

**RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:**

**Bid Receiving - PWGSC / Réception des
soumissions - TPSGC**
11 Laurier St./ 11 rue, Laurier
Place du Portage, Phase III
Core 0B2 / Noyau 0B2
Gatineau, Québec K1A 0S5
Bid Fax: (819) 997-9776

**REQUEST FOR PROPOSAL
DEMANDE DE PROPOSITION**

**Proposal To: Public Works and Government
Services Canada**

We hereby offer to sell to Her Majesty the Queen in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the goods, services, and construction listed herein and on any attached sheets at the price(s) set out therefor.

**Proposition aux: Travaux Publics et Services
Gouvernementaux Canada**

Nous offrons par la présente de vendre à Sa Majesté la Reine du chef du Canada, aux conditions énoncées ou incluses par référence dans la présente et aux annexes ci-jointes, les biens, services et construction énumérés ici sur toute feuille ci-annexée, au(x) prix indiqué(s).

Comments - Commentaires

Title - Sujet UHPLC Mass Spectrometer	
Solicitation No. - N° de l'invitation 01E86-150369/A	Date 2015-01-13
Client Reference No. - N° de référence du client 01E86-150369	
GETS Reference No. - N° de référence de SEAG PW-\$\$PV-941-66530	
File No. - N° de dossier pv941.01E86-150369	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2015-02-23	Time Zone Fuseau horaire Eastern Standard Time EST
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Martins, Christina	Buyer Id - Id de l'acheteur pv941
Telephone No. - N° de téléphone (819) 956-6911 ()	FAX No. - N° de FAX (819) 956-3814
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: Department of Agriculture and Agri-Food Attn: Dr. Barbara Blackwell Neatby Bldg 4th Floor 960 Carling Ave. Ottawa, Ontario K1A 0C6 Canada	

Instructions: See Herein

Instructions: Voir aux présentes

Vendor/Firm Name and Address

**Raison sociale et adresse du
fournisseur/de l'entrepreneur**

Issuing Office - Bureau de distribution

Scientific, Medical and Photographic Division / Division de
l'équipement scientifique, des produits photographiques et
pharmaceutiques
11 Laurier St./ 11 rue, Laurier
6B1, Place du Portage
Gatineau, Québec K1A 0S5

Delivery Required - Livraison exigée See Herein	Delivery Offered - Livraison proposée
Vendor/Firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur	
Telephone No. - N° de téléphone Facsimile No. - N° de télécopieur	
Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)	
Signature	Date



Item Article	Description	Dest. Code Dest.	Inv. Code Fact.	Qty Qté	U. of I. U. de D.	Unit Price/Prix unitaire FOB/FAM Destination Plant/Usine	Delivery Req. Livraison Req.	Del. Offered Liv. offerte
1	LIQUID CHROMATOGRAPHY MASS SPECTRO METER SYSTEM LIQUID CHROMATOGRAPHY MASS SPECTROMETER SYSTEM in accordance with the Requirement listed in Annex "A." Shipping, installation, training, manuals and software updates included.	01E86	01E86	1	LOT	\$XXXXXXXXXXXXX	See Herein	

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LIQUID CHROMATOGRAPHY MASS SPECTROMETER SYSTEM

PART 1 - GENERAL INFORMATION

1.1 Requirement

The requirement is Detailed under the "Line Item Detail" and herein.

1.2 Debriefings

Bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within 15 working days of receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

PART 2 - BIDDER INSTRUCTIONS

2.1 Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the Standard Acquisition Clauses and Conditions Manual (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

Bidders who submit a bid agree to be bound by the instructions, clauses and conditions of the bid solicitation and accept the clauses and conditions of the resulting contract.

The 2003(2014-09-25) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

Subsection 5.4 of 2003, Standard Instructions - Goods or Services - Competitive Requirements, is amended as follows:

Delete: sixty (60) days
Insert: ninety (90) days

2.1.1 SACC Manual Clauses

B1000T

Condition of Material

2014-06-26

2.2 Submission of Bids

Bids must be submitted only to Public Works and Government Services Canada (PWGSC) Bid Receiving Unit by the date, time and place indicated on page 1 of the bid solicitation.

2.3 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than ten (10) calendar days before the bid closing date. Enquiries received after that time may not be answered.

Bidders should reference as accurately as possible the numbered item of the bid solicitation to which the enquiry relates. Care should be taken by bidders to explain each question in sufficient detail in order to enable Canada to provide an accurate answer. Technical enquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as "proprietary" will be treated as such except where Canada determines that the enquiry is not of a proprietary nature. Canada may edit the question(s) or may request that the Bidder do so, so that the proprietary nature of the question(s) is eliminated, and the enquiry can be answered to all bidders. Enquiries not submitted in a form that can be distributed to all bidders may not be answered by Canada.

2.4 Applicable Laws

Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Ontario, Canada.

Bidders may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their bid, by deleting the name of the Canadian province or territory specified and inserting the name of the Canadian province or territory of their choice. If no change is made, it acknowledges that the applicable laws specified are acceptable to the bidders.

PART 3 - BID PREPARATION INSTRUCTIONS

3.1 Bid Preparation Instructions

Canada requests that bidders provide their bid in separately bound sections as follows:

Section I: Technical Bid (Three (3) hard copies)
Section II: Financial Bid (One (1) hard copy)
Section III: Certifications (One (1) hard copy)

If there is a discrepancy between the wording of the soft copy and the hard copy, the wording of the hard copy will have priority over the wording of the soft copy.

Prices must appear in the financial bid only. No prices must be indicated in any other section of the bid.

Canada requests that bidders follow the format instructions described below in the preparation of their bid:

- (a) use 8.5 x 11 inch (216 mm x 279 mm) paper;
- (b) use a numbering system that corresponds to the bid solicitation.

In April 2006, Canada issued a policy directing federal departments and agencies to take the necessary steps to incorporate environmental considerations into the procurement process Policy on Green Procurement.

(<http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html>). To assist Canada in reaching its objectives, bidders should:

- 1) use 8.5 x 11 inch (216 mm x 279 mm) paper containing fibre certified as originating from a sustainably-managed forest and containing minimum 30% recycled content; and
- 2) use an environmentally-preferable format including black and white printing instead of colour printing, printing double sided/duplex, using staples or clips instead of cerlox, duotangs or binders.

Section I: Technical Bid

In their technical bid, bidders should explain and demonstrate how they propose to meet the requirements and how they will carry out the Work.

3.1.1 Manuals

One (1) complete and current set of end-user documentation and technical reference manuals from the Original Equipment Manufacturer must be supplied in English.

3.1.2 Installation

On-site installation and post-install familiarization must be provided and be carried out by a qualified service technician.

Installation will be carried out within fifteen (15) calendar days of delivery and be completed on or before March 31, 2015.

Installation must be provided from a single vendor and manufacturer.

Inspection and acceptance will be done at the destination to the satisfaction of the Designated User or an authorized representative.

The spectrometer must be fully operational to the satisfaction of the AAFC Centre Project Authority.

3.1.3 Training (BIDDER TO COMPLETE)

A minimum of three (3) days of on-site operator and basic maintenance training must be provided for up to four (4) users. All costs associated with the on-site training must be included in the price.

On-site familiarization will be completed within _____ calendar days of installation. Provide complete details of training e.g. duration, scope, etc.,

3.1.4 Service (BIDDER TO COMPLETE)

Purchase of the Liquid Chromatography Mass Spectrometer System must include: technical support; technical phone support; support via the Internet; and support via a fax-back document system for a minimum of one (1) year.

Response for service must be within 24 hours or less.

Service must be provided for UPLC and MS systems from the same and unique manufacturer.

Also, provide the following with your bid (for information purposes only):

- a) Location of available service facilities (after sales service and repair). List the service facilities closest to the destination.

- b) Locations of available replacement parts from consumables to major components.

- c) Response time re: service calls, and escalation schedule, i.e. (how many days with no resolution to a problem until a more experienced person is called in, and from which location).

- d) List the frequency of routine maintenance visits provided by a qualified service technician during the warranty period, if applicable and included in the price.

3.1.5 Software Updates

The Bidder must provide all software updates and new releases to the purchaser for a period of one (1) year following the acceptance, at no additional cost.

Note: The word "updates" means all enhancements, extensions or other modifications to the software. The word "releases" means enhancements or modifications to the software or new modules or supplementary modules that function in conjunction with the software, that represent the next generation of software, and which the Contractor has decided to make available to its customers usually for an additional charge.

3.1.6 Product(s) Offered (BIDDER TO COMPLETE)

The Bidder must indicate the make and model number of the products offered (identify specific components which make up the system):

Name of Manufacturer: _____

Model/Part Number: _____

Literature attached: Yes (____) No (____)

3.1.7 Point of Manufacture/Shipping (BIDDER TO COMPLETE)

The Bidder must state the point of manufacture/shipping of goods or where service is to be performed:

Location: _____

Postal Code: _____

3.1.8 Contacts

Bidders are requested to provide the following: Information pertaining to Article 5.4 Contractor Representatives under Part 6, Resulting Contract Clauses.

Section II: Financial Bid

The Bidder must quote a firm lot price all inclusive of supply, installation, training, software updates and manuals, DDP (Ottawa, Ontario) Incoterms 2000, for the goods identified in Line Item 1, the Goods and Services Tax (GST) and/or the Harmonized Sales Tax (HST) extra, as applicable. Freight charges to destination and all applicable Customs duties and Excise taxes must be included.

3.2 Exchange Rate Fluctuation

C3011T

Exchange Rate Fluctuation

2013-11-06

Section III: Certifications

Bidders must submit the certifications required under Part 5.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

4.1 Evaluation Procedures

- (a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical and financial evaluation criteria.
- (b) An evaluation team composed of representatives of Canada will evaluate the bids.

4.1.1 Technical Evaluation

All proposals submitted must be completed in full and provide all of the information requested in the Request for Proposal (RFP) package to enable a full and complete evaluation. If the requirement is not addressed in the bidder's proposal, the proposal will be considered incomplete or non-responsive and will be rejected. The onus is on the bidder to provide all the information necessary to ensure a complete and accurate assessment.

Factors for Evaluation

1. **PRICING BASIS (MANDATORY):** Prices must be firm, DDP Delivered Duty Paid.

2. **ABILITY TO MEET THE TECHNICAL REQUIREMENT (MANDATORY):**

- a) For Items Defined by Specifications:

supporting
to their

The bidder is required to cross reference with the exact location in the documentation the mandatory technical criteria contained herein supporting technical documentation.

- b) Provision of Supporting Technical Documentation:

Supporting technical documentation for the stores offered shall be provided with the bid at time of bid closing.

Technical brochures or technical data **MUST** be provided to verify compliancy to the technical mandatory specifications.

Included: YES _____

3. **COMPLIANCE WITH THE TERMS AND CONDITIONS OF THIS REQUEST FOR PROPOSAL (MANDATORY)**

4. **FOR CANADIAN SUPPLIERS ONLY:** Please note that the requirements of the Federal Contractors Program for Employment Equity may apply - see herein. (MANDATORY if applicable)

5. The equipment offered must be "off the shelf" in that it must be composed of standard equipment requiring no further research or development and

must be in current production and conform to the current issue of the
 applicable specification and/or part number of the Original Equipment
 Manufacturer. Equipment must be new or floor model, in that it must not include
 refurbished equipment and all equipment must be of current manufacture.

4.1.2 Financial Evaluation

The lowest evaluated price will be established using the following criteria:

- a) Prices will be evaluated in Canadian Funds including any applicable Taxes and Canadian Customs Duty (if applicable) and excluding the Goods and Services Tax (GST) or Harmonized Sales Tax (HST). For evaluation purposes, bids received in a foreign currency will be converted to Canadian funds using the appropriate rate of exchange using the rate quoted by the Bank of Canada as being in effect on date of bid closing.
- b) Prices will be evaluated on a DDP (Ottawa, Ontario)

4.2 Basis of Selection

A0069T

Basis of Selection

2007-05-25

PART 5 - CERTIFICATIONS

Bidders must provide the required certifications and associated information to be awarded a contract.

The certifications provided by bidders to Canada are subject to verification by Canada at all times. Canada will declare a bid non-responsive, or will declare a contractor in default in carrying out any of its obligations under the Contract, if any certification made by the Bidder is found to be untrue whether made knowingly or unknowingly, during the bid evaluation period or during the contract period.

The Contracting Authority will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply and to cooperate with any request or requirement imposed by the Contracting Authority may render the bid non-responsive or constitute a default under the Contract.

5.1 Certifications Precedent to Contract Award and Certifications Required with the Bid

5.1.1 Certifications Precedent to Contract Award

5.1.1.1 Integrity Provisions - Associated Information

By submitting a bid, the Bidder certifies that the Bidder and its Affiliates are in compliance with the provisions as stated in Section 01 Integrity Provisions - Bid of Standard Instructions 2003. The associated information required within the Integrity Provisions will assist Canada in confirming that the certifications are true.

5.1.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "[FCP Limited Eligibility to Bid](http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml)" list (http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml) available from [Employment and Social Development Canada \(ESDC\) - Labours website](#).

Canada will have the right to declare a bid non-responsive if the Bidder, or any member of the Bidder if the Bidder is a Joint Venture, appears on the "[FCP Limited Eligibility to Bid](#)" list at the time of contract award.

PART 6 - RESULTING CONTRACT CLAUSES

6.1 Security Requirement

There is no security requirement applicable to this Contract.

6.2 Requirement

The Contractor must provide the items detailed under the Line Item Detail.

6.2.1 Manuals

One (1) complete and current set of end-user documentation and technical reference manuals from the Original Equipment Manufacturer must be supplied in English.

6.2.2 Installation

On-site installation and post-install familiarization must be provided and be carried out by a single qualified vendor. Installation must be provided from a single vendor and manufacturer.

6.2.3 Training

A minimum of three (3) days of on-site operator and basic maintenance training must be provided for up to four (4) users.

6.2.4 Service

Purchase of the Liquid Chromatography Mass Spectrometer System must include: technical support; technical phone support; support via the Internet; and support via a fax-back document system for a minimum of one (1) year. Service must be provided from a single vendor and manufacturer.

6.3 Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the Standard Acquisition Clauses and Conditions Manual (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

6.3.1 General Conditions

2010A (2014-11-27), General Conditions - Goods (Medium Complexity), apply to and form part of the Contract.

6.3.2 Supplemental General Conditions

4003(2010-08-16) Supplemental General Conditions - Licensed Software, apply to and form part of the Contract.

4004(2013-04-25) Supplemental General Conditions - Maintenance and Support Services for Licensed Software, apply to and form part of the Contract.

6.4 Term of Contract

6.4.1 Delivery Date

All deliverables must be received on or before March 31, 2015.

6.5 Authorities

6.5.1 Contracting Authority

The Contracting Authority for the Contract is:

Christina Martins
Supply Specialist
Public Works and Government Services Canada
Acquisitions Branch
Commercial and Consumer Products Directorate
Place du Portage III, 6A2
11 Laurier St. Gatineau, Quebec
K1A 0S5
Telephone: (819) 956-6911
Facsimile: (819) 956-3814
Christina.Martins@tpsgc-pwgsc.gc.ca

The Contracting Authority is responsible for the management of the Contract and any changes to the Contract must be authorized in writing by the Contracting Authority. The Contractor must not perform work in excess of or outside the scope of the Contract based on verbal or written requests or instructions from anybody other than the Contracting Authority.

6.5.2 Technical Authority (TO BE COMPLETED AT TIME OF CONTRACT AWARD)

The Technical Authority for the Contract is:

Name: _____

Title: _____

Organization: _____

Address: _____

Telephone : _____

Facsimile: _____

E-mail address: _____

The Technical Authority is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Technical Authority, However the Technical Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

6.5.3 Procurement Authority (TO BE COMPLETED AT TIME OF CONTRACT AWARD)

The Procurement Authority for the Contract is:

Name: _____

Title: _____

Organization: _____

Address: _____

Telephone : _____

Facsimile: _____

E-mail address: _____

The Procurement Authority is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Procurement Authority, however the Procurement Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

6.5.4 Contractor's Representative (PLEASE FILL IN)

General Enquiries

Name: _____

Delivery Follow-up

Name: _____

Telephone No. _____ Telephone No. _____
 Facsimile No. _____ Facsimile No. _____
 E-mail address: _____ E-mail address: _____

6.6 Payment

6.6.1 Basis of Payment

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm lot price as specified in the contract for Line Item 1, DDP Delivered Duty Paid (Ottawa, Ontario) Incoterms 2000. Customs duties are included and Applicable Taxes extra, if applicable.

6.6.1.1 Limitation of Price

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

6.6.2 SACC Manual Clauses

H1000C

Single Payment

2008-05-12

6.7 Invoicing Instructions

- a) The Contractor must submit invoices in accordance with the section entitled "Invoice Submission" of the general conditions. Invoices cannot be submitted until all work identified in the invoice is Completed.

FOR PROMPT PAYMENTS, ENSURE THE CONTRACT NO./P.O. NUMBER APPEARS ON ALL DOCUMENTATION.

- b) Invoices must be distributed as follows:
- (a) The original and one (1) copy must be forwarded to the address shown on page 1 of the Contract for certification and payment. The Contract serial number: 01E86-150369 must appear on all invoices.
 - (b) One (1) copy must be forwarded to the Contracting Authority identified under the section entitled "Authorities" of the Contract.

6.8 Certifications

6.8.1 Compliance

The continuous compliance with the certifications provided by the Contractor in its bid and the ongoing co-operation in providing associated information are conditions of the Contract. Certifications are subject to verification by Canada during the entire period of the Contract. If the

Contractor does not comply with any certification, fails to provide the associated information, or if it is determined that any certification made by the Contractor in its bid is untrue, whether made knowingly or unknowingly, Canada has the right, pursuant to the default provision of the Contract, to terminate the Contract for default.

6.9 Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Ontario, Canada.

6.10 Priority of Documents

If there is a discrepancy between the wording of any documents that appear on the list, the wording of the document that first appears on the list has priority over the wording of any document that subsequently appears on the list.

- (a) the Articles of Agreement;
- (b) 2010A(2014-11-27) General Conditions - Goods (Medium Complexity);
- (c) 4003(2010-08-16) Supplemental General Conditions - Licensed Software, apply to and form part of the Contract.
- (d) 4004(2013-04-25) Supplemental General Conditions - Maintenance and Support Services for Licensed Software, apply to and form part of the Contract.
- (e) Annex A, Requirement; and
- (f) the Contractor's bid dated _____. (insert date of bid)

6.11 SACC Manual Clauses

B1501C	Electrical Equipment	2006-06-16
A9068C	Government Site Regulations	2010-01-11
A2000C	Foreign Nationals (Canadian Contractor)	2006-06-16
OR		
A2001C	Foreign Nationals (Foreign Contractor)	2006-06-16

6.12 Shipping Instructions - Delivery at Destination

1. Goods must be consigned to the destination specified in the Contract and delivered:

Delivered Duty Paid (DDP) (Ottawa, Ontario) Incoterms 2000 for shipments from a commercial contractor.

2. The Contractor will be responsible for all delivery charges, administration, costs and risk of transport and customs clearance, including the payment of customs duties and taxes.

Packaging and shipping must be in accordance with the industry standard for all items in order to ensure their safe arrival at destination. Packing slips must accompany shipment. The Contractor will be responsible for the safe delivery, installation obtaining acceptance of the unit. All items must remain the responsibility of the Contractor until delivered, inspected and authorized representative of Canada. associated with replacement of equipment damaged in transit to the destination

each
and

Costs

Solicitation No. - N° de l'invitation

01E86-150369/A

Amd. No. - N° de la modif.

Buyer ID - Id de l'acheteur

pv941

Client Ref. No. - N° de réf. du client

File No. - N° du dossier

CCC No./N° CCC - FMS No/ N° VME

01E86-150369

pv94101E86-150369

will be
the
the

borne by the Contractor and the equipment will not be considered "delivered" for purposes of satisfying the delivery time requirements as detailed above, unless equipment is undamaged and ready for acceptance testing.

ANNEX A
REQUIREMENT
LIQUID CHROMATOGRAPHY MASS SPECTROMETER SYSTEM

Vendors must cross reference the mandatory technical criteria in a concise format by using page, paragraph(s) & sub-paragraphs as applicable to their supporting technical documentation.

The LIQUID CHROMATOGRAPHY MASS SPECTROMETER SYSTEM **must** meet all of the following requirements:

General Performance Specifications

A. Ultra High Pressure Liquid Chromatography Component (UHPLC) with autosampler and column oven.

1. The UHPLC must deliver stable flow (typically 0.4 ml/min) to the MS via an RP-UHPLC column. (typically C18 beads of 1.8 μ m particle)

Reference in Contractors Proposal: _____

2. The pumps of the UHPLC must have an operation range of 300-600 bar (but capable of up to 1000 Bar)

Reference in Contractors Proposal: _____

3. The UHPLC must be able to inject sample batches (up to 200 samples in 1.2 ml vials, 2 μ l each) automatically from a temperature controlled (4 $^{\circ}$ C) autosampler.

Reference in Contractors Proposal: _____

4. The autosampler must pick up and inject a minimum volume of 1 μ l reproducibly from a 5 μ l loop.

Reference in Contractors Proposal: _____

5. The autosampler must have needle wash and seal wash.

Reference in Contractors Proposal: _____

6. The autosampler must maintain a sample temperature of 4 $^{\circ}$ C with a deviation of no more than ± 2 $^{\circ}$ C.

Reference in Contractors Proposal: _____

-
7. The autosampler must be fully programmable to handle overnight sample batches.

Reference in Contractors Proposal: _____

8. The pumps of the UHPLC must be able to deliver reliable and steady flow with a range of at least 0.1 to 8 ml/min.

Reference in Contractors Proposal: _____

9. The pumps of the UHPLC must be quaternary to facilitate the mixing of four mobile phases and perform accurate gradients from at least two mobile phases.

Reference in Contractors Proposal: _____

10. The pumps of the UHPLC must be able to maintain steady flow with column backpressures of 50 to 900 bar, with a maximum operating pressure of = 1,000 bar.

Reference in Contractors Proposal: _____

11. The UHPLC must be able to record and display column pressure in real time.

Reference in Contractors Proposal: _____

12. The UHPLC must be compatible with chromatography UHPLC columns from all major manufacturers.

Reference in Contractors Proposal: _____

13. The UHPLC must have degassing capability for all channels.

Reference in Contractors Proposal: _____

14. The UHPLC must include a built-in column oven with a temperature range of 5°C to 80°C to provide temperature control of the UHPLC column for improved resolution and equilibration times.

Reference in Contractors Proposal: _____

B. Mass Spectrometer:

1. The mass spectrometer must be of a hybrid type capable of analyzing small molecules (mass range 50-4000 daltons) in mixtures and/or in very complex matrices.

Reference in Contractors Proposal: _____

-
2. The mass spectrometer must have high mass accuracy (< 3 ppm) across the entire mass range, high resolution (> 45,000 FWHM) and fast scan speeds of at least 1 Hz during routine LC-MS analyses.

Reference in Contractors Proposal: _____

3. The mass spectrometer must have a linear dynamic range greater than 4 orders of magnitude to enable quantitation over a wide range of concentrations.

Reference in Contractors Proposal: _____

4. The mass spectrometer must have the ability to perform MSⁿ (for n>3 and higher) fragmentation or equivalent, while maintaining high mass accuracy.

Reference in Contractors Proposal: _____

5. The mass spectrometer must have 2 distinct collision cells, for complementary fragmentation patterns and to help with structure elucidation of unknowns.

Reference in Contractors Proposal: _____

6. The hybrid mass spectrometer must consist of two (2) mass spectrometers, which can acquire data either independent of the other, sequential with the other or in parallel with the other.

Reference in Contractors Proposal: _____

7. The spectrometer must be supplied with an ESI probe that is compatible with liquid flow rates of up to 1 ml/min.

Reference in Contractors Proposal: _____

8. The ESI probe must be able to perform in both positive and negative modes.

Reference in Contractors Proposal: _____

9. **Mass Accuracy:** The mass spectrometer must be capable of 1 ppm RMS mass accuracy under internal calibration conditions and 3 ppm RMS mass accuracy under external calibration.

Reference in Contractors Proposal: _____

10. **Mass Accuracy:** Method and ease of accurate mass calibration and control of calibration must be demonstrated.

Reference in Contractors Proposal: _____

11. **Mass Accuracy:** High mass accuracy must be obtained scan by scan without the need for scan averaging which reduces sensitivity.

Reference in Contractors Proposal: _____

12. **Resolution:** The mass spectrometer must have a minimum resolving power of 45,000 in full scan mode, with a maximum resolution of 100,000, to support alternate applications, e.g. DART. The mass spectrometer must demonstrate no significant loss of signal or sensitivity when going from low resolving power settings to maximum resolution.

Reference in Contractors Proposal: _____

13. **Fragmentation:** The mass spectrometer must be able to fragment in MS/MS and MSⁿ (for n>3) modes with a resolution of >45,000 in MS/MS and MSⁿ modes.

Reference in Contractors Proposal: _____

14. **Scan Speed** The mass spectrometer must be able to perform data-dependent acquisitions at a speed of at least 1 Hz while maintaining a minimum resolution of 45,000.

Reference in Contractors Proposal: _____

15. **Sensitivity:** The mass spectrometer must be able to detect in the sub-femtomol range.

Reference in Contractors Proposal: _____

16. **Dynamic Range:** The mass spectrometer must demonstrate a dynamic range of at least 4000:1 in a single scan guaranteeing specified mass accuracy.

Reference in Contractors Proposal: _____

17. **Mass Range:** The spectrometer must operate in the m/z range 50-4000 Da and must maintain mass accuracy across the full range, with precursor ion mass selection range reaching up to 2000 m/z.

Reference in Contractors Proposal: _____

18. The mass spectrometer must support optional interchangeable ionization sources or combination sources, e.g. APCI (soft ionization) and thermal desorption devices, e.g. DART, to extend the scope for analysis.

Reference in Contractors Proposal: _____

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19. The mass spectrometer must be able to perform rapid switchover between the ESI source and alternate sources (e.g. APCI, DART).

Reference in Contractors Proposal: _____

20. The mass spectrometer can be either a bench top or floor standing model.

Reference in Contractors Proposal: _____

C. Existing Technology:

1. The spectrometer must be in current use in the market place for a minimum of two (2) years.

Reference in Contractors Proposal: _____

2. Evidence of usage history must be provided.

Reference in Contractors Proposal: _____

D. Electrical Specifications and Certifications:

1. Power requirements must not exceed 240 V, 30A per circuit for the MS, 110V/15A for (each) the computer system and the UHPLC.

Reference in Contractors Proposal: _____

2. The spectrometer must be Canadian Standards Association (CSA or CSA International) approved.

Reference in Contractors Proposal: _____

3. The spectrometer must meet the criteria for the National Certification body for the Country of Manufacture) before being shipped to the Eastern Cereal and Oilseeds Research Centre, Ottawa.

Reference in Contractors Proposal: _____

E. Software Specifications:

1. The software must be compatible with PC operating on MS Windows.

Reference in Contractors Proposal: _____

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2. The software must completely control the system, i.e. both mass spectrometers must be controlled by the same software for instrument control and data acquisition.

Reference in Contractors Proposal: _____

3. The software must be able to control functions for both instruments (UHPLC and MS)

Reference in Contractors Proposal: _____

4. The software must be able to collect data in the form of mass spectra in a format that is compatible with commercial MS data bases.

Reference in Contractors Proposal: _____

5. The software must include automated deconvolution and reporting software packages installed on the instrument computer for the analysis of intact molecules and calculation of exact molecular weights.

Reference in Contractors Proposal: _____

F. Quality Assurance:

1. The manufacturer of the system must be ISO 9000 compliant.

Reference in Contractors Proposal: _____

2. The Contractor must be ISO 9000 compliant.

Reference in Contractors Proposal: _____

3. The Contractor must be an Authorized Reseller for the system they are offering to the Crown.

Reference in Contractors Proposal: _____