

No.Qlty/3(4)/2007.

Dated 14th February, 2007

QUOTATION NOTICE.

Sub:- Procurement of LC-MS/MS System – reg.

Sealed quotations are invited superscribed “Quotation for LC-MS/MS System“ conforming to the detailed specifications and directions given in annexure -1.

Offer addressed to the Director (Res), Indian Cardamom Research Institute, Spices Board, Sugandha Bhavan, Palarivattom, Cochin – 25, should reach this office before 3 p.m. on 02.03.2007. Quotations should provide the detailed specifications of the item on offer with the name of the brand, terms and conditions of supply, service, delivery period etc. Clarification regarding the specification, if any, may be had from the Senior Scientist (QC), Quality Evaluation Laboratory, Spices Board, Cochin – 25.

Quotations will be opened in the presence of representatives of the bidders, if any present, at 3 pm on 02.03.2007.

The Spices Board reserves the right to accept or reject the quotation without assigning any reason.

Spices Board

(Ministry of Commerce and Industry, Govt. of India)
Sugandha Bhavan, N.H.By-pass, P.B.No.2277
Palarivattom P.O, COCHIN – 682025
KERALA, INDIA.

Specifications for LC MS/MS System

Quotations are invited for an LC MS/MS System meeting the specifications given below. All the required information is to be provided along with the quotation.

A Bench Top LC MS/MS system ideally suitable for both quantitative and qualitative analysis, with the following technical features and specifications:		
No.	Technical Features	Specifications
1.	Mass Range	10 – 1800 amu or better
2.	Interface	<ul style="list-style-type: none"> a. Simple interface for maintaining cleanliness of ion optics and optimized ion declustering. b. Capable of handling large batches of complex samples in natural extracts and dirty matrices, over a long period of time, without significant performance degradation or need for maintenance.
3.	Vacuum system	Robust, high efficiency vacuum system with minimum maintenance and utility requirements.
4.	Quadrupoles	<ul style="list-style-type: none"> a. High quality material quadrupoles, capable of high standards of mass stability in varying lab temperature conditions. b. Pre-aligned prefilters for focussing of ions into the quadrupoles for high sensitivity and resolution. c. Techniques / devices in ion optics for minimizing ion loss will be desirable.
5.	Resolution	7000 or better
6.	Mass Transmission Efficiency	<ul style="list-style-type: none"> a. 100% transmission efficiency b. Must be substantiated with specific test.
7.	Mass Accuracy	±0.1amu (100ppm) or better over the entire mass range
8.	Sensitivity	<ul style="list-style-type: none"> a. Low detection limits and high sensitivity b. It should accommodate high flow rate c. Sensitivity of ESI in MRM mode on m/z ratio 609-195 on 5ul injection of pg/ul reserpine should give S/N ratio >4200:1 d. Control of maximum noise level
9.	Collision Cell	<ul style="list-style-type: none"> a. High pressure confined collision cell operation with drag-correction facility to allow use of high scan

		speeds without sacrificing sensitivity and eliminate cross-talk to enable multiple MRM transitions (500+) studies in the same run.
10.	Detector	<ul style="list-style-type: none"> a. The instrument should be capable of high energy fragmentation, and must ensure no low-mass cut-off in MS/MS spectra with out any mass loss. b. The instrument should have the latest technology detector with wide linear dynamic range.
11.	Ion Source	<ul style="list-style-type: none"> a. Pneumatically assisted Electrospray (ESI) with concentric gas flow nebulization to cover flow rates up to 400?l/min without split or heating and up to 3 ml/min with either split or heating. b. Orthogonal spray/vertical spray c. Atmospheric Pressure Chemical Ionization (APCI) d. Both the above ion sources should be easily interchangeable by the user. e. Ion sources should be capable of minimizing peak tailing and carryover in fast chromatography and Flow Injection Analysis. f. High ionization efficiency, reduced chemical noise and advanced gas dynamics to ensure low detection limits with high sensitivity
12.	Operating Modes	<ul style="list-style-type: none"> a. Precursor scan b. Product ion scan c. Neutral loss scan d. Multiple Reaction Monitoring e. Altering polarity between scans for any of the above modes f. Additionally, high sensitivity MS, Product Ion and MSⁿ scans are desirable. g. MRM triggered high sensitivity quantitative scans for simultaneous quantitation and identification and confirmation of molecules. h. Possibility to loop and perform dependant scans for any two or more of the above scans in a single run, with user-selectable criteria for both molecular weight and structural determination within a single run.
13.	Gas Generators	<ul style="list-style-type: none"> a. Suitable automatic, extremely low noise and vibration free gas generators capable of producing <u>all required gases, moisture free and with sufficient purity</u> for the operation of MS/MS

		<p>system should be quoted. Installation of the same to the LC-MS/MS system from the gas generator should be done by the agency (the tubing should be with SS only). Any spares and other accessories required for the gas supply systems for two years should be quoted.</p>
14.	Liquid Chromatograph	<p>a. A quaternary high-pressure gradient HPLC system, with high throughput Autosampler (1.5 – 2ml vials), column oven and vacuum degasser should be quoted. The following accessories should be included:</p> <ul style="list-style-type: none"> ○ A high sensitivity fluorescence detector and HPLC-specific software licence for standalone operation of the HPLC (without MS/MS) using the fluorescence detector. ○ Kobra Cell system (or equivalent) for post column derivatisation of Aflatoxins ○ Retention time locking facility should be available with the system or equivalent. ○ All accessories for connecting columns and guard columns
15.	Computer and Software and Latest model laser jet printer	<p>a. Pentium based Windows XP workstation, with at least 19-inch flat-panel monitor, with multitasking capabilities</p> <p>b. Latest laser jet printer should be quoted</p> <p>c. HPLC and MS/MS should be controlled through the same computer/software</p> <p>d. The software should have the following capabilities:</p> <ul style="list-style-type: none"> ○ Automated calibration and quantitative optimization ○ Automated MS to MS/MS and to MS/MS/MS switching during a single run with user selectable criteria ○ Perform alternating +/- scans in one run ○ Automated quantitation and reporting of acquired samples ○ Combine MRM survey scans with enhanced MS/MS and MS/MS/MS scans through Information Dependant Acquisition, to enable identification, confirmation and quantification of target compounds at a wide range of concentrations ○ Metabolite ID software ○ Latest software for method development and

		assistance for pesticides, food additives, adulterant dyes, mycotoxins etc.
16.	Other Accessories and Spares	<p>a. All other accessories required for making the LC MS/MS system operational should be quoted.</p> <p>b. Spares and accessories for the LC and MS/MS systems with itemized list, for a period of 2 years after warranty, should be quoted.</p> <p>c. Additionally, the following spares should be included:</p> <ul style="list-style-type: none"> ○ HPLC Autosampler needles ? 2 Nos. ○ HPLC Pump seals ? 4 Nos. ○ HPLC Pump Inlet and Outlet check valves ? 3 Nos. each ○ Solvent filters ? 15 Nos. ○ Line filters ? 2 Nos. ○ HPLC Columns [5cm ? 4.6mm ? 5 ?m C18] ? 10 Nos. ○ HPLC Columns [10cm ? 4.6mm ? 5 ?m C18] ? 5 Nos. ○ C18 Guard columns with holders ? 20 Nos. ○ Lamp for Fluorescence Detector ? 1 Nos. ○ Autosampler vials ? 200 Nos.
17.	Specification sheets	Detailed specification sheets for HPLC system, MS/MS system and the Gas Supply system with substantiation of technical claims should be provided along with the quotation.
18.	UPS system	Latest UPS system of 10 KVA with tubular batteries (with stands) and capable getting 4 hrs. back up with full load should be quoted -
19.	Compliance Statement	A compliance statement with this technical specification list should necessarily accompany the quotation, without which the quotation will be deemed incomplete.
20.	Warranty and service details	Complete warranty and service details of the MS/MS, HPLC, gas generators, computer etc should be provided.
21.	User's list	Complete user's list for the quoted system in India should be provided.