

**All-India Institute of Medical Sciences**  
**Ansari Nagar, New Delhi-29**  
**(RESEARCH SECTION)**

**Ref. No. 03/Prop./CCRF/AIIMS/2019-20/St.**

**Dated: 07.03.2019**

**Subject: Purchase of Automated Digital PCR System for the Deptt. of CCRF,  
AIIMS, New Delhi-29 on proprietary basis- Inviting comments thereon.**

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The request has been received from Assoc. Dean (RS), Member Secretary, Deptt. of CCRF, AIIMS to purchase the subject item from M/s BSP Diagnostic System (Mfg. by M/s. Bio Rad Laborites) on proprietary basis. The proposal submitted by M/s. BSP Diagnostic System and Performa Invoice and Departmental PAC certifications are attached.

The above documents are being uploaded for open information to submit objections, comments, if any, from any manufacturer regarding proprietary nature of the equipment/item within issue of 15 days giving reference **No. 03/Prop./CCRF/AIIMS/2019-20/St..** The comments should be received by office of Stores Officer (RS), Research Section at AIIMS on or before **22/03/2020 upto 12:00 p.m.**, failing which it will be presumed that any other vendor is having no comment to offer and case will be decided on merits.

**STORES OFFICER (RS)**

**Encl: Related documents enclosed.**

**1. PAC Certificate enclosed.**

**2. Performa Invoice**

ALL INDIA INSTITUTE OF MEDICAL SCIENCES  
ANSARI NAGAR, NEW DELHI-110029

PROPRIETARY/SPECIFIC BRAND GOODS CERTIFICATE

1.	Item/Type/Model No. required along with Specifications	QX One Droplet Digital PCR System
2.	Is the item a spare part attachment or accessory for an existing equipment	No
3.	Name of the manufacturers/supplier of the item proposed by the indenter	Manufacturer: M/s Bio-Rad Laboratories Supplier: M/S BSP Diagnostic Systems (P) Ltd.
4.	Are they sole manufacturers/sole distributors of the item	Yes
5.	Is there any other item with similar/ equivalent specification available in the market to meet the job requirement envisaged? If the answer is yes, why same can't be procured. Demanding Officer should bring out comparative functional advantages/cost effectiveness of the recommended item from these offered by other	None
6.	What were the efforts made to locate alternative source of supply or use other substitutes	Internet Search
7.	Why open/limited tender can't be restored to, for locating alternative source	This is a proprietary item and documents to this effect have been received from the vendor. However, the same may be placed on website for inviting comments and to ensure availability of any alternative item as applicable
8.	Are the proprietary items certifying that the rates are reasonable or not	Yes
9.	Any other justification for procuring item from single source	None

**Signature of Indenter**  
(Demanding Officer)

**COUNTERSIGNED**  
(Head of the Department)

We certify that the item at SNo. 1 above is required to be procured on single tender basis as the source of supply is definitely known/the specified brand proposed was advantageous in meeting our requirements and limited tender system could be dispensed with as they would serve no useful purpose this particular case

*[Handwritten signatures and initials]*

*[Handwritten signature]*  
Dr. Madhulika Kalia  
Head of the Department  
All India Institute of Medical Sciences  
Ansari Nagar, New Delhi-110029

*[Handwritten signature]*

### Justification for the purchase of Automated Digital PCR system

Droplet digital PCR is a high-throughput digital PCR which provided an absolute count of target DNA copies per input sample without the need for running standard curves. The sample partitioning in droplet digital PCR enables the reliable measurement of small fold differences in target DNA sequence copy numbers among samples leading to the measurement of small percentage differences and quantification of rare variants. This technology enables absolute quantification of expression levels, especially low-abundance microRNAs, and can be used to quantify the NGS libraries too. It utilizes very low sample volume and reagent volume which ultimately leads to reduced overall cost compared with other methods. Consequently, droplet digital PCR has the potential to have a substantial impact on genomics research and thus be introduced in the central genomics facility.

Dr. Madhulika Kabra  
अध्यक्ष / Professor  
आनुवंशिकी एकांक (बायोमेट्रिक्स विभाग)  
Division of Genetics (Bioinformatics Department)  
आर्य समाज, पंजाब विश्वविद्यालय, लुधियाना-142004  
आर्य समाज, पंजाब विश्वविद्यालय, लुधियाना-142004

Dr. Madhulika Kabra

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## TECHNICAL SPECIFICATION OF FULLY AUTOMATED DIGITAL PCR SYSTEM - 1 NO

1. A Tabletop Digital PCR System with integration of complete workflow in a single unit including droplet generation/ partitioning, thermal cycling & droplet/ partition reading.
2. Entire workflow starting from Droplet generation/ sample partitioning, thermal cycling & droplet / partition read out must be performed in a single cartridge to ensure true walkaway automation.
3. System should be supplied with onboard high-resolution 24-inch touchscreen to allow easy programming, run monitoring, and full analysis of data
4. System should be able to detect rare DNA target copies with high sensitivity, determine copy number variation with high accuracy and measure gene expression level with high precision.
5. The system should be able to run a complete workflow for 96 sample in less than 8 hours & have automation capacity to run at least 3 plates (96x3) to ensure continuous running of samples if left unattended for 24 hours.
6. System must be supplied with onboard RFID scanner and RFID-barcoded consumables that allow fast and easy setup and ensure traceability of samples.
7. The system should come with inbuilt sample plate holder, hot swappable reagent holder & waste plate holder for automation compatibility
8. Sample Partitioning:
  - a. System should be based on water-oil emulsion droplet technology with microfluidics.
  - b. System should be able to generate  $\geq 20000$  uniform picoliter droplets of each sample.
  - c. Sample volume required: 20 microliter or less
  - d. Sample partitioning should be done to generate uniform partition volume
  - e. Microfluidic Cartridges should include both a sample and droplet well, which are compatible to the thermal cycling and droplet reading modules, thus eliminating the need for transferring of droplets in a manual way
9. Thermal Cycling:
  - a. The thermal cycling module must be an integrated part of the system thereby eliminating additional transfer process.
  - b. The integrated thermal cycling must be equipped with gradient capability to support optimization of thermal cycling protocol
  - c. The system should allow simultaneous amplification for 96 samples
10. Partition Reading:
  - a. Should have suitable tools counting PCR positive and PCR negative droplets/ partitions & have automated algorithm to separate poor quality partition volumes

Dr. Madhulika Kabra  
आचार्य / Professor  
(राज्यीय शिक्षण विभाग)

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- b. Two or more excitation source &  $\geq$  four detectors to simultaneously read four colors per droplet
  - c. System should not require any passive reference dyes
  - d. Sample illumination method: LED or better
  - e. Dynamic range: 5 orders or more
  - f. The equipment must be able to read multiplexing assays run with Taqman probe-based chemistry
11. Data Quality:
- a. Precision: CV<1.5%
  - b. Accuracy within  $\pm 5\%$  of assigned value of a quantitative reference standard
  - c. System should be able to demonstrate a Limit of Detection (LOD) of  $\leq 0.005\%$  mutant in a background of wild type allele
  - d. System should offer tool for Tilt Correction to conveniently set the threshold for non-orthogonal amplitude plots
12. Software
- a. Automatic documentation of consumable and reagent lot information using RFID scanner
  - b. Store information of the run including thermal cycling protocol, software version and error logs
  - c. Generates customizable report and report templates
  - d. Display fluorescence amplitude data for all fluorophore per droplet/ partition volume
  - e. Computation of copies/ $\mu$ l or copies/ 20 $\mu$ l reaction for each sample analyzed
  - f. Raw data export in .csv format, export of tables and graphs for print and/or records
13. Suitable capacity, compact online UPS system with 30 minutes backup time should be supplied with the equipment.
14. Startup reagents and reagents sufficient to run 400 reactions should be supplied with the machine
15. System should be supplied with a color laser printer and an additional work station with all the necessary software to analyse the data generated by this system.
16. Vendor should quote and provide latest state of the art model launched anywhere worldwide at the time of supply.
17. Vendor should provide extensive on-site training for system and software
18. Company must have a direct presence in India with strong after-sales technical and service support and must ensure that all faults are rectified within 72 hrs.
19. List of all the reagents compatible with the quoted system to be provided along with itemized pricing in the tender. The list should clearly mention the Catalogue No., Name and description of product for each of the quoted kit/reagent. The prices for consumables

Dr. Madhulika Kabra  
 Associate Professor  
 Department of Pediatrics  
 All India Institute of Medical Sciences  
 New Delhi-20



shall be frozen for next 5 years. In case of decrease in the price, the vendor shall pass on the benefit to the institute.

20. Vendor should submit an undertaking from manufacture the responsibility of maintenance in case of merger or acquisition.
21. Any Other accessory required for the effective and proper functioning of the machine should be supplied with the machine.
22. Five-year comprehensive warranty including all spares followed by CAMC (including all spares and labour) for next five years. The price of CAMC from 6th to 10th year will be added to cost of the equipment for calculating L1.
23. Penalty clause: Direct presence in India with strong after-sales technical and service support and must ensure that all faults are rectified within 72-hours, otherwise a penalty will be applicable @ 0.025% of the equipment cost per day for the first week, and it will be double in the second week, i.e; 0.05% per day; thus doubling every week till a maximum of 10% is reached. For the downtime exceeding the period of maximum penalty, the warranty will be increased at a rate equalling the double of the downtime in addition to the financial penalty. Director, AIIMS, New Delhi reserves the right to take administrative action such as removal of the Vendor/Manufacturer from list, debarring/blacklisting of the firm etc.

*Dr. Mathulika Kabra*  
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डॉ. मधुलिका काबरा / Dr. Mathulika Kabra  
अध्यक्ष / Professor  
आनुवंशिकी विभाग (Department of Pediatrics)  
Division of Genetics (Department of Pediatrics)  
आर्य समाज, नई दिल्ली / A.J.M.S., New Delhi-29  
DMC Regn. No. 18000

*Dr. Mathulika Kabra*

*Dr. Mathulika Kabra*

**PROPRIETARY CERTIFICATE**

This is to certify that the QX ONE Droplet Digital PCR System, P/N: 12006536 is a product of Bio-Rad Laboratories, Inc., 6000 Alfred Nobel Drive, Hercules, California 94547 USA. This product is covered by the following US Patents owned by Bio-Rad Laboratories, which are all currently in-force, and foreign equivalents thereto:

U.S. Patent No.	Description	Date of Issue
US 8,304,193	Method for conducting an autocatalytic reaction in plugs in a microfluidic system	November 6, 2012
US 8,329,407	Method for conducting reactions involving biological molecules in plugs in a microfluidic system	December 11, 2012
US 8,730,479	Detection system for droplet-based assays	May 20, 2014
US 8,822,148	Method of performing PCR reaction in continuously flowing microfluidic plugs	September 2, 2014
US 8,871,444	In vitro evolution in microfluidic systems	October 28, 2014
US 8,889,083	Device and method for pressure-driven plug transport and reaction	November 18, 2014
US 9,029,083	Vitro evolution in microfluidic systems	May 12, 2015
US 9,156,010	Droplet-based assay system	October 13, 2015
US 9,248,417	System for droplet-based assays using an array of emulsions	February 2, 2016
US 9,273,308	Selection of compartmentalized screening method	March 1, 2016
US 9,393,560	Droplet transport system for detection	July 19, 2016
US 9,409,174	Microfluidic system with fluid pickups	August 9, 2016
US 9,417,190	Calibrations and controls for droplet-based assays	August 16, 2016
US 9,441,266	Digital analyte analysis	September 13, 2016
US 9,492,797	System for detection of spaced droplets	November 15, 2016
US 9,562,837	Systems for handling microfluidic droplets	February 7, 2017
US 9,598,725	Emulsion chemistry for encapsulated droplets	March 21, 2017
US 9,687,848	Microfluidic system with fluid pickups	June 27, 2017
US 9,846,111	Optical detection system for particles	December 19, 2017
US 9,896,722	Systems for handling microfluidic droplets	February 20, 2018
US 9,968,933	Device and method for pressure-driven plug transport and reaction	May 15, 2018
US 10,060,847	Detection and signal processing system for particle assays	August 28, 2018
US 10,281,320	Optical detection system with light sampling	May 7, 2019
US RE41,780	Chemical amplification based on fluid partitioning in an immiscible liquid	September 28, 2010

To date, we are not aware of any other manufacturer who can supply the combination of catalog numbers and description of goods mentioned below:

12006536

QX ONE Droplet Digital PCR System:

- Instrument used for droplet generation, PCR, droplet reading
- Includes QX ONE Accessory Kit (PX1 GCR Sealer Support Block, QX ONE ddPCR System Waste Bottles, Keyboard, Power Cord)
- QX ONE Software Standard Edition
- Connects to the QX ONE Droplet Digital PCR System for instrument control, assay setup, and data collection and analysis

**Authorized Signature:**Name: George De La Rosa Job Title: Regulatory Affairs, Manager IISignature:  Date: 21-Feb-2020  
Dr. Madhulika Kabra  
Professor  
Department of Biochemistry  
University of California, Berkeley



Bio-Rad  
Laboratories (India) Private Limited  
(A wholly owned subsidiary)

EMAAR Digital Greens, 8th Floor,  
Tower A, Sector-61, Golf course extension,  
Gurgaon - 122102  
Tel : (91) 124-4530000  
Email : sales.india@bio-rad.com  
Tech Support : 1800-103-1204, 09873177477  
www.bio-rad.com  
GST No. : 06AAAC83020A129



Registered Office Plot No. 1270 Basement, Lal Dora, Village Kapashera,  
Opposite Fun-Food Village, New Delhi - 110037, Tel: 91-11-25065913  
PIN No. : 110037, DL 1806PT0375494, GST No. : 07AAAC83020A129

Ref #: BR/W/LSG/ATH/19/0381  
Date: 11<sup>th</sup> January 2019

To,  
The Director  
All India Institute of Medical Sciences  
Ansari Nagar, New Delhi- 110 029

Dear Sir/Madam,

We, **M/s. Bio-Rad Laboratories (India) Pvt. Ltd.**, having Registered Office at Plot No. 1270 Basement, Lal Dora, Village Kapashera, Opp Fun-Food Village, New Delhi-110037, and **Head office** at EMAAR Digital Greens, 9th Floor, Tower A- Sector 61, Golf Course Extension, Gurgaon-122 102, Haryana, India, are the 100% owned subsidiary of M/s. Bio-Rad Laboratories Inc., 1000 Alfred Noble Drive, Hercules CA 94547 USA.

This is to declare that **M/s. BSP DIAGNOSTIC SYSTEMS (P) LTD.**, having office at 3rd Floor, Atlantic Plaza, LSC Plot # 08, Surajmal Vihar, Delhi-110092, INDIA is our authorized & exclusive channel partner/distributor for your esteemed institute for our range of Life Science Products effectively from 1<sup>st</sup> January 2019 until further specified.

We hereby request you to kindly route all your future products purchases/ requirements of Bio-Rad products under Life Science Group category directly to them.

Thanks & Best Regards

For Bio-Rad Laboratories India Pvt. Ltd.



Ankur Majumdar  
Regional Sales Manager-Life Science Group (East & North)  
Mob: 9920267134  
Email: ankur\_majumdar@bio-rad.com

Dr. Madhulika Kabra  
अनंता / Professor  
अनंता (वैद्यकीय) विभाग (वैद्यकीय) / अ.नंता  
Division of Cardiology (Department of Cardiology)  
अ.नंता, नई दिल्ली / अ.नंता, नई दिल्ली  
DMC Regn. No. 11450



Quot BSP/19-20/18

Date 28/2/2020

To,  
The Director  
All India Institute Of Medical Sciences  
Delhi

Dear Sir / Madam,

With reference to the above, please find enclosed our Best offer for Bio-Rad Products.

Catalog #	Description	Unit Price (INR)	Qty	Total Price (INR)
12006536	QX ONE Droplet Digital PCR System	25500000.00	1	25500000.00
	*Instrument used for droplet generation, PCR, droplet reading			
	*Includes QX ONE Accessory Kit (PX1 GCR Sealer Support Block, QX ONE ddPCR System Waste Bottles, Keyboard, Power Cord			
	QX ONE Software Standard Edition			
	*Connects to the QX ONE Droplet Digital PCR System for instrument control, assay setup, and data collection and analysis			
<b>Consumables for installation</b>				
12007813	QX ONE ddPCR System Check Kit-Sufficient for 1 plate		2	Included
12007816	QX ONE Service Consumables-Sufficient for 1 plate		2	Included
12006858	GCR96 Cartridges, pack of 1		1	Included
<b>Total Ex-Works Prices : INR</b>				<b>25500000.00</b>
<b>Special Discount@10%</b>				<b>2550000.00</b>
<b>Total Value, New Delhi</b>				<b>22950000.00</b>
<b>GST 5%</b>				<b>1147500.00</b>
<b>Grand Total (INR)</b>				<b>24097500.00</b>

**BSP Diagnostic Systems (P) Ltd.**

3rd Floor, Atlantic Plaza, L.S.C., Plot No. 08, Central Market, Surajmal Vihar, Delhi-110092

Tel : 011-43549400 (8 Lines) Fax : 011-43097037 E-mail: [bsp@bspdi.com](mailto:bsp@bspdi.com) Website: [www.bspdi.com](http://www.bspdi.com)

Dr. Madhukar  
Signature  
Stamp: BSP DIAGNOSTIC SYSTEMS (P) LTD. DELHI  
Date: 28/2/2020



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AN ISO 9001 : 2008 CERTIFIED COMPANY

# Consumables Items Price List

Part No.	Item Description	QTY	Consumables	Price(INR)
12006859	GCR96 Cartridges, pack of 10	1	Consumables	292000
12006858	GCR96 Cartridge, pack of 1	1	Consumables	29200
12006843	GCR96 Foil Heat Seal, pack of 100	1	Consumables	8030
12006060	QX ONE ddPCR system waste bottle	1	Consumables	25550
12006058	QX ONE Droplet Generation Oil for Probes, enough for 18 x 96-well plates	1	Consumables	36500
12006057	QX ONE Droplet Reader oil, enough for 10 x 96-well plates	1	Consumables	65700
12007813	QX ONE ddPCR System Check Kit-Sufficient for 1 plate	1	Consumables	73000
12007816	QX ONE Service Consumables-Sufficient for 1 plate	1	Consumables	8030

GST Exempt - Nil  
For BSP Diagnostic Systems (P) Ltd.

Authorised Signatory



*[Signature]*  
Anshita Roy Chowdhury  
Senior Scientist  
Genetics  
Pediatrics  
Department of Medical Sciences  
110029

*[Signature]*  
Dr. Ritu Gupta / Dr. RITU GUPTA  
अध्यक्ष एवं प्रमुख अधिकारी/Professor & Officer-in-Charge  
प्रयोगशाला आनुवंशिकता एवं रक्तस्राव कैंसर परीक्षण-प्रयोगशाला, अजयपुर  
Laboratory Oncology & Personal Cancer Institute-Laboratory, Ajaypur  
ए.सी.एस.आई.पी.ए. सं. दिल्ली-110029

*[Signature]*  
Dr. Manuika K. Jha  
अध्यक्ष / Professor  
आनुवंशिकी एकाग (आनुवंशिकी विभाग)  
Division of Genetics (Department of Pathology)  
आयुष्मान नई दिल्ली / A.I.I.M.S. New Delhi-28  
DMC Regn. No. 16800

BSP Diagnostic Systems (P) Ltd.

3rd Floor, Atlantic Plaza, L.S.C., Plot No. 08, Central Market, Surajmal Vihar, Delhi-110092  
Tel: +91-11-47542400 (8 Lines), Fax: +91-11-43027037 E-mail: bsp@bspdiagnostics.com

### Standard Terms And Conditions

- 1-Validity 365 days
- 2-Delivery with in 90 days after the receipt of your confirmend purchase order
- 3-Installation training of the supplied instrument shall be done free of charged by the serve and application team of our principle
- 4-Warranty of 5 years the date of installation and after warranty five year CMC.
- 5-CMC charges 6th to 10years @ Rs.695000.00/ per annum + GST @18% extra.
- 6-Orders to be placed on BSP Diagnostic Systems (P) Ltd. 3rd Floor Atlantic Plaza Surajmal Vihar Delhi
- 7- GST 5% if DSIR certificate is provided otherwise will be charged @18%
- 8-Computer and 2KVA online UPS.
- 9- Raini Pipettes single channel volume range 2-20 ul , 100-1000ul 8 chahbel 2-20ul.

Thanking you

For BSP Diagnostic Systems (P) Ltd.

Authorised Signatory

डॉ. मधुलिका काब्रा  
अनार्य / Professor  
डाइविजन ऑफ गैनेटिक्स (Department of Genetics)  
एन. टी. पी. / A.U.I.S., New Delhi-29  
DMC Page No. 16990