File Ref. No. PUR/IICT/DMS/1068/23-24 CPPP Tender ID: 2023\_CSIR\_174523\_1 Dt: 23-11-2023

Minutes of Pre-Bid Conference (PBC) held on 23-11-2023 for proposed procurement of "Supply Installation and commissioning of GEL PERMEATION CHROMATOGRAPHY SIZE EXCLUSION" —

# <u>Chairpersons</u> / <u>Members of the Technical Sub Committee (TSC) present during PBC including domain expertspresent during PBC:-</u>

- 1. Dr N Lingaiah Chairman
- 2. Dr. Jithender Reddy, Member
- 3. Dr Sreepariya Vedantam, Member
- 4. Shri D Venkateshwar Rao, Member
- 5. IO/PL Dr. P.ARUNA
- 6. Dr. Rohit K. Rana as Representative of IO

#### Representatives of the following firm attended the PBC:

1. M/s Camtek Labs, Hyderabad

#### The following points were discussed during the PBC:

#### Query raised by M/s. Camtek Labs, Hyderabad, and response of CSIR-IICT:

Query-1: Column compartment-temperature control

We request u to add the Thermostated column compartment with dual, independent Peltier element.

Response: Amended as "thermostat capable of heating and cooling"

Query-2: Compartment space –

We request u to add 4 or more columns of up to 300 mm length

Response: Amended

Query-3: RID-Detector Drift

We request u to amend - ±600x10- 6 RIU

Response: Representatives cancelled the query

Query-4: RID - Cell temperature range

We request u to amend - 5 °C above ambient to 55 °C

Response: Amended as 5°C above ambient to 50°C or more

Query-5: RID - Flow rate

We request u to amend - 5mL/Min

Response: Amended as  $\leq 0.5$ mL to  $\geq 5.0$ mL

Query-6: EISD - Flow rate

We request u to amend - 0.9 - 3.25 SLM

Response: Amended to 1.0 to 3.0 SLM or better

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Query-7: Software

We request to provide more clarity on re-calibration of flow rate and multi detectors

Response: Clarification provided.

Points clarified by CSIR-IICT Team during PBC:

The firm informed that they do not have problem with other points of tendered specifications and requirements. Participating bidders have been informed that points raised by them during PBC will be examined by CSIR-IICT's Technical Sub Committee (TSC) constituted for the purpose of procurement of said equipment and post PBC changes in tendered specifications and requirements to be agreed after due consideration of the same by TSC, if any, will be uploaded in CPPP as part of revised/amended tendered specifications.

Minutes of the PBC with changes agreed (if any) will be uploaded in due course at CPPP for information and reference of prospective bidders on or before 29.11.2023. All bidders are requested kindly to take a note of changes in tendered specifications subsequent to PBC held today, i.e. 23-11-2023 before they start submitting their online bids through CPPP.

(Dr Sreepriya Vedantam)

Member

(D Venkateshwar Rao) (Dr. P. Aruna)

Member

IO/PL

as Representative of IO

# **Revised Specifications/Corrigendum**

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Dt 23.11.2023

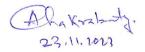
## Specifications For Gel Permeation Chromatography (Size Exclusion Chromatography)

#### **General specifications**

The Basic components of the equipment should include:

- 1. Isocratic Pump
- 2. . Sample injection valve
- 3. Degassers
- 4. Column compartment (with columns)
- 5. Detectors RI and ELSD
- 6. Personal computer with the suitable analysis software

System configuration	Modular ( should have the provision to be extended with additional components such as degasser, autosampler, detector etc. anytime later		
Essential feature	<ol> <li>The basic component of the GPC equipment such as:         <ul> <li>Isocratic Pump</li> <li>Sample injection valve</li> <li>Degassers</li> <li>Column compartment</li> </ul> </li> <li>Should be manufactured by single OEM. Necessary Certificates should be enclosed.</li> </ol>		
	2. Information on GPC equipment supplied to any government organization in the last 3 years should be provided (with full contact details)		
Measurement method	Isocratic; single flow		
Mobile phase delivery	Serial or parallel with double plunger/piston		
Mobile phase flow rate range	≤0.001 to 10 mL/min.		
Flow rate accuracy	Less than 2% or 2-5 μL/min		
Flow rate increment	Less than 0.001 mL/min		
Flow rate precision	Not more than 0.1%RSD or 0.05 min SD (whichever is greater		
Mobile phase degassing method	Vacuum method using degasser membrane		
Degassing line flow rate	Not less than 200μL/min.		
Sample injection method	Via manual injection valve		
Sample injection volume range	1μL to 500μL (variable loop weighing)		
Column compartment			
Column temperature control	Thermostat capable of heating and cooling		
Temperature range	Room temperature to 70°C		
Compartment space	Should accommodate 4 or more columns of up to 300 mm length		
Delivery pressure	40 MPa (max)		
Oven temperature accuracy	±0.5°C		



Temperature precision	±0.2°C	

#### **Detectors**

- 1. Refractive Index Detector (RID)
- 2. Evaporative Light Scattering Detector (ELSD)

## **Specifications of RID**

< 6 × 10 <sup>-9</sup> RIU
10 × 10 · 110
< 2 × 10 <sup>-3</sup> RIU/h
Should be within 10 – 20 μL
5°C above ambient to 50°C or more
≤ 0.5mL to ≥ 5.0mL

## **Specifications of ELSD**

Light source	Suitable light source
	Photodiode/photomultiplier tube
Detector	Hear interchangeable
Nebulizer was higher and an index and and	Air or Nitrogen
Nebulizer gas	Minimum 50 psi
Operating pressure	1.0 to 3.0 SLM or better at 25 °C
Gas flowrate	25 °C – 75 °C (with 1°C increment)
Temperature range (Evaporator)	to the second of
Temperature range (Nebulizer)	25 °C – 75 °C (with 1°C increment)
Eluent flow rate	≤ 0.2 mL to 2.0 mL/min
Detector noise	<2.0 mV
Drift	<2.0mV

#### Software

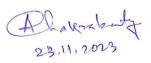
Software should have control to fix all the parameters like flow rate, oven temperature, column pressure, choice of solvent etc. It should be easy to use chromatography software which is compatible with the GPC control module with automated analysis. It should include re-calibration with added feature of flow rate and multi-detector delay correction.

#### Computer

A personal computer with original operating system and printer is required. The computer should support the instrument software and which can be upgraded in future.

#### Columns

- 1. Columns for analyzing samples in the molecular weight range of 1,000 Da to 25,00,000 Da.
- 2. Column size Length max. 300 mm, Inner diameter upto 16 mm



- 3. Mixed gel columns of styrene divinyl benzene for analysis of organic solvent (THF, DMF, NMP, DMAc, Toluene, Chloroform) soluble polymers 2 sets
- 4. Methacrylate columns for water soluble polymers 1 no.
- 5. Columns for strongly cationic samples and guard columns -1 no.
- 6. Two Guard columns for each of the above columns

#### Calibration standards

Polystyrene standard calibration kit covering mol. wt. range of 1,000 Da to 25,00,000 Da

#### Warranty

2 years warranty

## Miscellaneous items to be provided at the time of supply of equipment

- 1. Syringes for sample injection of different volumes
- 2. Filtration kit with filtration membranes
- 3. Syringe filters with required accessories
- 4. Solvent bottles for storing mobile phase and collecting used solvent
- 5. Sample vials
- 6. Nitrogen gas regulator, filters and necessary tubing for connecting the cylinder to the instrument
- 7. .Suitable UPS with 1 Hour backup
- 8. .8. Nitrogen gas generator which can supply N2 gas with 99.999% purity.

All the other tender terms remains unchanged. Bidders may please submit their bids accordingly.

(Dr Jithender Reddy)

Member

(Dr Sreepriya Vedantam)

Member

(D Venkateshwar Rao)

Member

(Dr. P. Aruna)

IO/PL

(Dr Rohit K Rana)

As Representative of IO

(Dr. N Lingaiah

Chairperson