARCH INSTITUTE

## GUIDELINE FOR LC-MS FACILITY USERS

**Liquid chromatography–mass spectrometry (LC-MS, or HPLC-MS)** is an analytical chemistry technique that combines the physical separation capabilities of liquid chromatography (or HPLC) with the mass analysis capabilities of mass spectrometry (MS).

### Stepwise experiments

1. HPLC/LC-MS Method development: The **method** is the collection of conditions in which the HPLC and MS operates for a given analysis Or **Method development** is the process of determining what conditions are adequate and/or ideal for the analysis required.
2. LC-ESI-HRMS analysis: **Liquid Chromatography-High Resolution Mass Spectrometry (LC-HRMS)** as a widely used technique for identification and quantification of molecules/compounds/analytes separated by liquid chromatography. It provides separation of compounds and detection by MS (provide molecular weight of compounds and accurate mass for molecular formula calculation).
3. LC-ESI-MS/MS analysis: **Liquid Chromatography-Tandem Mass Spectrometry (LC-MS/MS)** is technique in which fragmentation of molecules/compounds/analytes use to identify/ confirm the chemical structure.

**Note-**Charges may vary depending upon complexity of sample or actual time taken in experiment/analysis.

After determination of molecular weight of analyte from LC-MS data analysis. It is advice to send your sample for LC-ESI-MS/MS analysis.

## INFORMATION REQUIREMENTS FOR LC-MS ANALYSIS

S.N0.	Analysis	Information require for analysis
1.	HPLC/LC-MS Method development & analysis.	Nature of sample: plant extracts/chemical reaction products/pure isolated compound from column Or Fraction of plant extract: like hexane, chloroform, ethyl acetate etc. Solubility: Acetonitrile, Methanol or water Expected: Molecular weight of analytes
2.	[LC-MS/MS] analysis or Liquid chromatography-mass spectrometry (LC-MS/MS)	1. Column: 2. Mobile Phase: 3. HPLC Program: 4. Flow Rate: 5. Injection Volume: 6. Concentration of sample: 7. MS Ionization Mode: 8. UV absorption: 9. Peak list: 10. Total ion chromatogram: Retention time of peaks (with their m/z value): example 3.51 min (m/z 395), 5.43 min (m/z 275) and 6.86 min (m/z 520)

**Note-** Analysis can't be performed without required information.

## **QUANTITATIVE ANALYSIS (BY LC-MS/MS)**

### **Option A [ Minimum 40 hrs experiment]**

1. Sample preparation
2. HPLC/LC-MS/MS Method development
3. HPLC/LC-MS/MS Method validation (ICH guide lines)
  - a. Linearity
  - b. Detection Limit
  - c. Quantitation Limit
  - d. Precision
  - e. Accuracy
4. Data acquisition and processing
5. Data analysis
6. Report generation

### **Option B [ Minimum 16 hrs experiment]**

1. Sample preparation
2. HPLC/LC-MS/MS Method development
3. Data acquisition and processing
4. Report generation

### **Option C [ Minimum 8 hrs experiment]**

1. Sample preparation
2. HPLC/LC-MS/MS Method development
3. Data acquisition and processing
4. Processed data (only)

**Note- Charges may vary depending upon complexity of sample or actual time taken in experiment/analysis.**