Tender Notification for the procurement of Instrument for Macromolecular Binding Kinetics Measurement at the Indian Institute of Science, Bengaluru

(Last Date for submission of tenders: July 8, 2019)

Dear Sir/Madam,

Kindly send your best quotation for the following item with various accessories on C.I.P. Bangalore basis to the undersigned. Your quotations should clearly indicate the terms of delivery, delivery schedule, warranty, payment terms, etc. The tender should be submitted in two separate sealed envelopes: one containing the technical bid and the other containing the commercial bid, both of which should reach the undersigned, duly signed on or before 1700 hours July 8, 2019. The technical bid must include details of technical specifications of the equipment along with commercial terms and conditions; however, the price components should NOT be shown.

The commercial bid must include the price of the item as CIP bangalore indicating the break up of the following:

(i) The price of the goods quoted on CIP, please note no Agency Commission will be paid

(ii) The charges for insurance and transportation of the goods by Air up to Bangalore.

(iii) The installation, commissioning and training charges including any incidental services, if any. The installation and training charges should be for onsite (Bangalore) only and not include any travel amount. This is should be mentioned in the document.

(iv) Please include a table indicating compliance with the specifications indicated below.

Please enclose a compliance certificate along with the technical bid.

The following points should also be noted

The system should include a computer and appropriate softwares for running and post acquisition analysis.

Startup reagent kits including multiple kinds of ligand binding surfaces and reagents need to be included.

Supplier needs to provide on-site applications training in IISc to the satisfaction of the facility-in charge.

Terms and conditions:

The vendor should have a good track record of having previously supplied similar equipment in India (please furnish the details).

The vendor should have qualified technical service personnel for the equipment based in India

(preferably in Bangalore).

The payment will be through a Letter of Credit.

The lead time for the delivery of the equipment should not be more than 6 months from the date of receipt of our purchase order.

The validity period of the quotation should be 90 days.

Kindly indicate the import code of the items.

If the goods are found to be defective, they have to be replaced or rectified at the cost of the supplier within 15 days from the date of receipt of written communication from us. If there is any delay in replacement or rectification, the warranty period should be correspondingly extended.

The purchaser reserves the right to accept or reject any bid and to annul the bidding process and reject all bids at any time prior to award of contract without thereby incurring any liability of the affected bidder or bidders.

Yours Sincerely,

Raghavan Varadarajan
Professor
Molecular Biophysics Unit
Indian Institute of Science
CV Raman Ave
Bangalore-560012

(on behalf of the purchase committee)

Name and Specifications of the product: Instrument for Macromolecular Binding Kinetics Measurement

1. System should be capable of monitoring bio-molecular interactions in real time and provide the kinetics, affinity and yes/no binding data. In the kinetics assay the system should provide ka (on rate), kd (off rate) and KD (equilibrium kinetics constant of dissociation/affinity constant) after complete analysis of the raw data.
2. The system should be able to provide kinetics data in the following ranges:
    a. ka: 10^3 to $3x10^9$ $M^{-1}s^{-1}$
    b. kd: $5x10^{-5}$ to 1 s^{-1}
    c. Refractive index range: 1.33 to 1.40
    d. Concentration range: 10^{-3} to 10^{-11} M
    e. Temperature range: 4-45 ^oC (for both analysis and sample chambers) with accuracy of 0.01 degree Celsius
3. System should have baseline noise (RMS) of less than 0.03 RU to provide high quality data.
4. System should be able to study mM (millimolar) to fM (femtomolar) range of affinities.
5. System must be able to provide both transition state thermodynamics (ΔH°‡ ass., ΔS°‡ ass., ΔG°‡ ass., Ea ass., ΔH°‡ diss., ΔS°‡ diss., ΔG°‡ diss., Ea diss.) and steady state thermodynamics (ΔH°, ΔS°, ΔG°) data in a temperature range of 4-45 ^oC.
6. System should have peltier based temperature control from 4-45 ^oC for the reaction chamber and also for the sample chamber (4-45 ^oC to keep samples in lower temperatures).
7. System should have temperature accuracy of 0.01 degree Celsius throughout the range of temperature.
8. System should have facility for simultaneous measurement of at least 3 separate interactions in addition to appropriate buffer or reference subtraction.
9. System should have fully automated sample handling including sample injection
10. For systems using surface plasmon resonance, the system should be able to generate high quality kinetics data with ligand immobilization below 20 RU or Rmax of 5 RU.
11. System should be able to run continuously and unattended for at least 48 hrs.
12. system should have provision of keeping at least four different running buffers (at least 50 ml each) and should have program to perform buffer scouting for both interaction and where required, regeneration conditions.

13. Following binding, the system must be able to recover bound material and collect volumes as low as 2µL into a chosen rack or MALDI target plate position for secondary characterization by MALDI-MS or MS-MS analysis.
14. System should be able to perform both single cycle kinetics and multiple cycle kinetics without changing hardware.
15. System should be able to perform *in-solution* affinity analysis of competitive binders or inhibitors and should be able to provide KD of inhibition/competition or the IC50 value of inhibitor.
16. System should have merged injection option to perform on-line mixing of reagents just prior to analysis.
17. System should have automation in sample mixing to make dilutions of specific ratios minimizing human errors in concentration analysis.
18. System should be able to perform immunogenicity testing assays on clinical (serum) samples. It should be able to perform both ADA (Anti-drug antibody) identification, confirmation and quantification for common ADA as well as neutralizing antibodies.
19. System should be able to perform ADA (Anti-drug antibody) isotyping assays.
20. System should also be able to provide absolute concentrations of interacting proteins / biomolecules without the need of calibrant molecule or calibration curve(s).
21. System should be able to study interactions of small molecules (drug compounds, peptides, ions, etc), lipids, polysaccharides, nucleic acids, etc. and and should be able to detect binding of species with a MW > 30 Da
22. System should be able to study ionic interactions and should be able to detect binding of species with a MW > 100 Da
23. Supplier/manufacturer should provide suitable surface and chemistries for immobilization of proteins, cells, lipid bilayers, lipid monolayers, liposomes, viruses on the sensor surface should be possible with the system using covalent coupling reactions (amine-, thiol-, maleimide-, aldehyde- coupling), hydrophobic properties, etc.
24. System should be capable to immobilize molecules using various capture chemistries for His- tagged, biotinylated proteins and antibodies.
25. System should have sensor surfaces with Protein-A, Protein-G and Protein-L to capture mAbs, Fabs and ScFvs.
26. System should be provided with consumables needed for covalent coupling of biomolecules to sensor surface using amine-group and thiol-group.
27. System should have inbuilt methods and wizards for easy programming through control software.
28. System should be able to handle samples in vials (1.5 to 4 ml), 48-, 96-, 384- well plates.
29. System should have option for GxP Package and “21 CFR part 11” compliance to support GxP related work