NATIONAL INSTITUTE OF PLANT GENOME RESEARCH
(An Autonomous Research Institution of the Department of Biotechnology
Ministry of Science and Technology, Govt. of India)
Aruna Asaf Ali Marg, New Delhi – 110 067
Phone: 26735139, 26735141 Fax: 26741658, 26741146

TENDER NOTICE
Tender No. 8/I/NIPGR/S&P/2017-18

Sealed item rate Tenders (in two bid system) are invited on behalf of the Director, NIPGR from manufactures or their authorized dealer, so as to reach this office upto 3.00 PM on or before 31/01/2018 for the Supply, Installation, Testing & Commissioning of 01 no. of HRMS and Triple Quadrupole with accessories at NIPGR Campus, Aruna Asaf Ali Marg, New Delhi 110067.

Sl.No.	**Estimated Cost (in ₹)**	**EMD (in ₹)**	**Time for Completion**	**Date & Time of Pre-Bid Meeting**	**Last Date & Time for Sale of Tender Documents**	**Date & Time of Submission / Opening of Tenders**
1	650.00 Lakhs	13.00 Lakhs	12 Weeks	23/01/2018 1500 Hrs.	30/01/2018 1600 Hrs.	31/01/2018 1500 / 1530 Hrs.

The Earnest Money should be deposited along with the tender in the form of Demand Draft drawn in favour of the Director, NIPGR, payable at New Delhi. The Tender documents and detailed specifications can be obtained in person by the interested firms from the Purchase-Cum-Store Officer, NIPGR, during office hours against non-refundable cash payment of ₹ 2000.00 (Rs. Two thousand only) as mentioned above from 09/01/2018 to 30/01/2018 upto 1600 hrs. The tender document is available on eprocure.gov.in and can also be downloaded free of cost from our website: **www.nipgr.ac.in**

The Director, NIPGR, reserves the right to accept or reject all or any of the bids without assigning any reasons thereof.

Purchase cum Stores Officer

TENDER DOCUMENTS

Name of Work: Supply, Installation, Testing & Commissioning of 01 no. of HRMS and Triple Quadrupole with accessories at NIPGR Campus, New Delhi

Owner: Director, NIPGR, Aruna Asaf Ali Marg, New Delhi – 110 067

Tender Issued to: _____

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Place for submission/
Place of opening tender document: Purchase Section
NIPGR,
Aruna Asaf Ali Marg,
New Delhi-110067

Date & Time of Pre-bid Meeting: 23/01/2018 (15.00 hrs.)

Last date & time for sale of Tender Documents: 30/01/2018 up to 16:00 hrs.

Date & Time of submission of Tender Documents: 31/01/2018 up to 15:00 hrs.

Date & Time of opening of Technical Bid: 31/01/2018 at 15:30 hrs.

COST OF TENDER DOCUMENT: ₹ 2000.00 (Non-refundable)

Purchase cum Stores Officer
NIPGR, New Delhi

TENDER FORM

To

The Director
NIPGR,
ARUNA ASAF ALI MARG,
New Delhi

Dear Sir,

I/We have read and examined the following Tender Documents relating to the **Supply, installation, testing and commissioning of HRMS and Triple Quadrupole with accessories at National Institute of Plant Genome Research, Aruna Asaf Ali Marg, New Delhi 110067**.

- General Conditions
- Instructions to bidders
- General Information
- Specific condition of contract
- Terms and Conditions of Contract Agreement
- Special Terms and conditions of Contract
- Technical specification and Bill of Quantities
- Price Bid

I/We hereby offer to execute the work complete in all respects specified in the underwritten Memorandum within the time specified therein, at the rates specified in the Price Bid and in accordance with the specifications, designs, drawings and instructions in writing referred to in the conditions of tender.

Tenderers Signature and Seal

GENERAL CONDITIONS

1. Sealed tenders are hereby invited from manufacturers/ authorized dealers for the **Supply, installation, testing and commissioning of HRMS and Triple Quadrupole with accessories at National Institute of Plant Genome Research, Aruna Asaf Ali Marg, New Delhi 110067**.

   The tender document consists of General Conditions, Instructions to bidders, General Information, Tender form, Terms and Conditions of Contract Agreement, Special Terms and conditions of Contract, Technical specification and Price Bid which can be obtained at a cost of ₹ 2000.00 (Rs. Two thousand only) (Non-refundable) in cash from 09/01/2018 to 30/01/2018 from the Purchase-cum-Stores Officer at NIPGR, Aruna Asaf Ali Marg, New Delhi. The tender document can also be downloaded from our website: www.nipgr.ac.in free of cost. The tender document is obligatory on the part of the tenderers & bid in no other form will be accepted.

2. The tender documents shall be placed in sealed cover as mentioned in Procedure of Submission of tender and addressed to the Director, NIPGR, Aruna Asaf Ali Marg, New Delhi. The filled and sealed tender should be submitted in two separate envelopes containing technical & price bids to the Purchase Section of NIPGR, Aruna Asaf Ali Marg, New Delhi on or before 31/01/2018 up to 15.00 hrs. and shall be opened on the same day at 15.30 hrs. in the presence of tenderers or their authorized representative. Any envelope received after the said date and time shall not be entertained under any circumstances and no consideration what so-ever shall be given to anything that might be contained in any such envelope.

3. The time allowed for the supply, testing and commissioning of above equipments is 12 weeks from the date of written Supply order.

4. Every tender shall be accompanied by earnest money of ₹ 13.00 lakhs in the form of Demand Draft drawn in favour of the "Director, NIPGR" payable at New Delhi. Any tender not accompanied by such earnest money will be rejected straight away.

5. The Tenderer will submit his tender in prescribed format after examining the tender documents, scope of work, specific conditions of contract, Instructions to bidders, General Information, Terms and Conditions of contract agreement, technical specification, Price Bid, special terms and conditions of contract, specific conditions of contract.

6. The offer shall remain valid for 180 days from the date of opening of Tender.

7. The tenderer shall submit a copy of the latest Sales tax clearance certificate along-with the copies of the audited balance sheets of the past three years.

8. If a tenderer whose tender is accepted fails to undertake the work as per terms of the contract within 10 days to be reckoned from the date of issue of award letter, the earnest Money deposited will be forfeited.

9. NIPGR does not bind itself to accept the lowest or any tender and reserves the right to reject any or all tenders without assigning any reason.

10. NIPGR will not pay any expense, whatsoever incurred by tenderer for the preparation and submission of tenders.

11. The notice inviting tender, will form part of the contract agreement to be executed by the successful tenderer with the NIPGR.

12. All the correspondence on the tender shall be addressed to the Director, NIPGR, Aruna Asaf Ali Marg, New Delhi and any communication addressed to anyone else shall not in any manner to be binding upon the NIPGR, Aruna Asaf Ali Marg, New Delhi.

Tenderers Signature with Seal **Purchase cum Stores Officer**

INSTRUCTIONS TO BIDDERS

1. GENERAL INSTRUCTIONS:

The items referred here-in shall cover the entire scope of the proposal which includes supplying and installation of the equipment including the successful completion and the tests which the NIPGR desires testing and commissioning shall be carried out.

2. PROCEDURE FOR SUBMISSION OF TENDERS:

The following procedure shall be adopted for submission and opening of tenders. The sealed envelope SUPERSCRIBED on top of envelope as "Tender for: Supply, testing and commissioning of HRMS and Triple Quadrupole with accessories at National Institute of Plant Genome Research, Aruna Asaf Ali Marg, New Delhi 110067.

ENVELOPE NO.- 1 i.e. Technical bid

The sealed envelopes shall contain separately the Earnest money deposit, all technical details along with commercial terms and conditions.

ENVELOPE NO.- 2 i.e. Price bid

This sealed envelopes shall contain only Financial bid of the tender as per the items/specifications given in Annexure-I. This envelope shall be opened only after the EMD contained in envelope No.1 is found in order and technically qualified as per the requirements of NIPGR. The date of opening of Price Bid shall be intimated later on.

The sealed cover-containing envelope 1 & 2 shall be opened on the prescribed date and time in the presence of tenderers or their authorized representative.

3. TENDERERS TO STUDY ENTIRE TENDER DOCUMENT CAREFULLY:

Submission of a tender by a tenderer implies that he has read all the stipulations contained in this tender document and has acquainted himself of the nature, scope and specifications of the items to be followed.

4. TENDERER TO SUBMIT THE ENTIRE TENDER DOCUMENT:

The tenderer shall submit all documents issued to him for the purpose of this tender after duly filling the same in all respects. Tenders which are found to be vague or incomplete shall be rejected summarily.

5. TENDER SHALL BE WRITTEN IN ENGLISH LANGUAGE:

Every tender shall be written in English language. All information such as documents and drawings supplied by the tenderer will also be in the English language only. Drawings and designs shall be dimensioned according to the metric system of measurements. Tenders shall be forwarded under cover or a letter type written on the tenderer's letter-head and duly signed by the tenderer. Signatures must be in long hand, executed in ink by a duly authorized principal of the tendering firm. No oral, telegraphic

or telephonic tenders or subsequent modifications there-to shall be entertained; If a tender is submitted on behalf of the firm, then all the partners shall sign or may be signed by one in whose favour all the partners have given General Power Of Attorney. In case of tender submitted by a company, it shall be signed by one who has been authorized by the Board of Directors through a resolution. Copy of resolution and the authority letter in favour of the person signing must accompany the tender.

6. VALIDITY PERIOD OF OFFERS:

The rates quoted in the tender shall hold good for 180 days from the date of opening of the tender. The validity period shall be extendable with the mutual consent of both the parties. No tenderer can withdraw/or modify his tender or revoke the same within the said period of 180 days. If a tenderer on his own withdraws or revokes the tender or revises or alters or modifies the tender for any item or condition within a period of aforesaid 180 days his earnest money deposit shall stand forfeited.

7. TENDERER TO SIGN ALL PAGES:

The tenderer shall stamp and sign at the bottom right hand corner of every page of the tender documents in token of acceptance of tender conditions and for the purpose of identification.

8. ERASERES AND ALTERATIONS:

Tenders containing erasures and alterations of the tender documents are liable to be rejected unless these are authenticated by the person signing the Tender Documents.

9. TENDERER TO SATISFY HIMSELF OF SITE CONDITIONS:

Tenderers are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their tender regarding nature of the site conditions, the means of access of the site, the accommodation they may require and in general obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their tender in any manner. A tenderer shall be deemed to have full knowledge of the site, whether he inspects it or not and no compensation or otherwise of any charges incurred or to be incurred consequent on any misunderstanding or otherwise shall be admissible.

10. EARNEST MONEY:

The tender shall be accompanied by earnest money of ₹ 13.00 lakhs in the form of Demand Draft only drawn in favour of the Director, NIPGR payable at New Delhi. Earnest money of the unsuccessful bidder(s) shall be refunded after expiry of the validity period of the tenders/placement of Supply Order whichever is earlier. In case of the Successful tenderer the earnest money shall be adjusted against performance security.

11. TENDERER TO QUOTE BOTH IN FIGURES AND WORDS:

The bidder shall quote their rates for all the items both in figures as well as words given as per the attached format of Price bid. The amount of each item shall be worked out and the requisite total given. Special care shall be taken to write percentage in figures and words, and the amount in figures only in such a way that interpolation is not possible. The total amount shall be written both in figures and in words.

12. TENDER LIABLE TO REJECTION:

Tenders which do not fulfill all or any of the conditions laid down in this notice, or contain conditions not covered and / or not contemplated by the Conditions of tender document and/or expressly prohibited therein or stipulate additional/alternative conditions shall be liable to be rejected and his earnest money will be forfeited.

Tenders shall also be liable for rejection on any of the following grounds:-

i) Tenders submitted late
ii) Tenders containing remarks uncalled for.
iii) Conditional tenders
iv) Tenders not submitted on prescribed Performa.
v) Telegraphic tenders.
vi) Tender submitted without EMD.

13. CORRESPONDENCE:

Tenderers must mention their postal address and telephone number(s) of the Chief Executive/authorized agent or attorney in the tender. The tender submitted by the tenderer will be rejected if he or his agent cannot be contacted on the last known address or on the intimated telephone number(s) after reasonable search in which event earnest money may be forfeited by the NIPGR.

14. NIPGR NOT TO ASSIGN ANY REASON FOR REJECTION OF TENDER:

Director, NIPGR hold absolute discretion to accept or reject the lowest or any other tender without assigning any reason. No claim on this account shall be entertained.

15. AMENDMENT IN TENDER DOCUMENTS:

NIPGR reserves the right to revise or amend the Bid Documents upto the date prior to the date notified for opening of the tenders and also the right to postpone the date of submission and opening of tenders without assigning any reason, whatsoever.

NIPGR also reserves the right to change the quantities of the units while issuing the letter of award of work.

16. REFERENCE IN TENDER DOCUMENTS:

Director, NIPGR, shall be referred as "Owner" in all the documents of Tender documents/contract agreement.

17. SCIENTIST INCHARGE

Where ever the word “Scientist Incharge” occurs it shall mean the authorized Scientist appointed by the NIPGR for the superintendence of the execution of related works.

Tenderers Signature with Seal **Purchase cum Stores Officer**

GENERAL INFORMATION

1.	Accepting Authority	Director, NIPGR, New Delhi.
2.	Earnest Money	₹ 13.00 lakhs (Rs. Thirteen lakh only) to be furnished with the tender in the form of the Demand draft in favour of "Director, NIPGR" payable at New Delhi. (No interest is payable on this deposit)
3.	Security Deposit	The EMD submitted by successful tenderer shall be treated as part of performance security deposit.
4.	Performance Security	The successful tenderer shall be required to deposit an amount equal to 10% of the tender value of the contract as Performance Security after adjusting the Security Deposit within 10 days from the date of issue of award letter. Performance Security may be deposited in the form of Demand Draft or Bank Guarantee from State Bank of India or any Scheduled bank.
5.	Authority competent to grant extension of time	Director, NIPGR.
6.	Tools & Plants	To be arranged by Tenderer
7.	Authority competent to reduce the Compensation amount	Director, NIPGR
8.	Defect Liability/warranty period	**36 months from the date of installation and acceptance by the NIPGR**
9.	Authority Competent to Appoint Arbitrator	Director, NIPGR
10.	Release of Security Deposit	The Performance Security shall be released after completion of the defect liability period.

Tenderers Signature with Seal

Specific Conditions of Contract

Reg: Supply, Installation, Testing & Commissioning of HRMS and Triple Quadrupole with accessories at NIPGR Campus, New Delhi

1. **Scope of work**: The scope of work generally consist of providing of HRMS and Triple Quadrupole with accessories as described in the equipment specifications of the tender documents. The supplier shall carryout and complete the work under the contract in every respect in accordance with this tenders documents and under directions & to the entire satisfaction of the Scientist-In-Charge. If any item of the work to be executed is not covered under specification, the same shall be executed as decided by the Scientist-In-Charge.

   It is not the intent to specify completely herein all aspect of design and constructional features of equipment and details of work to be carried out, nevertheless, the equipment and work shall confirm in all respect to high standard of engineering, design and workmanship and shall be capable of performing in continuous commercial operation in a manner acceptable to the Scientist-In-Charge, who will interpret the meaning of the specifications and drawings and shall have the right to reject or accept any work or material, which in his assessment is not complete to meet the requirements of the specifications and or applicable code, and standards mentioned elsewhere in the specifications.

2. **Operation & Maintenance manuals**: Prior to completion of the work and handing over the HRMS and Triple Quadrupole with accessories, the supplier shall submit 3 sets of following details:

   i) Comprehensive operation instructions, preventive and routine maintenance schedules
   ii) Manufacturer's equipment catalogues and operating & maintenance instructions
   iii) Electrical control diagrams, piping scheme diagrams
   iii) List of recommended spare parts with spare part codes, specifications & source of procurements.

   Supplier to provide all for testing: The supplier shall provide and pay for all necessary tools, instruments gadgets and testing equipment required for conducting various tests. Any defects in material and / or in workmanship detected during initial testing shall be rectified by the supplier at his own cost. Initial testing shall be carried out in the presence of Scientist-In-Charge or his representative to his entire satisfaction. The installation shall be commissioned after approval by Scientist-In-Charge.

3. **Virtual completion**: On satisfactory completion of initial testing and commissioning, the installation shall be put to continuous running test for a period of 2 days for the purpose of taking over. Any defect in material and/ or in workmanship detected in the course of testing shall be rectified by the supplier at his own cost to the entire satisfaction of the Scientist-In-Charge. The test shall be repeated after removal of defects. After successful completion of above tests, the equipment shall be taken over.

4. **Guarantee & Defect liability period**: The equipment covered by this contract shall be guaranteed by the supplier against faulty material and workmanship for a period of 36 months from the date of virtual completion and taking over the installation. Any part found defective shall be replaced free of all costs by the supplier. The supplier shall guarantee that all equipment shall work satisfactorily and that the performance and efficiency of the equipment shall not be less than the specified values. If performance of equipment during guarantee period is not found satisfactory, the guarantee period will be extended till satisfactory performance is established for further period of reasonable time decided by NIPGR. The services of the supplier's personnel if requisitioned during the defect liability period shall be made available free of any cost to NIPGR. If the defects noticed during the guarantee period are not remedial within a reasonable time and / or some equipment or system as a whole remain out of order for a total period of one month (4 weeks) (Unless or otherwise extended) NIPGR shall have the right to remedy the defects at the supplier's risk & cost without prejudice to any other rights.

5. **Maintenance**: During the guarantee & defect liability, the supplier shall provide at no extra cost necessary material and personal to carry out the repairs & routine maintenance of equipment. The supplier shall attend to all problems experienced in the operation of the system within a reasonable time but not more than 48 Hrs. of receiving the complaint and take corrective action immediately.

6. **Training of Personnel at site**: In order to enable NIPGR's staff to get acquainted with the operation and maintenance of the Equipment, the supplier at no extra cost to NIPGR shall train the departmental personnel during the period of installation, testing, commission and prior to virtual completion and taking over by NIPGR.

7. **Storage of materials & safe custody**: Lockable storage space, if available shall be made available to the supplier by NIPGR. However, the supplier shall be responsible for watch & ward and safe custody of his equipment and installation till they are formally taken over by NIPGR. Non-availability of lockable storage space due to any reasons shall not relieve the supplier of his contractual obligations in any way.

8. **Completion period**: All work of installation, testing, commissioning and handing over of the HRMS and Triple Quadrupole with accessories in accordance with this contract shall be completed within the stipulated period or within the extended time as has been allowed by the Institute.

9. The supplier/manufacturer should ensure timely service and calibration of machine for successful installation and satisfactory operation.

Tenderers Signature with Seal

TERMS & CONDITIONS OF CONTRCT AGREEMENT

SECURITY DEPOSIT

1. The earnest money amounting of ₹ 13.00 lakhs will be treated as part of performance security deposit of the successful tenderer.

COMPENSATION CLAUSE

2. The time allowed for carrying out the work as entered in the tender shall be strictly observed by the Tenderer, and shall be reckoned from the day of the date on which the order to commence the work is given to the Tenderer. The Tenderer shall prepare and submit the details of delivery and installation for the execution of the said work within ten days of award of work for approval of the Scientist Incharge, NIPGR. The work on the contract shall be executed according to the approved schedule as aforesaid and shall throughout the stipulated period of the contract be proceeded with all due diligence (time being deemed to be the essence of the contract on the part of the Tenderer) **and the Tenderer shall pay as compensation an amount equal to one percent or such smaller amount as Scientist Incharge, NIPGR may decide on the value of work as per contract**, for every week that the work remains un-commenced or unfinished after the dates mutually agreed upon by the parties. Further to ensure good progress during the execution of the work, the Tenderer shall be bound in all cases in which the time allowed for any work exceeds one month to complete one fourth of the whole of the work before one fourth of the whole time allowed under the contract has elapsed, one half of work before one half of such time has elapsed and three fourth of the work before three fourth of such time has elapsed. In the event of the Tenderer failing to comply with this condition he shall be liable to pay as compensation an amount equal to one percent or such smaller amount as the Scientist Incharge, NIPGR, may decide of the value of balance work for everyday that the due quantity of work remains incomplete. Provided always that the entire amount of compensation to be paid under the provisions of this clause shall not exceed ten percent of the awarded cost of work as shown in the tender. The Director, NIPGR, on a representation from the Tenderer, is however, empowered to reduce the amount of compensation and his decision in writing shall be final.

TIME EXTENSION

3. If the Tenderer shall desire an extension of the time limit for completion of the work on the grounds of his having been unavoidably hindered in its execution or on any other ground he shall apply in writing to the Scientist Incharge, NIPGR within 10 days of the date of the hindrance on account of which he desires such extensions as aforesaid but before the expiry of time limit and the Scientist Incharge, if in his opinion(which shall be final) reasonable grounds as shown thereof ,authorized such extension of time if any, as may, in his opinion be necessary or proper.

COMPLETION

4. Without prejudice to the rights of Scientist Incharge under any clause hereinafter contained on completion of the work, the Tenderer shall be furnished with a certificate

by the Scientist Incharge or his representative of such completion, but no such certificate shall be given nor shall the work be considered to be complete until the Tenderer shall have removed from the premises on which the work has been executed, all surplus materials and rubbish, and cleaning off the dirt from all doors, walls, floors, or any other parts of buildings said to have been completed, and the measurements in the said certificate shall be binding and conclusive against the Tenderer, if the Tenderer shall fail to comply with the requirements of this clause as to the removal of scaffolding, surplus materials, and rubbish and cleaning off dirt on or before the date fixed for the completion of the work, Scientist Incharge, NIPGR may at the expense of the Tenderer have removed such scaffolding ,surplus materials and rubbish and dispose of the same as he thinks fit and clean off such dirt as aforesaid and the Tenderer shall forth with pay the amount of all expenses so incurred, and shall have no claim in respect of any such scaffolding or surplus materials as aforesaid except for any such sale proceeds actually realized by the sale thereof.

ARBITRATION

5. Except where otherwise provided in the contract all questions and disputes relating to the meaning of the specifications, designs , drawings and instructions here in before mentioned and as to the quality of workmanship or materials used on the work or as to any other question, claim , right, matter or thing whatsoever, in any arising out of or relating to the contract, designs, drawings, specifications, estimates, instructions, orders or these conditions or otherwise concerning the works, or the execution or failure to execute the same whether arising during the progress of the work or after the completion or abandonment thereof shall be referred to the sole arbitration of the person selected from out of a panel of names to be supplied upon a request in writing by party invoking the arbitration by the Director, NIPGR, at the time of the dispute. It will be no objection to any such appointment that the arbitrator so appointed was associated with the work and that he had to deal with the matters to which the contract relates and that in the course of his duties in association with the Scientist Incharge, NIPGR, he had expressed views on all or any of the matters in dispute or difference. The arbitrator to whom the matter is originally referred being unable to act for any reason, the Director shall appoint another person to act as arbitrator in accordance with the terms of the contract. Such person shall be entitled to proceed with the reference from the stage at which it was left by his predecessor. It is also a term of this contract that no person other than a person appointed by the Director as aforesaid shall act as arbitrator. In all cases where the amount of the claim in dispute is ₹ 50000/- (Rs. Fifty thousand only)or above, the arbitrator shall give reasons for the award. Subject as aforesaid the provisions of Arbitration and Cancellation Act 1996 or any statutory modifications or reenactment thereof and the rules framed there under and for the time being in force shall apply to the arbitration proceeding under this clause. It is also a term of the contract that while invoking arbitration the party invoking arbitration shall specify the dispute or disputes to be referred to arbitration under this clause together with the amount or amounts claimed in respect of each such dispute. It is also a term of the contract that if a party does not make any demand for arbitration in respect of any claim(s) in writing within 90 days of receiving the intimation from the Scientist Incharge that the bill is ready for payment, the claim if any, shall be deemed to have been waived and absolutely barred

and the owner shall be discharged and released of all liabilities under the contract in respect of these claims.

CARRYING OUT OF WORK

6. All the work shall be carried out strictly and in accordance with the specifications given in the tender to the total satisfaction of the Scientist Incharge. In the case of an item for which specification are not available in the said specifications relevant BIS specifications applicable as on the date of tenders shall be followed.

INSPECTION OF WORK

7. All work under or in course of execution or executed in pursuance of the contract shall at all times be open to the inspection and supervision of Scientist Incharge, NIPGR or his subordinate in-charge of the work and the Tenderer shall at all times, during the usual working hours and at all other times at which reasonable notice of the intention of the Scientist Incharge to visit the works shall have been given to the Tenderer, either himself be present to receive order and instructions or have a responsible agent duly accredited in writing present for that purpose. Orders given to the Tenderer's agent shall be considered to have the same force as if they had been given to the Tenderer himself.

INSURANCE

8. The following insurance cover is to be provided by the Tenderer in the joint names of the employer and the Tenderer for the period from the start date till completion of entire work.
   a) Cover against damage to other people's property caused by the
   b) Tenderer's acts or omission;
   c) Cover against death or injury caused by the Tenderer's acts or omission to:
      i) Anyone authorized to be on the site;
      ii) Third parties who are not on the site;

9. No Escalation in rates shall be paid.

10. The Tenderer shall provide all necessary superintendence during execution of the work and as along thereafter as may be necessary for proper fulfilling of the obligations under the contract.

11. The tenderer must visit the site at NIPGR campus, Aruna Asaf Ali Marg, New Delhi - 110067 before quoting the rates.

12. Canvassing whether directly or indirectly, in connection with tenders is strictly prohibited and the tenders submitted by the Tenderers who resort to canvassing will be liable to rejection.

13. The rates quoted for foreign equipments shall be CIF/CIP New Delhi.

14. The rates for Local equipments shall be inclusive of all taxes, octroi, cartage etc., and nothing extra will be paid.

15. No T&P will be issued by the department.

16. The final payment shall be made only after completion of the work subject to certification by Scientist –in- Charge.

17. The site of work is at NIPGR Campus, Aruna Asaf Ali Marg, New Delhi – 110067.

18. The **Technical specifications** of the equipments required are detailed at page **20 -23** of this Tender Document.

19. Installation, Testing & Commissioning of the supplied equipments will be done at our site by the bidder in the presence of Scientist-in-Charge of our Institute.

Tenderers Signature with Seal

SPECIAL TERMS AND CONDITIONS OF CONTRACT

1. TENDERER TO BE LIABLE FOR ALL TAXES ETC.

The rates specified in the tender shall be CIF/CIP New Delhi/ FOR NIPGR and inclusive of all taxes, duties and other charges etc., in respect of the contract and the rates shall be firm irrespective of any variation in the prevailing rates of taxes, levies, octroi, etc., and any fresh imposition of any of these by State/Central/Statuary bodies. The supplier shall indemnify the Director against levy of any taxes, etc., in regard to this contract and in the event of the Director being assessed for any of the said imports, Director shall have the right to recover the total amount so assessed from the supplier's dues and the supplier shall also be responsible for all costs or expenses that may be incurred by Director in connection with any proceedings or limitation in respect of the same.

2. FORCE MAJEURE:

The right of the Tenderer to proceed with the work shall not be terminated because of any delay in the completion of the work due to unforeseeable causes beyond the control and without the fault or negligence of the Tenderer, including not limited to acts of God, or of the public enemy, restraints of a sovereign state, firms, floods, unusually severe weather.

3. JURISDICTION:

Not with standing any other courts having jurisdiction to decide the questions forming subject matter of a suit any and all actions and proceedings arising out of or relative to this contract (including any arbitration in terms thereof) shall lie only in the court of competent Civil jurisdiction in this behalf at New Delhi., where this contract is to be signed on behalf of Director, NIPGR and only the said court shall have jurisdiction to try any such actions and/or proceedings to the exclusion of all other courts.

4. SCOPE OF WORK:

The scope of work is as per enclosed details. The Tenderer should note that during the preparation of detailed working drawings, according to which the Tenderer has to execute the work covered under this contract, may undergo changes. The scope drawings for the entire work are not enclosed, but only a few indicating the probable nature of construction are attached. The scope of work is thus not limited only to the details.

5. Scientist Incharge Role:

The Scientist Incharge shall carry out general supervision and direction of the work. He/she has authority to stop the work. Whenever he/she considering such stoppage necessary to ensure the proper execution of the work. He/she shall also have authority to inspect and reject all work and materials, which do not conform to the specifications and to direct the application of Tenderer's forces to any portion of the work, as in his/her judgment is required, and to order the said force increased or diminished and to decide questions which arise in the execution of the work.

The Scientist Incharge shall have the right to suspend the work or part thereof at any time and no claim whatsoever on this account shall be entertained. In case of any clarification the Tenderer may appeal to the Director, NIPGR whose decision shall be final and binding on the Tenderer. The above inspection shall, however, not relieve the Tenderer of his responsibilities in regards to defective materials or workmanship and the necessity for rectifying or replacing the same.

6. TENDERER'S RESPONSIBILITY FOR THE MANNER OF EXECUTION OF WORKS

The Tenderer shall be solely responsible for the manner and the method of executing the work. The work shall be subject to the approval of Scientist Incharge from time to time for purposes of determination of the question whether the work is executed by the Tenderer in accordance with the contract.

7. SUBMISSION OF BILLS:

Tenderer is to submit the bills in triplicate along with delivery challans to the Scientist Incharge for works executed by him. Payment will be released on completion of entire work subject to certification by the Scientist Incharge.

8. ACTION AND COMPENSATION PAYABLE IN CASE OF BAD WORK:

If it shall appear to Scientist Incharge, NIPGR or his representatives, that any work has been executed with unsound, imperfect or unskillful workmanship or with materials of any inferior description or that any materials or articles provided by him for the execution of the work are unsound or of a quality inferior to the contracted for, or otherwise not in accordance with the contract specifications the Tenderer shall on demand in writing from the Scientist Incharge specifying the work materials, articles complained or not with-standing that the same have been inadvertently passed, certified and paid for, forthwith rectify or remove and reconstruct the work so specified in whole or in part as the case may require, or as the case, remove the materials or articles so specified and provide other and suitable materials or articles so specified at his own cost and in the event of his failing to do so within a period to be specified by the Scientist Incharge in his demand aforesaid, then the Tenderer shall be liable to pay compensation at the rate of one percent on the amount of the estimate for every day not exceeding ten days while his failure to do so that continue and in the case of any such failure Scientist Incharge, NIPGR may rectify or remove, and re-execute the work or remove and replace with other materials or articles complained of, as the case may be at risk and expenses in all respects of the Tenderer.

9. It shall always prevail, unless otherwise specifically stated, that the entire provisions of Tender document been opened upon and accepted for compliance by the Tenderer without any reservation.

10. Exemption of Customs Duty and Excise Duty

The NIPGR is exempted from payment of Custom Duty and Excise Duty for supply of equipments etc. vide Govt. of India Notification No. 51/96 dt. 23/07/1996. Since the Customs Duty/ Excise Duty and clearance charges will be borne by the Institute,

Bidders are requested to quote their rates accordingly. However it will be the responsibility of the Supplier to shift the equipment to site of work including opening of crates, transportation, loading and unloading. Nothing extra will be paid on any account.

11. Terms of payment

100% of the equipments value against irrevocable LC on receipt of order acknowledgement and Performance Guarantee/Security from Principles of supplier or their Indian Agent subject to fulfillment of condition at Sl.No. **4** under General Information.

12. Bidder should provide quotations directly enclosed from the manufacturer.

13. Bidder providing misleading or wrong information will be disqualified.

14. Bidder will support all the claims by product catalogue, public website of the manufacturer.

15. The Tender Compliance Sheet attached with the tender document should be properly filled with complete details.

Tenderers Signature with Seal

Technical Specifications

Item – HRMS and Triple Quadrupole with accessories (Quantity of Unit – 01 No.)

Specification for upgradation of mass spectrometry facility
State of the art mass spectrometry (MS) Facility with complete functional hardwares and softwares with subsequent updates ideally suited for both multifunctional qualitative (non-targeted) & quantitative (targeted) analyses of bio-molecules and small molecules for proteomics, metabolomics and lipidomics studies. The Facility should be capable of *de novo* sequencing, identifying and analyzing sequence tags, post-translational modifications, interacting proteins, metabolite etc. in addition to characterize, quantify biomarkers using label and label-free techniques and small molecules. To satisfy all the functional requirements, the facility should have the followings:

1- Separation Devices

A- 2D Nano LC System:

1. 2-D/dual gradient Nano LC system should have Nano flow and Micro flow capabilities in a single system.
2. The system must be equipped with binary gradient system with auto sampler and column oven for ultra-fast separations, and the Nano LC should be controlled through single point software of mass spectrometer.
3. The system should have operating pressure of 10,000 PSI or more.
4. System should have Flow rate range:
    a) Loading/Nanoproflow pump- 1-15 µl/min
    b) Nano gradient- 100-1000 nl/min or better
    c) Micro gradient- 1-10 µl/min or better.
5. Flowrate accuracy <1% or better and gradient volume <25 nl or better.
6. Auto sampler should be capable of accommodating minimum of two microtiter plates (96 or 384).
7. The system should have sample temperature control from 4°C – 40°C or better.
8. Auto sampler Injection volume- Programmable from 100 nl to 10 µl with 10 µl minimum loop or higher capacity loop.
9. Auto sampler with Injection volume reproducibility/precision: RSD <0.8%
10. The auto sampler should have Carry-over <0.05% or better.
11. System should be compatible with all commonly used chromatographic solvents.
12. Temperature controlled column compartment (approximately 10°C-50°C or better).

B - Fast and High Resolution LC system:

1. Pump
    a) Binary Gradient Pump.
    b) Operating flow rate range to be 0.001 to 5.000 mL/min or higher.
    c) Operating pressure should be 15000 psi or better.
    d) Flow rate accuracy ±1%
    e) System delay volume < 200 µl

2. Auto sampler:
    a) Injection volume: 0.1 to 50 µL or more
    b) Sample capacity of approximately 90-100 vials of 1.2/1.5 ml.
    c) Sample carryover < 0.005%
    d) Sample cooling range from 4°C – 40°C
3. Column Heater:
    a) Block heating column oven with temperature setting range from 5°C to 120°C

b) Column capacity of 2 pcs at 15 cm or more

C - Capillary Electrophoresis: For expanded coverage of PTMs: low molecular weight hydrophilic, high molecular weight hydrophobic peptides and glycopeptides.

1- A High Performance Capillary Electrophoresis Separation-ESI Module which combines the high efficiency and ultra-low flow of capillary electrophoresis (CE) with an integrated electrospray ionization source.
2- The nano flow of (<30 nL/min) should be possible to greatly improve assay sensitivity and reduce ion suppression while providing a broad range of analyte coverage that is orthogonal to LC-MS.
3- The High Performance CE Separation-ESI Module should include:

a) High resolution separation-ESI module with sample storage temperature control (4°C - 60°C) and capillary temperature control (15°C - 30°C).
b) Sample temperature is maintained from 4ºC to 60ºC.
c) Pressure sample injection capabilities up to 100 psi.
d) Height Adjustable Portable Lab Bench with Memory Settings.
e) System controller pre-loaded with software.
f) System should have modularity to upgrade as standalone CE system in near future.
g) Software includes the following features: Store original method with sample data, prevent overwriting of data, log instrument events, and software security, including different levels of operator access.

2. Mass Spectrometers

A. Discovery Proteomics (untargeted proteomics and interactomics) – High Resolution Mass Spectrometry (HRMS) Platform

1. Technology required: Quadrupole-TOF or Orbital Trap.
2. System should include source for Electro Spray ionization, nano ESI and atmospheric pressure chemical ionization. Electro Spray ionization sources/APCI source should be capable to handle flow rates from 100 nl/min to 2 ml/min flow (or more) without splitting for Nano LC / normal LC applications.
3. Resolution: at 200 m/z (approximately) should be 25000 for Q-TOF geometry or 500000 for mass spectrometer with Orbital trap technology.
4. The system should perform both data dependent and data independent analysis with high precision and efficiency.
5. High Speed is expected with very high response time and efficient fragmentation and ability to acquire about 100 MS/MS spectra per second in data dependent mode and 200 MS/MS spectra per second in data independent mode or better in the case of Q-TOF technology or 20 Hz or better in both data dependent and independent mode in case of Orbital Trap geometry.
6. The system should have linear dynamic range of 4 orders or more for qualitative and relative quantitative analysis (such as iTRAQ, TMT etc.) with the highest sensitivity, accuracy, precision, reproducibility and capable of data independent acquisition.
7. Quadrupole mass range should be minimum of 50-2000 amu or better.
8. Desolvation temperature should be equal to or greater than 550 ºC.
9. System should have the ETD and hcETD for Orbital trapping.
10. Mass accuracy is expected to be minimum of 3 ppm or better with external calibration and 1 ppm or better with internal calibration.
11. System should be capable to carry out intact mass analysis (with optimized Ion transmission) and top down proteomics with advanced technologies.
12. The system should have variable window acquisition mode for precursor ion selection.
13. The system must have provision to minimize collection of MS/MS on background ions during the flight/real time to increase identification of low level analytes in the presence of background noise.
14. System should have third dimensional separation (ion mobility) for separating isobaric compounds.

B. Targeted analysis (for verification and validation) –High End Triple Quad Mass Spectrometry Platform

1. Technology required: Triple Quadrupole or Triple Quadrupole with Linear Ion Trap
2. System should have dual ionization source (ESI & APCI) to cater broader range of applications.
3. ESI & APCI source must be able to handle broader ranging from 5 micro liter to 2 ml or better in both positive and negative mode.
4. The mass range of system should be minimum 10 -2000 amu or better
5. Mass stability 0.1 Da over 24 hours
6. Sensitivity: MRM ESI positive mode: in MRM mode at ~ 600 m/z 1 pg on column injection at unit mass resolution, the instrument must have S/N > 500,000:1 or better.
7. APCI source in positive ionization mode, for 10 pg of a standard compound on column the instrument must have S/N > 200,000:1 or better, where the noise is defined as the standard deviation of the baseline.
8. Scan speed should be of 15,000 amu per sec or better.
9. System should have polarity switching ~25 msec or better
10. Source Interface should maintain cleanliness of ion optics and capable of handling large batches of complex samples & cleaning of source should be done without venting the system.
11. The desolvation temperature should be equal to or more than 550 ºC.
12. A complete compatible infusion device to be quoted with the system.
13. System should have the provision for real time monitoring of various run parameter of instruments remotely.
14. Dynamic range 5 orders of magnitude or better.
15. Operating modes: Mass spectrometer should have the following scan options: Full scan, product ion scan, precursor ion scan, neutral loss scan, Multiple Reaction Monitoring (MRM), enhanced product ion spectra etc.
16. The system should have capability to perform MRM^3 for the quantitation of the challenging & complex molecules (in case of linear ion trap).
17. The system should have the capability to perform MS^3 for the structural elucidation of the compound (in case of linear ion trap).

3. <u>Softwares and Workstations</u>

1. Softwares should be able to seamlessly control all the frontends (LC and CE) mentioned above.
2. Original and licensed universal perpetual softwares (two in quantity each) and all interfacing hardware and software for instrument control, data acquisition and data processing must be supplied compatible to the LC-MS/MS and CE system.
3. Independent softwares for Proteomics, Glycomics/Glycan Metabolomics, Lipidomics applications like - label free quantitation, top-down sequencing, sequence variance/ sequence tags and PTM analysis etc. that can perform both qualitative and quantitative analyses with statistical tests should be provided.
4. Independent software for Proteomics, Metabolomics and Lipidomics should be quoted to perform relative & absolute quantification.
5. Software should be able to perform the statistical analysis like PCA plot, PCVG etc.
6. Software should have visual tools to help us to understand trends within dataset and allow us to exclude outliers in data, for example xenobiotic metabolites or contaminants, before further analysis.
7. Software with formula finder, automatic online database search, and fragmentation prediction tool to identify unknowns.
8. Protein identification & data base searching capability software for Proteomics application and library for metabolomics shall be quoted.
9. Each of the mass spectrometry system should be quoted along with independent acquisition computer.

10. Three independent high configuration off-line workstations should be quoted for off-line data processing dedicated for Proteomics, Metabolomics and Targeted Analysis Platform. Each processing PC should have the following minimum configuration:

Processor: Dual Intel® Xeon® Processor v4 series with min specification of 16C or better, 2.0GHz, 3.2GHz Turbo, 2400MHz, 35MB, 105W; Operating System: Windows 7 Professional (with Windows 10 Pro for Workstations Lic, 4 Cores Plus); RAM: Memory 128 GB(16x8GB) upgradable to 1 TB 2400MHz DDR4 RDIMM EC or higher; Hard Drive: 1TB or higher Solid State drive; Storage capacity: 16 TB or higher SATA storage drive; Graphics Card: NVIDIA® Quadro or higher configuration; Monitor: 27 inches; Microsoft Office: compatible version with the operating system. If the quoted computer is unable to process the total data from multiple samples, then a higher model should be provided free of cost during the warranty period.

Accessories & Warranty:

1. Suitable independent nitrogen generators for each mass spectrometer with noise free inbuilt compressor shall be quoted.
2. The purity of nitrogen gas should be 99.99% or better.
3. The system should come with C8, C18 (two each of 15 cm and 25 cm) and two HILLIC columns along-with two PM kits for each system per year during the warranty period.
4. Calibration kits for ESI positive, ESI negative, APCI positive, APCI negative for each system should be quoted.
5. The vendor must provide two precision ACs (two ton or more capacity), Printer, two online UPS each of 10 KV with minimum 1 hour backup along with the system should be provided.
6. Any other gas cylinder for the working of the system shall be provided minimum two numbers with all accessories, such as, regulator, gas purification panel unit, cylinder cage or bracket etc. should be supplied and commissioned during warranty period. The gas lining panel work should be done by the supplier for the connection of instrument.
7. Three and five years warranty for complete system including third party items should be quoted.
8. CMC for additional 5 years post warranty should be optionally quoted year wise.
9. Only Principal/Manufacturer should quote.
10. All specification must be supported by the official brochures from the company.
11. Instruments must be attended within 48 hr in case of any breakdown. The uptime for the facility should be 95% per year or more. Vendor should assure the availability of the spares for next 10 years from the date of installation.
12. Two preventive maintenances for the complete platform should be performed every year during the warranty period.
13. Vendor must have good service and application support in India to support the Institute as and when required.
14. Only those bids/offers with the complete specifications mentioned above will be considered.
15. Since mass spectrometers are very sensitive equipment and requires regular servicing and support for smooth functioning of the facility, user's feedback as deemed by competent authority may be taken. Based on the user's feedback the competent authority reserves the right to reject the bid submitted.
16. For arriving of a lowest evaluated bid either three or five year warranty will be considered and the competent authority reserves the right to take the final decision.

TECHNICAL BID

NAME OF WORK: Supply, Installation, Testing & Commissioning of HRMS and Triple Quadrupole with accessories at NIPGR Campus, New Delhi

Tender No. 8/I/NIPGR/S&P/2017-18

Sl. No.	Description	Qty Req.	Rate per Unit	Rate in INR, FOR Institute	Rate in Foreign currency, CIF / CIP New Delhi
01	State of the art mass spectrometry (MS) Facility with complete functional hardwares and softwares with subsequent updates ideally suited for both multifunctional qualitative (non-targeted) & quantitative (targeted) analyses of bio-molecules and small molecules for proteomics, metabolomics and lipidomics studies. The Facility should be capable of *de novo* sequencing, identifying and analyzing sequence tags, post-translational modifications, interacting proteins, metabolite etc. in addition to characterize, quantify biomarkers using label and label-free techniques and small molecules. To satisfy all the functional requirements, the facility should have the followings: **1. <u>Separation Devices</u>** **A- 2D Nano LC System:** 1. 2-D/dual gradient Nano LC system should have Nano flow and Micro flow capabilities in a single system. 2. The system must be equipped with binary gradient system with auto sampler and column oven for ultra-fast separations, and the Nano LC should be controlled through single point software of mass spectrometer. 3. The system should have operating pressure of 10,000 PSI or more. 4. System should have Flow rate range: a) Loading/Nanoproflow pump- 1-15 µl/min b) Nano gradient- 100-1000 nl/min or better c) Micro gradient- 1-10 µl/min or better. 5. Flowrate accuracy <1% or better and gradient volume <25 nl or better. 6. Auto sampler should be capable of accommodating minimum of two microtiter plates (96 or 384). 7. The system should have sample temperature control from 4°C – 40°C or better. 8. Auto sampler Injection volume- Programmable from 100 nl to 10 µl with 10 µl minimum loop or higher capacity loop. 9. Auto sampler with Injection volume reproducibility/precision: RSD <0.8% 10. The auto sampler should have Carry-over <0.05% or better.	01	**Rates not to be quoted**		

	11. System should be compatible with all commonly used chromatographic solvents. **12.** Temperature controlled column compartment (approximately 10°C-50°C or better). **B - Fast and High Resolution LC system:** 1. Pump a) Binary Gradient Pump. b) Operating flow rate range to be 0.001 to 5.000 mL/min or higher. c) Operating pressure should be 15000 psi or better. d) Flow rate accuracy ±1% e) System delay volume < 200 µl 2. Auto sampler: a) Injection volume: 0.1 to 50 µL or more b) Sample capacity of approximately 90-100 vials of 1.2/1.5 ml. c) Sample carryover < 0.005% d) Sample cooling range from 4°C – 40°C 3. Column Heater: a) Block heating column oven with temperature setting range from 5°C to 120°C b) Column capacity of 2 pcs at 15 cm or more **C - Capillary Electrophoresis:** For expanded coverage of PTMs: low molecular weight hydrophilic, high molecular weight hydrophobic peptides and glycopeptides. 1. A High Performance Capillary Electrophoresis Separation-ESI Module which combines the high efficiency and ultra-low flow of capillary electrophoresis (CE) with an integrated electrospray ionization source. 2. The nano flow of (<30 nL/min) should be possible to greatly improve assay sensitivity and reduce ion suppression while providing a broad range of analyte coverage that is orthogonal to LC-MS. 3. The High Performance CE Separation-ESI Module should include: a) High resolution separation-ESI module with sample storage temperature control (4°C - 60°C) and capillary temperature control (15°C - 30°C). b) Sample temperature is maintained from 4ºC to 60ºC. c) Pressure sample injection capabilities up to 100 psi. d) Height Adjustable Portable Lab Bench with Memory Settings. e) System controller pre-loaded with software. f) System should have modularity to upgrade as standalone CE system in near future. g) Software includes the following features: Store original method with sample data, prevent overwriting of data, log instrument events, and software security, including different levels of operator access.		

	2. <u>Mass Spectrometers</u> **A.Discovery Proteomics (untargeted proteomics and interactomics) – High Resolution Mass Spectrometry (HRMS) Platform** 1. Technology required: Quadrupole-TOF or Orbital Trap. 2. System should include source for Electro Spray ionization, nano ESI and atmospheric pressure chemical ionization. Electro Spray ionization sources/APCI source should be capable to handle flow rates from 100 nl/min to 2 ml/min flow (or more) without splitting for Nano LC / normal LC applications. 3. Resolution: at 200 m/z (approximately) should be 25000 for Q-TOF geometry or 500000 for mass spectrometer with Orbital trap technology. 4. The system should perform both data dependent and data independent analysis with high precision and efficiency. 5. High Speed is expected with very high response time and efficient fragmentation and ability to acquire about 100 MS/MS spectra per second in data dependent mode and 200 MS/MS spectra per second in data independent mode or better in the case of Q-TOF technology or 20 Hz or better in both data dependent and independent mode in case of Orbital Trap geometry. 6. The system should have linear dynamic range of 4 orders or more for qualitative and relative quantitative analysis (such as iTRAQ, TMT etc.) with the highest sensitivity, accuracy, precision, reproducibility and capable of data independent acquisition. 7. Quadrupole mass range should be minimum of 50-2000 amu or better. 8. Desolvation temperature should be equal to or greater than 550 ºC. 9. System should have the ETD and hcETD for Orbital trapping. 10. Mass accuracy is expected to be minimum of 3 ppm or better with external calibration and 1 ppm or better with internal calibration. 11. System should be capable to carry out intact mass analysis (with optimized Ion transmission) and top down proteomics with advanced technologies. 12. The system should have variable window acquisition mode for precursor ion selection. 13. The system must have provision to minimize collection of MS/MS on background ions during the flight/real time to increase identification of low level analytes in the presence of background noise. 14. System should have third dimensional separation (ion mobility) for separating isobaric compounds. **B.Targeted analysis (for verification and validation) – High End Triple Quad Mass Spectrometry Platform** 1. Technology required: Triple Quadrupole or Triple Quadrupole with Linear Ion Trap 2. System should have dual ionization source (ESI & APCI) to cater broader range of applications. 3. ESI & APCI source must be able to handle broader ranging from 5 micro liter to 2 ml or better in both positive and negative mode.		

	4. The mass range of system should be minimum 10 -2000 amu or better 5. Mass stability 0.1 Da over 24 hours 6. Sensitivity: MRM ESI positive mode: in MRM mode at ~ 600 m/z 1 pg on column injection at unit mass resolution, the instrument must have S/N > 500,000:1 or better. 7. APCI source in positive ionization mode, for 10 pg of a standard compound on column the instrument must have S/N > 200,000:1 or better, where the noise is defined as the standard deviation of the baseline. 8. Scan speed should be of 15,000 amu per sec or better. 9. System should have polarity switching ~25 msec or better 10. Source Interface should maintain cleanliness of ion optics and capable of handling large batches of complex samples & cleaning of source should be done without venting the system. 11. The desolvation temperature should be equal to or more than 550 ºC. ~~12.~~ complete compatible infusion device to be quoted with the system. 13. System should have the provision for real time monitoring of various run parameter of instruments remotely. 14. Dynamic range 5 orders of magnitude or better. 15. Operating modes: Mass spectrometer should have the following scan options: Full scan, product ion scan, precursor ion scan, neutral loss scan, Multiple Reaction Monitoring (MRM), enhanced product ion spectra etc. 16. The system should have capability to perform MRM^3 for the quantitation of the challenging & complex molecules (in case of linear ion trap). 17. The system should have the capability to perform MS^3 for the structural elucidation of the compound (in case of linear ion trap). **3. <u>Softwares and Workstations</u>** 1. Softwares should be able to seamlessly control all the frontends (LC and CE) mentioned above. 2. Original and licensed universal perpetual softwares (two in quantity each) and all interfacing hardware and software for instrument control, data acquisition and data processing must be supplied compatible to the LC-MS/MS and CE system. 3. Independent softwares for Proteomics, Glycomics/Glycan Metabolomics, Lipidomics applications like - label free quantitation, top-down sequencing, sequence variance/ sequence tags and PTM analysis etc. that can perform both qualitative and quantitative analyses with statistical tests should be provided. 4. Independent software for Proteomics, Metabolomics and Lipidomics should be quoted to perform relative & absolute quantification. 5. Software should be able to perform the statistical analysis like PCA plot, PCVG etc. 6. Software should have visual tools to help us to understand trends within dataset and allow us to exclude outliers in data, for example xenobiotic metabolites or contaminants, before further analysis.		

	7. Software with formula finder, automatic online database search, and fragmentation prediction tool to identify unknowns. 8. Protein identification & data base searching capability software for Proteomics application and library for metabolomics shall be quoted. 9. Each of the mass spectrometry system should be quoted along with independent acquisition computer. 10. Three independent high configuration off-line workstations should be quoted for off-line data processing dedicated for Proteomics, Metabolomics and Targeted Analysis Platform. Each processing PC should have the following minimum configuration: Processor: Dual Intel® Xeon® Processor v4 series with min specification of 16C or better, 2.0GHz, 3.2GHz Turbo, 2400MHz, 35MB, 105W; Operating System: Windows 7 Professional (with Windows 10 Pro for Workstations Lic, 4 Cores Plus); RAM: Memory 128 GB(16x8GB) upgradable to 1 TB 2400MHz DDR4 RDIMM EC or higher; Hard Drive: 1TB or higher Solid State drive; Storage capacity: 16 TB or higher SATA storage drive; Graphics Card: NVIDIA® Quadro or higher configuration; Monitor: 27 inches; Microsoft Office: compatible version with the operating system. If the quoted computer is unable to process the total data from multiple samples, then a higher model should be provided free of cost during the warranty period.		

Name & Signature of Tenderers/
Company with Seal

PRICE BID

NAME OF WORK: Supply, Installation, Testing & Commissioning of HRMS and Triple Quadrupole with accessories at NIPGR Campus, New Delhi

Tender No. 8/I/NIPGR/S&P/2017-18

Sl. No.	Description	Qty Req.	Rate per Unit	Rate in INR, FOR Institute	Rate in Foreign currency, CIF / CIP New Delhi
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	g) Software includes the following features: Store original method with sample data, prevent overwriting of data, log instrument events, and software security, including different levels of operator access. **2. <u>Mass Spectrometers</u>** **A.Discovery Proteomics (untargeted proteomics and interactomics) – High Resolution Mass Spectrometry (HRMS) Platform** 1. Technology required: Quadrupole-TOF or Orbital Trap. 2. System should include source for Electro Spray ionization, nano ESI and atmospheric pressure chemical ionization. Electro Spray ionization sources/APCI source should be capable to handle flow rates from 100 nl/min to 2 ml/min flow (or more) without splitting for Nano LC / normal LC applications. 3. Resolution: at 200 m/z (approximately) should be 25000 for Q-TOF geometry or 500000 for mass spectrometer with Orbital trap technology. 4. The system should perform both data dependent and data independent analysis with high precision and efficiency. 5. High Speed is expected with very high response time and efficient fragmentation and ability to acquire about 100 MS/MS spectra per second in data dependent mode and 200 MS/MS spectra per second in data independent mode or better in the case of Q-TOF technology or 20 Hz or better in both data dependent and independent mode in case of Orbital Trap geometry. 6. The system should have linear dynamic range of 4 orders or more for qualitative and relative quantitative analysis (such as iTRAQ, TMT etc.) with the highest sensitivity, accuracy, precision, reproducibility and capable of data independent acquisition. 7. Quadrupole mass range should be minimum of 50-2000 amu or better. 8. Desolvation temperature should be equal to or greater than 550 ºC. 9. System should have the ETD and hcETD for Orbital trapping. 10. Mass accuracy is expected to be minimum of 3 ppm or better with external calibration and 1 ppm or better with internal calibration. 11. System should be capable to carry out intact mass analysis (with optimized Ion transmission) and top down proteomics with advanced technologies. 12. The system should have variable window acquisition mode for precursor ion selection. 13. The system must have provision to minimize collection of MS/MS on background ions during the flight/real time to increase identification of low level analytes in the presence of background noise. 14. System should have third dimensional separation (ion mobility) for separating isobaric compounds.				

	B.Targeted analysis (for verification and validation) –High End Triple Quad Mass Spectrometry Platform 1. Technology required: Triple Quadrupole or Triple Quadrupole with Linear Ion Trap 2. System should have dual ionization source (ESI & APCI) to cater broader range of applications. 3. ESI & APCI source must be able to handle broader ranging from 5 micro liter to 2 ml or better in both positive and negative mode. 4. The mass range of system should be minimum 10 -2000 amu or better 5. Mass stability 0.1 Da over 24 hours 6. Sensitivity: MRM ESI positive mode: in MRM mode at ~ 600 m/z 1 pg on column injection at unit mass resolution, the instrument must have S/N > 500,000:1 or better. 7. APCI source in positive ionization mode, for 10 pg of a standard compound on column the instrument must have S/N > 200,000:1 or better, where the noise is defined as the standard deviation of the baseline. 8. Scan speed should be of 15,000 amu per sec or better. 9. System should have polarity switching ~25 msec or better 10. Source Interface should maintain cleanliness of ion optics and capable of handling large batches of complex samples & cleaning of source should be done without venting the system. 11. The desolvation temperature should be equal to or more than 550 ºC. ~~12.~~ complete compatible infusion device to be quoted with the system. 13. System should have the provision for real time monitoring of various run parameter of instruments remotely. 14. Dynamic range 5 orders of magnitude or better. 15. Operating modes: Mass spectrometer should have the following scan options: Full scan, product ion scan, precursor ion scan, neutral loss scan, Multiple Reaction Monitoring (MRM), enhanced product ion spectra etc. 16. The system should have capability to perform MRM^3 for the quantitation of the challenging & complex molecules (in case of linear ion trap). 17. The system should have the capability to perform MS^3 for the structural elucidation of the compound (in case of linear ion trap). **3. <u>Softwares and Workstations</u>** 1. Softwares should be able to seamlessly control all the frontends (LC and CE) mentioned above. 2. Original and licensed universal perpetual softwares (two in quantity each) and all interfacing hardware and software for instrument control, data acquisition and data processing must be supplied compatible to the LC-MS/MS and CE system.				

	3. Independent softwares for Proteomics, Glycomics/Glycan Metabolomics, Lipidomics applications like - label free quantitation, top-down sequencing, sequence variance/ sequence tags and PTM analysis etc. that can perform both qualitative and quantitative analyses with statistical tests should be provided. 4. Independent software for Proteomics, Metabolomics and Lipidomics should be quoted to perform relative & absolute quantification. 5. Software should be able to perform the statistical analysis like PCA plot, PCVG etc. 6. Software should have visual tools to help us to understand trends within dataset and allow us to exclude outliers in data, for example xenobiotic metabolites or contaminants, before further analysis. 7. Software with formula finder, automatic online database search, and fragmentation prediction tool to identify unknowns. 8. Protein identification & data base searching capability software for Proteomics application and library for metabolomics shall be quoted. 9. Each of the mass spectrometry system should be quoted along with independent acquisition computer. 10. Three independent high configuration off-line workstations should be quoted for off-line data processing dedicated for Proteomics, Metabolomics and Targeted Analysis Platform. Each processing PC should have the following minimum configuration: Processor: Dual Intel® Xeon® Processor v4 series with min specification of 16C or better, 2.0GHz, 3.2GHz Turbo, 2400MHz, 35MB, 105W; Operating System: Windows 7 Professional (with Windows 10 Pro for Workstations Lic, 4 Cores Plus); RAM: Memory 128 GB(16x8GB) upgradable to 1 TB 2400MHz DDR4 RDIMM EC or higher; Hard Drive: 1TB or higher Solid State drive; Storage capacity: 16 TB or higher SATA storage drive; Graphics Card: NVIDIA® Quadro or higher configuration; Monitor: 27 inches; Microsoft Office: compatible version with the operating system. If the quoted computer is unable to process the total data from multiple samples, then a higher model should be provided free of cost during the warranty period.				

Name & Signature of Tenderers/
Company with Seal

Advanced Mass Spectrometry Facility

State of the art mass spectrometry (MS) Facility with complete functional hardwares and softwares with subsequent updates ideally suited for both multifunctional qualitative (non-targeted) & quantitative (targeted) analyses of bio-molecules and small molecules for proteomics, metabolomics and lipidomics studies. The Facility should be capable of *de novo* sequencing, identifying and analyzing sequence tags, post-translational modifications, interacting proteins, metabolite etc. in addition to characterize, quantify biomarkers using label and label-free techniques and small molecules. To satisfy all the functional requirements, the facility should have the followings:

Sl. No.	Tender Specification	Quoted model name	Compliance with figures/features/remarks as applicable	Item no. on specification and brochure sheet/manufacturer website
1.	**Separation Devices**			
A-	**2D Nano LC System:**			
1.	2-D/dual gradient Nano LC system should have Nano flow and Micro flow capabilities in a single system.		Nano Flow: Yes/No Micro Flow: Yes/No	
2.	The system must be equipped with binary gradient system with auto sampler and column oven for ultra fast separations and Nano LC should be controlled through single point software of mass spectrometer.		Yes/No	
3.	The system should have operating pressure of 10,000 PSI or more.		Pressure_____	
4.	System should have Flow rate range: a) Loading/Nanoproflow pump- 1-15 µl/min. b) Nano gradient- 100-1000 nl/min or better. c) Micro gradient- 1-10 µl/min or better.		Loading//Nanoproflow pump- ____ µl/min Nano gradient- _____ nl/min Micro gradient- ___ µl/min.	
5.	Flowrate accuracy <1% or better and gradient volume <25 nl or better.		Flowrate accuracy_____% Gradient volume _____ nl	
6.	Auto sampler should be capable of accommodating two microtiter plates (96 or 384).		Microtiter plates types:_____	
7.	The system should have sample temperature control from 4°C – 40°C or better.		Temperature range _____ °C	

8.	Auto sampler with Injection volume- Programmable from 100 nl to 10 µl with 10 µl minimum loop or higher capacity loop.		Injection volume- Programmable from ____ nl to ____µl with ____ µl loop.	
9.	Autosampler with Injection volume reproducibility/precision: RSD <0.8%.		Autosampler with Injection volume reproducibility/precision: RSD <_____%	
10.	The autosampler should have Carry-over <0.05% or better.		Sample Carry-over <_____%	
11.	System should be compatible with all commonly used chromatographic solvents.		Yes/No	
12.	Temperature controlled column compartment (approximately 10°C -50 °C or better).		Column compartment temperature _____ to ____ °C	
B -	**Fast and High Resolution LC system**			
1.	Pump a) Binary Gradient Pump. b) Operating flow rate range to be 0.001 to 5.000 mL/min or higher. c) Operating pressure should be 15000 psi or better. d) Flow rate accuracy ±1%. e) System delay volume < 200□l.		Yes/No Operating flow rate: _____ to ____ mL/min Operating pressure: _____ psi Flow rate accuracy: ±_____% System delay volume: < ____ □l	
2.	Auto sampler: a) Injection volume: 0.1 to 50 µL or more. b) Sample capacity of approximately 90-100 vials of 1.2/1.5 ml. c) Sample carryover < 0.005%. d) Sample cooling range from 4 °C – 40 °C.		Injection volume: ____ to _____ µL or more Sample capacity: _____ vials of _____ ml. Sample carryover: < ____% Sample cooling range: _____ to _____ °C	
3.	Column Heater: a) Block heating column oven with temperature setting range from 5°C to 120°C. b) Column capacity of 2 pcs at 15 cm or more.		Temperature range: __°C to ___°C Column capacity: ___ pcs at ____ cm	
C-	**Capillary Electrophoresis:** For expanded coverage of PTMs: low molecular weight hydrophilic, high molecular weight hydrophobic peptides and glycopeptides.			
1.	A High Performance Capillary Electrophoresis		Yes/No	

	Separation-ESI Module which combines the high efficiency and ultra-low flow of capillary electrophoresis (CE) with an integrated electrospray ionization source.			
2.	The nanoflow of (<30 nL/min) should be possible to greatly improve assay sensitivity and reduce ion suppression while providing a broad range of analyte coverage that is orthogonal to LC-MS.		Yes/No	
3.	The High Performance CE Separation-ESI Module should include: a) High resolution separation-ESI module with sample storage temperature control (4°C - 60°C) and capillary temperature control (15°C - 30°C). b) Sample temperature is maintained from 4ºC to 60ºC. c) Pressure sample injection capabilities up to 100 psi. d) Height Adjustable Portable Lab Bench with Memory Settings. e) System controller pre-loaded with software f) System should have modularity to upgrade as standalone CE system in near future. g) Software includes the following features: Store original method with sample data, prevent overwriting of data, log instrument events, and software security, including different levels of operator access.		Sample storage temperature control range: _____ Capillary temperature control range: _____ Sample temperature range: _____ Pressure range: _____ psi Inbuilt pump: Yes/No Lab Bench: Yes/No Modular system: Yes/No Software features: Yes/No	
2.	**<u>Mass Spectrometers</u>**			
(A)	**For Discovery Proteomics (untargeted proteomics and interactomics) – High Resolution Mass Spectrometry (HRMS) Platform**			
1.	Technology required: Quadrupole-TOF or Orbital Trap.		Mention technology:	
2.	System should include source for Electro Spray		Yes/No	

	ionization, nano ESI and atmospheric pressure chemical ionization. Electro Spray ionization sources/APCI source should be capable to handle flow rates from 100 nl/min to 2 ml/min flow (or more) without splitting for Nano LC / normal LC applications.			
3.	Resolution: at 200 m/z (approximately) should be 25000 for Q-TOF geometry or 500000 for mass spectrometer with Orbital trap technology.		At: ____ m/z ____ for Q-TOF geometry or ____ m/z ____ for orbital trap technology	
4.	The system should perform both data dependent and data independent analysis with high precision and efficiency.		Yes/No	
5.	High Speed is expected with very high response time and efficient fragmentation and ability to acquire about 100 MS/MS spectra per second in data dependent mode and 200 MS/MS spectra per second in data independent mode or better in the case of Q-TOF technology or 20 Hz or better in both data dependent and independent mode in case of Orbital Trap geometry.		<u>In data dependent mode:</u> Speed for Q-TOF Technology: _____ MS/MS spectra per second Speed for Orbital Trap geometry:_____ Hz <u>In data independent mode:</u> Speed for Q-TOF Technology: _____ MS/MS spectra per second Speed for Orbital Trap geometry:_____ Hz	
6.	The system should have linear dynamic range of 4 orders or more for qualitative and relative quantitative analysis (such as iTRAQ, TMT etc.) with the highest sensitivity, accuracy, precision, reproducibility and capable of data independent acquisition.		Yes/No	
7.	Quadrupole mass range should be minimum of 50-2000 amu or better.		Quadrupole mass range: ____ to ____ amu	
8.	Desolvation temperature should be equal to or greater than 550 ºC.		Desolvation temperature: ____ °C	
9.	System should have the ETD and hcETD for Orbital trapping.		Yes/No	

10.	Mass accuracy is expected to be minimum of 3 ppm or better with external calibration and 1 ppm or better with internal calibration.		Mass accuracy with external calibration: ____ ppm Mass accuracy with internal calibration: ____ ppm	
11.	System should be capable to carry out intact mass analysis (with optimized Ion transmission) and top down proteomics with advanced technologies.		Yes/No	
12.	The system should have variable window acquisition mode for precursor ion selection.		Yes/No	
13.	The system must have provision to minimize collection of MS/MS on background ions during the flight/ real time to increase identification of low level analytes in the presence of background noise.		Yes/No	
14.	System should have third dimensional separation (ion mobility) for separating isobaric compounds.		Yes/No	
(B)	**Targeted analysis (for verification and validation) –High End Triple Quad Mass Spectrometry Platform**			
1.	Technology required: Triple Quadrupole or Triple Quadrupole with Linear Ion Trap.		Mention technology:	
2.	System should have dual ionization source (ESI & APCI) to cater broader range of applications.		Yes/No	
3.	ESI & APCI source must be able to handle broader ranging from 5 micro liter to 2 ml or better in both positive and negative mode.		Yes/No	
4.	The mass range of system should be minimum 10 - 2000 amu or better.		Mass Range: ____ to ____ amu	
5.	Mass stability 0.1 Da over 24 hours.			
6.	Sensitivity: MRM ESI positive mode: in MRM mode at ~ 600 m/z 1 pg on column injection at unit mass resolution, the instrument must have S/N > 500,000:1 or better.		MRM ESI Positive mode: ____ m/z ____ pg, S/N > _____:_____	
7.	APCI source in positive ionization mode, for 10 pg of a standard compound on column the instrument must have S/N > 200,000:1 or better, where the		APCI source in positive ionization mode:___ pg on column, S/N > _____:____	

	noise is defined as the standard deviation of the baseline.			
8.	Scan speed should be of 15,000 amu per sec or better.		Scan speed: _____ amu per sec	
9.	System should have polarity switching ~25 msec or better.		Polarity switching: ___ msec	
10.	Source Interface should maintain cleanliness of ion optics and capable of handling large batches of complex samples & cleaning of source should be done without venting the system.		Yes/No	
11.	The desolvation temperature should be equal to or more than 550 ºC.		Desolvation temperature: ____ °C	
12.	A complete compatible infusion device to be quoted with the system.		Yes/No	
13.	System should have the provision for real time monitoring of various run parameter of instruments remotely.		Yes/No	
14.	Dynamic range 5 orders of magnitude or better.		Dynamic range: ____ orders of magnitude	
15.	Operating modes: Mass spectrometer should have the following scan options: Full scan, product ion scan, precursor ion scan, neutral loss scan, Multiple Reaction Monitoring (MRM), enhanced product ion spectra etc.		Yes/No	
16.	The system should have capability to perform MRM^3 for the quantitation of the challenging & complex molecules (in case of linear ion trap).		Yes/No	
17.	The system should have the capability to perform MS^3 for the structural elucidation of the compound (in case of linear ion trap).		Yes/No	
3.	**Softwares and Workstations**			
1.	Softwares should be able to seamlessly control all the frontends (LC and CE) mentioned above.		Yes/No	
2.	Original and licensed universal perpetual softwares (two in quantity each) and all interfacing hardware and software for instrument control, data		Yes/No	

	acquisition and data processing must be supplied compatible to the LC-MS/MS and CE system.			
3.	Independent softwares for Proteomics, Glycomics/Glycan Metabolomics, Lipidomics applications like - label free quantitation, top-down sequencing, sequence variance/ sequence tags and PTM analysis etc. that can perform both qualitative and quantitative analyses with statistical tests should be provided.		Yes/No	
4.	Independent software for Proteomics, Metabolomics and Lipidomics should be quoted to perform relative & absolute quantification.		Yes/No	
5.	Software should be able to perform the statistical analysis like PCA plot, PCVG etc.		Yes/No	
6.	Software should have visual tools to help us to understand trends within dataset and allow us to exclude outliers in data, for example xenobiotic metabolites or contaminants, before further analysis.		Yes/No	
7.	Software with formula finder, automatic online database search, and fragmentation prediction tool to identify unknowns.		Yes/No	
8.	Protein identification & data base searching capability software for Proteomics application and library for metabolomics shall be quoted.		Yes/No	
9.	Each of the mass spectrometry system should be quoted along with independent acquisition computer.		Yes/No	
10.	Three independent high configuration off-line workstations should be quoted for off-line data processing dedicated for Proteomics, Metabolomics and Targeted Analysis Platform. Each processing PC should have the following minimum configuration: Processor: Dual Intel® Xeon® Processor v4 series		Yes/No Processor _____	

	with min specification of 16C or better, 2.0GHz, 3.2GHz Turbo, 2400MHz, 35MB, 105W; Operating System: Windows 7 Professional (with Windows 10 Pro for Workstations Lic, 4 Cores Plus); RAM: Memory 128 GB(16x8GB) upgradable to 1 TB 2400MHz DDR4 RDIMM EC or higher; Hard Drive: 1TB or higher Solid State drive; Storage capacity: 16 TB or higher SATA storage drive; Graphics Card: NVIDIA® Quadro or higher configuration; Monitor: 27 inches; Microsoft Office: compatible version with the operating system. If the quoted computer is unable to process the total data from multiple samples, then a higher model should be provided free of cost during the warranty period.		RAM _____ Operating system _____ HDD_____ Storage capacity _____ Graphics card _____ Monitor _____	
	Accessories & warranty			
1.	Suitable independent nitrogen generators for each mass spectrometer with noise free inbuilt compressor shall be quoted.		Yes/No	
2.	The purity of nitrogen gas should be 99.99% or better.		Yes/No	
3.	The system should come with C8, C18 (two each of 15 and 25 cm) and two HILLIC columns along-with two PM kits for each system per year during the warranty period.		Yes/No	
4.	Calibration kits for ESI positive, ESI negative, APCI positive, APCI negative for each system should be quoted.		Yes/No	
5.	The vendor must provide two precision ACs (two ton or more capacity), printer, two online UPS each of 10 KV with minimum 1 hour backup along with the system should be provided.		Yes/No	
6.	Any other gas cylinder for the working of the system shall be provided minimum two numbers with all accessories, such as, regulator, gas		Specify gases and number of cylinders:	

	purification panel unit, cylinder cage or bracket etc. should be supplied and commissioned during warranty period. The gas lining panel work should be done by the supplier for the connection of instrument.			
7.	Three and five years warranty for complete system including third party items should be quoted.		Yes/No	
8.	CMC for additional 5 years post warranty should be optionally quoted year wise.		Yes/No	
9.	Only Principle/Manufacturer should quote.		Yes/No	
10.	All specification must be supported by the official brochures from the company.		Yes/No	
11.	Instruments must be attended within 48 hr in case of any breakdown. The uptime for the facility should be 95% per year or more. Vendor should assure the availability of the spares for next 10 years from the date of installation.		Declaration	
12.	Two preventive maintenances for the complete platform should be performed every year during the warranty period.		Provide acceptance letter	
13.	Vendor must have good service and application support in India to support the Institute as and when required.		Specify service support in India	