Department of Genetics
University of Delhi South Campus
New Delhi - 110021

Specification of Droplet Digital PCR system with Accessories

Ref. no. UDSC/Genetics/AD/DD PCR/F/2024-25 **Dated 27.02.2025**

Quotations are invited through GeM / CPP portal (e-procurement) under 2-bid system for Droplet Digital PCR system along with Accessories with FOR destination price to be quoted in INR for University of Delhi, South Campus. The quote should be inclusive of all taxes and duties for supplying and installation of the item as described below

1	Table-top modular system with latest state of the art technology and upgradable modalities in terms of automation and multiplexing capabilities, complying with norms of respective instrument placements in pre-amplification, amplification and post-amplification areas as recommended by accrediting agencies and complying with MIQE guidelines.	
2	Complete, ready to use setup should be quoted and supplied, which should include Droplet Generator, Droplet Reader, Plate Sealer, Gradient enabled Deep-Well Thermal Cycler, High configuration Computer System, Data analysis Software and all essential accessories.	
3	System should be able to: • Detect rare DNA target copies with high sensitivity • Determine SNP mutation with high sensitivity • Perform absolute quantification of nucleic acids with high precision and sensitivity without the use of reference genes, standard curves or any kind of passive reference dye, that involves normalization before data interpretation • Determine copy number variation with high accuracy • Measure gene expression level with high precision. • Perform NGS Validation and library quantification	
Droplet Generator:		**1 No.**
4	System should be based on water-oil emulsion droplet technology with microfluidics.	
5	System should be able to generate around 20000 uniform nanoliter droplets of each sample.	
6	Total reaction volume needed: 20 microliters	
7	Sample capacity: Flexible, a min of 8 samples per cartridge to 96 samples per run. The sample capacity should be easily scalable from 1 sample to 96 sample in a single run.	
8	Droplet generator should be ready to use system, supplied with all standard and essential accessories, attachments, etc.	
Droplet Reader:		**1 No**
10	Suitable for counting data from one droplet at a time and segregating PCR positive and PCR negative droplets.	
11	Reading capacity: System should be capable of reading and analyzing 1 to 96 samples in a single run.	
12	Compatible for 96- deep well plate.	

13	Sample Illumination/Detection method: System should use two light emitting diodes for illumination and differentially detect emission using two filtered multipixel photon counter.	
14	Dynamic range: 4 orders or more	
15	Six channel detection for FAM (Evagreen), HEX (Vic) dyes, Cy5, Cy5.5, ROX and ATTO 590	
16	The equipment must be able to read and analyse multiplexing upto 12 targets/well with probe based chemistry, as well as must be capable of performing multiplexing even with dye (Evagreen) based chemistry.	
17	The reader must be able to detect, read, analyse and represent fluorescence data from each single droplet individually, during the data capture step	
Plate Sealer		**1 No**
18	Plate Sealer suitable for sealing 96 well plate using heat-based sealing, along with support block, sealing frame and power chord.	
Thermal Cycler:		1 No
19	Gradient enabled 96 deep-well PCR which can be used as a standalone PCR machine and having gradient range of 30-100°C with temperature differential range of 1-24°C	
20	Instrument with graphical touch screen and display should be provided	
Software:		
21	Software packages for Droplet Digital PCR data capturing and analysis, which should include features that: - Provide total number of droplet counts per sample, fraction of negative droplets for each sample to fit to a Poisson algorithm, - Display of fluorescence amplitude value per droplet for both channels {FAM and Hex(VIC)}, - Show how multiplex data per sample can be calculated, for two channels, - Computes Absolute quantitation (copies/µl) for each sample - Performs copy number variation analysis, - Calculates fractional abundance of mutant target in wild-type background for mutation detection, - Allow setting automatic/manual threshold values for entire sample plate or for individual samples, - Options for merging results from replicate wells, - Graphical and tabular representation of data, data acquisition and analysis, report generation, export results, etc.	
24	Software package used for digital PCR system should be latest one to be freely used in different computer systems	
25	The software should not require manual setting of exposure & camera gain for the optics bench during or after run set up to avoid inter/intra run variations, subjective data analysis and automated data interpretation without manual intervention.	
26	The software should not require any reference dye to detect/normalize and count positive and negative droplets to avoid bias	
Computer		
27	Latest available and manufacturer's recommended high configuration computer workstations should be provided for control, acquisition + analysis, etc. Computer	1 No

	system should be inclusive of all required hardware, drivers, adequate storage and RAM modules, etc.	
28	Computer system should have sufficient memory to store at least 1000 previous runs data	
Consumables:		
30	Consumables required for installation and starter kit to run the instrument must be provided.	
31	The vendor must have comprehensive portfolio of Assays and Kits across different Applications- Mutation Detection, Copy Number Determination, Genome Edit Detection, Gene Expression, Residual DNA Quantification and Library Quantification. Wet Lab Validated Assays (in form of Screening kits, individual mutation and CNV assays and Multiplexing kits) must be available for the mutation detection and CNV analysis. 3rd party IVD Kits should also be available on the quoted platform.	
Mandatory Parameter		
27	Flexibility to take Time-breaks during workflow; droplet generation to PCR-Readouts	
28	Thermal cycler with gradient feature to be available in the system to run samples with different annealing temperatures and for easy assay optimizations, to incur lower sample running cost, save time and provide wider flexibility.	
29	The instrument/technology must have and option of recovering the samples after thermal cycling for any other downstream applications like NGS.	
30	No Special temperature window for instrument operation	
31	Flexibility to use small (8) or high (96) number of samples throughput without wasting consumables	
32	All Workflow components manufactured by same vendor for consistent performance delivery	
33	The technology must have more than 11,000 Publications in reputed international journal as proof of technology	
34	More than 100 installations in India, with at least 30 installations in clinical setup and 10 installations at Diamonds sites in India.	

General Instructions

1. Premium branded instrument should be provided to ensure the high quality and reliability of experimental outcomes.
2. Details on website & product literature justifying the technical specifications must be provided. The vendor must provide appropriate link/ website detail to verify the technical specifications mentioned in the provided product broacher.
3. The system should come along with 3 years of warranty. Should be supported with remote services, cloud connectivity online monitoring, and external barcode using USB, etc.
4. The supplier should have service center in Delhi/NCR for quick service within 48 to 72 hours
5. Firm MUST provide a compliance statement vis-à-vis specifications in a "tabular form" clearly stating the compliance and giving justification, if any supported by technical literature with clear reference of page number, paragraph, or lines. This statement must be signed, with the company seal, by the Tendered for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification of the Tender.

Important information

1. The quotation should be addressed to the "Professor Amit Dutt, Department of Genetics, University of Delhi South Campus, New Delhi-110021". The quote should be submitted with all terms and conditions and necessary documents latest by end of tender date.
2. Quotations must be submitted in a two-bid-system. The first part, technical bid, should consist of all technical details and supporting documents with terms and conditions. The compliance sheet must be filled by the vender.
3. The second part, financial bid, should contain item-wise pricing of items mentioned in the technical bid. Both the quotation documents/ bids are to be submitted through GeM/ CPP portal of the Government of India only (e-procurement). Hard copies of bid will not be accepted.
4. Bank guarantee in INR 3% of the value of the instruments quoted should be provided along with the tender documents, in favor of "The Director, University of Delhi South Campus, New Delh-110021".
5. The bidder will have to quote all items together. Partial quotes will not be accepted. For each item, the make, model and technical specifications and quantity must be mentioned clearly. Original brochure must be provided.
6. The purchase committee reserve the right to request the participating vender for demonstration of the all the quoted technical specification/ capabilities of the offered model preferably at University of Delhi South Campus, New Delhi-21, or within the Delhi state. The purchase committee reserves the right to disqualify a participating vender if they fail to demonstrate the quoted technical specification and/or capability of the offered equipment/ model.
7. The quote should be valid for 90 days from the last date of submission of bid.

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