



ಭಾ.ಕೃ.ಅನು.ಪ - ಭಾರತೀಯ ತೋಟಗಾರಿಕಾ ಸಂಶೋಧನಾ ಸಂಸ್ಥೆ
ಹೆಸರಗಟ್ಟ ಕೆರೆ ಅಂಚೆ, ಬೆಂಗಳೂರು-560 089

भा.कृ.अनु.प.- भारतीय बागवानी अनुसंधान संस्थान
हेसरघट्टा लेक पोस्ट, बेंगलूरु - 560 089



ICAR-Indian Institute of Horticultural Research
Hesaraghatta Lake Post, Bengaluru - 560 089

Amendment to Cpp tender notification for import of LC/IC-ICP-MS

WITH ACCESSORIES - 2022-DARE-711987-1

F.NO.5-62/22-23/SP/IIHR

Date: 22.09.2022

Sl. No	Module	FOR	READAS
A	LC	<ul style="list-style-type: none"> Inert HPLC Pump with dual piston binary pump with completely inert and metal-free fluid path for lower detection limits and better accuracy. System should work in both isocratic and gradient mode Pump must have post-seal wash to avoid salt build-up behind the pump seal. Pump should support minimum of four solvents, low-pressure gradient valve for quaternary gradient analysis should be provided. Pump should have incorporated pulse dampener to ensure that pulsations are kept to a minimum. Integrated vacuum degassing (4 channel or more) to effectively remove/reduce ghost peaks. Operating pressure should be 5800 psi or better at 5 mL/min. Flow rate should be 0.01 to 5 mL/min or more with at least 0.01 ml increments. Flow accuracy should be $\pm 1\%$ or better, flow precision- 0.5% RSD or better. It should have leak sensors as standard and safe leak handling. System should work in the pH range of 2 to 12 The auto sampler tray should have capacity up to 100 vials (2 mL) or more The autosampler should be peltier based temperature-controlled system with a temperature range of 4-40°C with 1.0°C increments. The sample carryover should be less than 0.004%. Column compartment should have capacity for 2 columns or more Should include required integrated interface accessory to couple HPLC with ICP MS. 	<ul style="list-style-type: none"> Inert HPLC binary/quaternary pump with completely inert and metal-free fluid path for lower detection limits and better accuracy. System should work in both isocratic and gradient mode. Pump must have post-seal wash to avoid salt build-up behind the pump seal. Pump should have incorporated pulse dampener to ensure that pulsations are kept to a minimum. Vacuum degassing (4 channel or more) to effectively remove/reduce ghost peaks. Operating pressure should be 5000 psi or better at 5 mL/min. Flow rate should be 0.01 to 5 mL/min or more with at least 0.01 ml increments. Flow accuracy should be $\pm 1\%$ or better, flow precision- 0.5% RSD or better. It should have leak sensors as standard and safe leak handling. System should work in the pH range of 2 to 12. The auto sampler tray should have capacity 96 vials (2 mL) or more. The autosampler should be peltier based temperature-controlled system with a temperature range of from ambient to 40°C with 1.0°C increments. The sample carryover should be less than 0.01% or better. Column compartment should have capacity for 2 columns or more Should include required integrated interface accessory to couple HPLC with ICP MS.

	A IC	<ul style="list-style-type: none"> • Quaternary pump that can be operated on both isocratic and gradient mode and to support standard bore, microbore and capillary applications. All modules of IC system to be controlled by a single software. • Flow rate of 0.01 to 20 mL/min or better • Flow precision $\pm 0.1\%$ • Max operating pressure- 5000 psi or better • Capable of withstanding high backpressure with continuous reThe pump must have as an option a piston seal wash, which can be continuously operated when connected to rinse solution supply generation • All modules should be metal free • The auto sampler tray should have capacity up to 100 vials (2 mL) or more • The autosampler should be temperature-controlled with a temperature range of 4-40°C with 1.0°C increments. • The sample carryover should be less than 0.004%. • Column compartment should have capacity for 2 columns or more 	<ul style="list-style-type: none"> • Binary/Quaternary pump that can be operated on both isocratic and gradient mode. All modules of IC system to be controlled by single software. • Flow rate of 0.01 to 5 mL/min or better • Flow precision $\pm 0.1\%$ • Max operating pressure 5000 psi or better • Capable of withstanding high backpressure. The pump must have as an option a piston seal wash, which can be continuously operated when connected to rinse solution supply generation • All modules should be metal free • The auto sampler tray should have capacity up to 100 vials (2 mL) or more • The autosampler should be temperature-controlled with a temperature range from ambient to 40°C with 1.0°C increments. • The sample carryover should be less than 0.01% or better. • Column compartment should have capacity for 2 columns or more. <p>Should include required integrated interface accessory to couple IC with ICP MS.</p>
B)	ICP-MS	Should include required integrated interface	
1	Sample introduction system	d) The system should have capability/provision of at least three dedicated gas channels to use varied collision/ reactions gases like He, O ₂ , NH ₃ , etc for effective removal of interferences in challenging sample matrices	d) The system should have capability of at least two dedicated gas channels to use varied collision/ reactions gases like He, O ₂ , NH ₃ , etc for effective removal of interferences in challenging sample matrices
2	Ion Source and RF Plasma	d) Should have at least 04 mass flow controllers (MFC) for control plasma, auxiliary, carrier gas and makeup/dilution gas.	d) Should have at least 04 flow controllers (MFC and/or EFC as per requirement).
9	Fully automated microwave digestion system	Minimum power output of 1400 watts or more	Minimum power output of 1200 watts or more.
F	Warranty	One year warranty from the date of installation on main Instrument, Microwave Digester, Exhaust system, Chiller, and 4 years AMC on the same should be provided.	One year warranty from the date of installation on main Instrument, Microwave Digester, Exhaust system, Chiller, and 4 years additional AMC on the main instrument (LC or IC-ICP/MS) should be provided.
Sl.no. 7 annexu	Commercial Terms and conditions	SITC of equipment within 03 months from the date of purchase order to ICAR- IIHR Hghatta	SITC of equipment within 02 months from the date of opening LC to ICAR- IIHR, Hghatta.

SR. ADMINISTRATIVE OFFICER