

उपकरण का नाम / Name of Equipment : **Preparative HPLC**

S.N.	Specifications	Qty.
1.	The specification should be available on the vendor's website. The system should be compatible with PDA and ELSD (Universal) detectors without changing any hardware and software in the future for fractions collection. All submitted technical documents' data should be available on the vendor's public website. All the quoted components should have a good part number. This should analyze and purify pharmaceuticals, chemical, and biological products' with preparative capabilities.	01
2.	A Solvent delivery system (Pump) <ul style="list-style-type: none"> ➤ Pump System: Binary gradient High Pressure gradient pump, ➤ The solvent delivery system should support flow rate from 0.5 ml/min to 150 ml/min or better with an increment of 0.1ml/min. ➤ Number of solvents up-to four for loading of sample through pump ➤ The retention time variability should be < 0.5 % RSD or better ➤ The gradient delay volume should be minimized (< 0.5 ml) ➤ The system should be able to operate to pressure of at least 5000 psi up to 100 ml/min 	
3.	Sample Manager - Auto sampler cum Fraction Collector <ul style="list-style-type: none"> ➤ Single open bed injector and fraction collector with prep injector, flexible sample injection and collection tubes ➤ Multipurpose fraction collector for sample preparation like dilutions, additions, mixing, auto sample injection and fraction collection, re-injection unattended. ➤ System should have ability to re-inject the sample of collected fractions from same bed ➤ Prep Injection loop of 25000 µl or more ➤ The automated fraction collector should have separate fraction collection and injection pathways to eliminate contamination of fraction from the injection process ➤ Fraction collector should be able to be controlled remotely by the provided software Standard 2 ml/4 ml vials (5 tray) Test tubes of 4 ml, 20 ml and 50 ml with racks or better with complete set of each volume 	
4.	<u>Detector</u> <p>A. PDA Detector</p> <ul style="list-style-type: none"> ✓ The detector should have wavelength range of 200-800 nm or more with wavelength accuracy of ± 1 nm or better ✓ Wavelength Repeatability ± 0.5 nm ✓ Data acquisition: upto 80 Hz or better ✓ Flow cell: Preparative <p>B. ELSD Detector</p> <ul style="list-style-type: none"> ✓ Suitable ELSD (Universal Detector) Detector and Gas Cylinder with necessary arrangement. 	

	✓ Control through Software / Keyboard of the Detector.	
5.	<u>Columns</u> <ul style="list-style-type: none"> ➤ 2 prep 30mm X 250mm, 5µ C-18 or equivalent, ➤ 2 prep 20mm X 250mm, 5µ C-18 or equivalent and ➤ 1 analytical with 4.6mm X 250, 5µ C-18 columns ➤ 1 Beh Amide Column or its equivalent for analytical purpose 	
6.	<u>Software</u> <ul style="list-style-type: none"> ➤ It should provide the real time view of the chromatographic and collected fractions. ➤ It should allow for the use of mixed triggers which can Boolean logic like AND, NOT, BOTH and XOR. ➤ For the co eluting peak the software should automatically programme a narrow gradient depending on the retention time to separate the co-eluting peaks and collects the compounds till the desired purity. ➤ The software should allow collection of fractions based upon UV/PDA, ELSD, and threshold or time segment. 	
7.	<u>Collected Fraction Purity Check</u> An Analytical HPLC with Quaternary Pump, Four Channel Degasser (Flow rate setting 0.001 to 10 ml), Pressure Up to 6000 psi or more, Auto sampler 180 Position at least, PDA Detector 190-900 nm range, RI Detector, & ELSD, Column Oven Analytical Software including GPC with PC need to be supplied along with above System for Purity check of Collected Fractions.	
8.	<u>Workstation and others</u> <ul style="list-style-type: none"> ➤ Suitable Branded WIFI-enabled computational workstation to support the whole instrument, including the LAN connection port. ➤ The workstation must be 13th generation or better with core i7 or better processor, 32-inch monitor with the latest configuration, 2 TB SSD + 2 TB HDD, 8GB graphics card or more and 64 GB RAM, 1 TB SSD external hard disk, original licensed Microsoft Windows-based or better configuration. ➤ It should have a Microsoft office original (license) along with an optical DVD drive DVD read/write along with USB ports also for hard disk connection to get raw. ➤ Suitable branded multifunction (print, copy, and scan) black and white LaserJet printer should be provided 	
9.	The software should be latest, original, authentic, and strictly compliance ready for GLP/ GMP and 21 CFR compliance in prep and analytical HPLC systems.	
10.	<u>UPS</u> UPS shall include 10 KVA On-Line UPS with inbuilt isolation transformer Single Phase with battery backup 120 min. The battery makes Branded with a battery rack and Battery interconnector cable. The vendor must quote relevant accessories which are required to make it functional. UPS installation, dedicated earthing as required for UPS and instrument.	
11.	<u>Other Requirements</u> <ul style="list-style-type: none"> ➤ PM Kit should be provided in warranty period ➤ The vendor should provide internal standards for calibrating instrument/instrument parts/ methods. 	

	<ul style="list-style-type: none"> ➤ Vendor should provide 5 liters (04 each) and 10 liters (04 each) solvents bottles for mobile phase reservoir. ➤ Syringes (3 different sizes in 10 no. each). ➤ Syringe filters (0.22 micron, Nylon- 10,000 no.) ➤ Detector Lamp (two no. each addition D2 and Tungsten Lamp) ➤ Flow cell –additional 1 each for preparative and analytical HPLC ➤ Pump Piston- 4 each for prep and analytical HPLC ➤ All filters -10 each for complete system ➤ Pump Head al seals- 15 no. for both ➤ Check Valve- 10 no. for both ➤ Tubing- additional 1 set for complete system 	
12.	Necessary solvents for primary standardization (HPLC grade-Acetonitrile (5L), HPLC grade- Methanol (5L), and LC-MS grade Water (5L) for the fulfilment of the application training should be provided.	
13.	Supplier should quote 2 waste collection drums of 50 liter capacity to store waste solvents.	
14.	<p>Vendors should submit quotes based on the specifications provided. Central University of Punjab will supply only an empty room equipped with electrical connections and air conditioning. Vendors should arrange a suitable table with granite top and an ergonomic chair (01) to ensure the successful operation of the equipment. Table should have storage drawer with lock and key below the tables.</p> <p>All submitted technical documents/specification sheets should be available on the vendor's public website.</p>	
15.	<ul style="list-style-type: none"> ➤ All the quoted components should have a proper part number. ➤ The instrument will be relocated within the warranty period. The supplier is responsible for uninstallation, transportation, and reinstallation at no additional cost. An undertaking will be obtained from the selected supplier before issuing the purchase order. ➤ Instrument should be able to connect mass detector as future upgradation. 	
16.	All essential accessories/parts required for operation of equipment should be provided	
17.	Confirmation for AMC & CMC services for next FIVE years after expiry of warranty period of 05 years at rates not more than @3% & 5% respectively of contract value (exclusive of GST) to be provided along with technical bid.	
18.	Vendor to provide service guarantee: should the system require service during the warranty period, vendor must guarantee turn-around-time within 72 hours	
19.	IQ, OQ and PQ of the system should be provided.	
20.	Vendor to provide a copy of Site-Preparation checklist	
21.	All required kits, tubings, joints, tool kit etc. essential for running & maintenance of the system shall be supplied along with the system	

22.	The vendor must be reputed one having experience of at least 10 Years for supply of HPLC & Preparative LC systems. The supplier must have a technical and application support team based in India.	
23.	The supplier must provide proper demonstration and training after successful installation. The supplier must provide onsite application training for five members for 1-week post-installation.	
24.	Dedicated onsite Technical support well versed with method development, maintenance, sample preparation, analysis and troubleshooting, must be provided for a period of 03 years.	
25.	Comprehensive warranty includes equipment, accessories, spares parts, electronic boards, software, workstation, UPS and Batteries etc.	
Comprehensive Warranty		05