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Minutes of the Pre-Bid Meeting held on 07.08.2017 at 11.00 am in connection with our Tender Enquiry No.12/2017-18 for supply and installation of Laboratory Equipment for Department of Life Sciences under Project SERB-EMR & DBT-NER-BPMC Projects.

The following members have been constituted for pre-bid conference:

1. Dr. E. M. Shankar, Associate Professor and Head, Dept. of Life Sciences - Chairperson
2. Dr. Jayalakshmi Krishnan, Assistant Professor, Dept. of Life Sciences - Member
3. Dr. Meganathan Kannan Assistant Professor, Dept. of Life Sciences - Member
4. Dr. Indranil Chattopadhyay, PI & Assistant Professor, Dept. of Life Sciences- Member & Convener
5. Dr. Dinakar Challabathula, Assistant Professor, Dept. of Life Sciences – Member

An open Advertisement for the aforesaid tender was floated on 28.07.2017.

The representatives of following prospective bidder attended the Pre Bid Conference:-

Thermo Fisher Scientific, Invitrogen BioServices India Pvt Ltd
Whitefield, Bangalore – 560 066.

The attendance sheet is enclosed herewith as Annexure I.

Opening Remarks:

(i) Dr. Indranil Chattopadhyay PI & Assistant Professor, Dept. of Life Sciences of the Project at the beginning welcomed the participating member and after introduction, he briefed all participants about the tender.

(ii) It was explained that purpose of Pre-Bid Conference is to explain the various important provisions of the bidding documents to the prospective bidders and to clarify the queries that the bidders may have in the subject, bidding documents.

The technical queries and clarification sought by the prospective bidders are given as under:-

Sl. No	Query/ Clarification Sought	Reply to the Query
1.	For Real-Time PCR Machine, alternative methods equivalent to FRET is also preferred	Alternative methods equivalent to FRET will be incorporated into technical specifications
2.	For Real-Time PCR Machine, Single Light source with single detector or C-Mos technology is also recommended	Single Light source with single detector or C-Mos technology will be incorporated into technical specifications
3.	Specification of UPS (power backup) is need to mentioned for both machines	3KVa UPS with 1 hr power backup is required and it is mandatory along with equipments.
4.	For Gradient Thermal Cycler, the supporting minimum reaction volume is need to change from 1µl to 10 µl	For Gradient Thermal Cycler, the supporting minimum reaction volume has been changed from 1µl to 10 µl.

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The revised technical specifications incorporating necessary amendment suggested above is enclosed in Annexure II

The bidders were informed to ensure that all mandatory documents / certificates / undertakings are enclosed with the bids, as specified in the tender document.

The bidders were informed that the minutes of the pre-bid conference and amendment of the bidding forms shall be published on the Website of Central University of Tamil Nadu. The bidders were also informed that they should also regularly visit the CUTN website for any amendments issued.

In case of any further information/clarification, they were asked to contact over phone, to the Purchase Section at 04366-277359 (or) send email on purchase@cutn.ac.in; Individual visits are not entertained.

The meeting ended with a vote of thanks to the representatives of the prospective bidders.

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Dr. E. M. Shankar
Associate Professor and Head,
Dept. of Life Sciences

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Dr. Jayalakshmi Krishnan
Assistant Professor, Dept. of Life Sciences

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Dr. Dinakar Challabathula
Assistant Professor, Dept. of Life Sciences

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Dr. Indranil Chattopadhyay
PI & Assistant Professor, Dept. of Life Sciences
of SERB & DBT-NER-BPMC

PURCHASE SECTION

Inward No	212
Date	11.08.2017
Department	Life Sciences

Annexure-II

TECHNICAL SPECIFICATION

1. Real Time PCR Machine - 01 Unit under DST-SERB-EMR Project

- Real time PCR with block of 96 x 0.2 ml tubes or plate to run typical 0.2ml tubes, strips, and plates.
- The base thermal cycler should be able to be used for standard PCR
- Gradient capacity in Real-time to support optimization of Protocols (Optional).
- Sensitivity: 1 copy of Rnase P Gene (human genomic DNA)
- Throughput: 4 to 5-96-well plates per 8-hr day
- Precision: 99.7% confidence (5000 & 10000 copies)
- The built-in emission filters to readily support broader range of fluorophores with a greater sensitivity for longer wavelength (red) dyes. The system should be readily configured and optimized for use of any of the following dyes or a combination thereof at any time, without any change in the hardware. Calibrated dye: **NED™, SYBR® Green i, CY5™, CY3™, JOE™, FAM™, TAMRA™, TEXAS RED®, VIC™, ROX™**
- Ramp rate: ± 1.1°c/sec, peak @ 2.5°c/sec
- Temperature accuracy: 0.25°c (35°c to 95°c after 3 min)
- Temperature uniformity: 0.50°c (after 30 sec)
- Temperature range: 4-100°c
- Passive reference dye: No ROX, ROX (pre-mixed), Rox (separate tube)
- Heating/cooling method: Peltier
- Detection of minimum five different fluorescent reporters in the same tube and supporting international publications.
- Six excitation and six emission channels and each filter should correspond to one dye that ensures smooth differentiation of even dyes having high degree of spectral overlap.
- Should be capable of Detecting commercially available universal dyes
- Maximum Ramping speed not less than 5 ^{O}C per sec
- Peltier Cooling & Heating for uniform temp control
- Channel dedicated for FRET experiments or alternative method equivalent to FRET is preferred
- Excitation –Emission range: 450- 730nm
- Six different LED excitation source with six Photodiode detector or single light source with single detector or C-Mos Technology
- Dynamic range of 9 orders or above.
- **Open system capable of running various chemistries, reagents and plastic ware so that different chemistries using TaqMan, SYBR green etc all can be performed.**
- Temperature range 0– 100 ^{O}C with accuracy of ±0.2 ^{O}C and uniformity of ±0.4 ^{O}C within 10 sec of arrival at 90 ^{O}C
- System must be capable of working with minimum sample volume: 1µl to 10 µl is also preferred. Reaction volume range: 20-100 µl
- Should have multiple scan modes with a FAST scan option for reading all wells in 3 seconds
- Automatic allelic discrimination by end point fluorescence or threshold cycle.
- **Gene expression analysis by relative quantity (ΔCt) or normalized expression (ΔΔCt) and absolute quantification**
- End point analysis for minimum 5 fluorophores

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- Should have mode for Melt curve analysis.
- Software to express base lining Amplification Data to be supplied with proof.
- User interchangeable facility to be available to perform normal PCR with 48well blocks.
- Software should show statistically linear Data and should be demonstrated.
- Software should have express load feature which allows entry of data after experiment.
- And one additional software to be supplied for exporting data from other real-time PCR machines and also which can give ready to publish data as per MIQE guidelines should be supplied free of cost.
- Real time PCR should be licensed for Research applications and license copy must be provided.
- Email Notification facility with data file after the run is complete is **needed**.
- The supplier should be able to supply all the reagents and consumables for the operation of the system. A complete line of reagents including TaqMan® universal PCR Master Mixes and SYBR® Green I Master Mixes, and disposables including tubes and 96-well plates for use with the system must be quoted.
- Standard Warranty Period of two years
- 3KVa UPS with 1hr Power Back up
- HRM Software to be supplied along with the machine.
- **to support: a. Gene-Expression analysis, b. Pathogen Quantification, c. SNP Genotyping, d. Plus/Minus Assays that utilize internal positive control, e. Dissociation Curve Analysis, f. Multiplexing and complete End-Point Assays, g Methylation Study with publications.**
  Application software like dedicated primer and probe design software as well as relative quantization analysis software to analyze multiple 96-well-plates of data simultaneously must be included as standard supply in the quoted price.
- Computer: A business line computer (either notebook or tower) should be provided with the system. External computer: notebook: intel core 2 duo t5500 (1.66 ghz),80 GB HD, 1.0 G DDR2-533 MHZ SDRAM, 8x DVD
- Primer express, system software (RQ included)
- The installation specifications must demonstrate the ability of the system to distinguish between samples containing 5,000 and 10,000 template copies with a confidence level of 99.7% using an RNaseP instrument verification plate or alike. The system must be calibrated optically for the pure dyes during installation at sight.

2. Gradient Thermal Cycler – 01 Unit under DBT-NER-BPMC Project

1. The system should have a sample capacity of 96x0.2ml tubes, 0.2ml tube strips or 1x96-well plate with Peltier heating and cooling. The system has 96 well block with peltier based heating and cooling.

2. It should have gradient capability. Should have the feature of dynamic ramping (identical hold times) for all the 8 rows of gradient. Gradient zones / rows: 8-12

3. Thermal Gradient or temperature differential range with 1-25^0 C would be ideal.

4. Touch screen will be an added advantage for user friendly operation. The touch screen should be responsive for both gloved and ungloved fingers. It should have intuitive touch screen interface which can displays graphics in high resolution for easy programming. Touch screen for user friendly operations and graphical programming.

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5. The system should be able to support running reaction volumes as low as 10 ul to 120ul. And minimum 50 plates to be supplied along with the machine.

6. Maximum Ramp rate of 4^0 C /Sec and average ramp rate of 2.5 -3^0 C /Sec.

7. Temperature range for gradient function: 30 - 100°C

8. Temperature range: 0-100^0C /Sec. Block Should have a temperature range of 4-100 deg C

9. Temperature accuracy ±0.2°C - ± 0.5°C of programmed target at 90°C.

10. Should have Temperature control modes as both as Calculated and block mode, Fast, Standard & Safe.

11. Should be licensed for both diagnostic and research applications. Copy of license should be attached.

12. Should be compatible with all kind of plastic consumables and reagents especially reusable sealing Mats.

13. Should have the feature of "instant incubation" to keep samples at constant temperature for ligation and restriction enzyme digestion.

14. The system to have minimum memory of 500 typical programs on-board. PCR program templates: 16 PCR program templates (2-step PCR, 3-step PCR, Gradient PCR, Touch Down PCR, Gradient PCR, Low volume PCR, Large volume PCR, Long range PCR, fast PCR, Reverse transcription PCR, Cycle sequencing, etc.). Software support for generating an optimal protocol based on the polymerase, primers and product length is needed for optimizing long range PCR experiments.

15. The system should be useful to prepare next generation sequencing libraries.

16. Should have a memory of >500 programs with further expansion through a USB Flash drive for transfer of files. 1or 2 Ports for USB & Ethernet port: The system to have USB flash drive for transfer of protocols. Program storage: On instrument or on USB stick/ on instrument or Flash drive.

17. Standard Warranty Period of two years for total system.

18. The system should be provided with compatible 3 KVa UPS (Power Back up) for minimum 1-2 hours.

19. Weight: 9-11kg

20. Dimension (W x H x D): 25 x 41 x 32 cm or 26 x 23 x 47 cm

21. Should have power save mode.

22. The software should have exportable Run logs and system logs, Should have quick boot up time of not more than 1 min. The system should be quiet in operation.

23. Temperature uniformity ±0.4°C well-to-well within 10 sec of arrival at 90°C.

24. Gradient accuracy ±0.2°C - ±0.5°C of programmed temperature at end rows.

25. Row uniformity ±0.4°C- ±0.5°C well-to-well (within row) within 10-30 sec of arrival at target temperature.

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26. Input power: Up to 670- 700 W maximum.

27. Ramping type: Steady Slope (synchronized ramp rate)/ Dynamic

28. Block Homogeneity: ≤ ± 0.4°C- ± 0.5°C (90°C); ≤ ±0.3° C (20°C to 72°C); ≤ ± 0.4° C (90°C)

29. The system to have instant incubation mode.

30. Fully adjustable heated lid is necessary. Flexlid technology with Thermal sample Protection (TSP) to accommodate PCR tubes with flat or domed caps.

31. Settling time of 10 seconds would be ideal for the block.

32. Lid Temperature range: 37 - 110 °C

33. Heating rate: 3 °C/s; Cooling rate: 2 °C/s

34. Auto Restart facility with user defined time interval when power fails and resumes

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