

**ALL INDIA INSTITUTE OF MEDICAL SCIENCES
ANSARI NAGAR, NEW DELHI-29.
STORES SECTION (CNC)**

T. No.289/CNC/PAC/CP/2023-24/St.

Dated 18.05.2024

Subject:- Purchase of Droptlet Digital Polymerase Chain Reaction System (DDPCR)-01No. on Proprietary basis for the department of Cardiac Pathology, CNC, AIIMS New Delhi - 110029 - Inviting comments thereon.

The Institute has a proposal for procurement of Droptlet Digital Polymerase Chain Reaction System (DDPCR)-01No. on Proprietary basis for the department of Cardiac Pathology, CNC, AIIMS New Delhi-10029 from OEM M/s.Bio-rad Laboratories Inc, USA, through their authorized distributor M/s.ATCG India, Bhiwadi-301019. The proposal submitted by M/s.ATCG India, Bhiwadi, PAC Certificate submitted by OEM & user department and quotation are attached. As per Proprietary Article Certificate letter dated 14.01.2022, the quoted equipment Model: QX200 DD PCR manufactured by M/s.Biorad is PAC items for various required features and US patented.

User department also informed that required item i.e. 'Fully Droptlet Digital Polymerase Chain Reaction System (DDPCR)' is in the GTE exemption list of 371 item vide OM No.F.4/1/2022 PPD (PT) GOI dated 03.04.2023 (Sr.No.93)

The above documents (PAC certificate of OEM & user departments, specifications and quotation) are being uploaded on AIIMS website for 15 days for open information to submit objections, comments, suggestions, if any, by any manufacturer/supplier regarding proprietary nature of the equipment/consumables/Item within issue of 15 days by mentioning reference **T. No.289/CNC/PAC/CP/2023-24/St.** The comments should be received in office of Stores Officer (CNC), 1st Floor, New Pvt. Ward, CNC, AIIMS, New Delhi-29 on or before **05.06.2024 upto 12.30 p.m.**, failing which it will be presumed that any other vendor is having no comment against above proposal and case will be processed further and decided on merits basis.

Yours faithfully,


STORES OFFICER, CNC, AIIMS.

ENCL: Related documents enclosed.

Quantity – 01.

Approx Price - 95,00,000/-

Droplet Digital Polymerase Chain Reaction System (PCR) Specification	
1	Table top model with latest state of the art technology.
2	Complete, ready to use, setup should be quoted and supplied, which should include Droplet generator, droplet reader, necessary start-up kit and consumables, Gradient enabled Thermal Cycler, PC System, Software, all essential accessories, consumables, attachments etc.
3	System should be able to : <ul style="list-style-type: none"> • 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 as well as standard curves. • 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	Sample size needed: 20 microliter
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.
9	Droplet generation should not take more than 3 minutes for 5-10 samples.
Droplet Reader:	
	1 No
10	Suitable for counting PCR positive and PCR negative droplets
11	Reading capacity: System should be capable of analyzing 1 to 96 samples in one go.
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	Two channel detection for FAM (Evagreen) and HEX (Vic) dyes.
16	The equipment must be able to read multiplexing assays run with probe base as well as dye base chemistry
17	The reader must be able to read fluorescence data from each single droplet individually.
Plate Sealer	
	1 No
18	Plate Sealer suitable for 96 well plate, with support block, sealing frame and power chord.
19	One pack of 100 nos. of compatible seals should be supplied.
Thermal Cycler:	
	1 No
21	Gradient 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
22	Model with graphical touch screen cum display should be provided
Software	
23	Software packages for droplet Digital PCR applications which may include features that provide 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 multiplex data per droplet for two channels, Computes Absolute quantitation (copies/μl) for each sample; performs

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MD, FRCPATH
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Dr. Sudheer Arava
Professor
AIIMS, Ansari Nagar
New Delhi-110029

Dr. Adarsh W. Barwad
Associate Professor
Department of Pathology
AIIMS, New Delhi

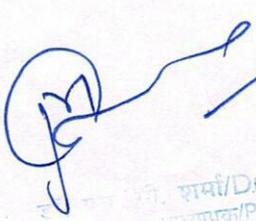
सहायक आयुक्त/Assistant Professor
असहायक प्रशासन विभाग/Dept. of Hospital Administration
अखिल भारतीय आयुर्विज्ञान संस्थान, दिल्ली
Ansari Nagar, New Delhi-110029

	copy number variation analysis, Calculates fractional abundance of mutant target in wild-type background for mutation detection; setting automatic/manual threshold values for entire sample plate or for individual samples, merging results from replicate wells, graphical and tabular representation of data, Data acquisition and analysis, report generation, export results, etc.	
24	Latest available, Licensed version of the software should be supplied. Auto up-gradation of the software without any extra cost.	
25	The software should not require manual setting of exposure & camera gain for the optics bench during run set up to avoid run to run variation.	
26	The Software should not use any reference dye to detect and count positive and negative droplets to avoid bias	
Computer		
27	Latest available and factory recommended computer workstations should be provided for control, acquisition + analysis, etc. Computer system should be inclusive of all required hardware, drivers, adequate storage and RAM modules, etc.	1 No
28	Computer system should have at least 12 th gen i7 processor preferably dedicated 4GB graphics card. It should have 16 GB of DDR4 RAM and at least 500GB if high speed SSD. Latest WIFI and LAN connection for data transfer. Operating system should be windows 10 pro or higher. Display should be at least 23 inch full HD LCD monitor.	
Consumables:		
29	Consumables Sufficient to run atleast 200 samples should be provided.	
30	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 must be available for the mutation detection and CNV analysis of more than 200 Oncology gene markers.	
Preferred parameters		
31	Flexibility to take Time-breaks during workflow; droplet generation-PCR-Readout	
32	No Special temperature window for instrument operation	
33	Flexibility to use small or high number of samples throughput without wasting consumables	
34	All Workflow components manufactured by same vendor for consistent performance delivery	
35	Warranty as per AIIMS policy	


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 Dr. Adarsh W. Barwad
 Associate Professor
 Dept. of Pathology
 AIIMS, New Delhi


 Dr. Medha Anand Raj
 सहायक आचार्य/Assistant Professor
 अस्पताल प्रशासन विभाग/Dept. of Hospital Administration
 अखिल भारतीय आयुर्विज्ञान संस्थान/A.I.M.S.
 आचार्य/Professor in-Charge
 तंत्रिका विज्ञान विभाग/Neuropathology Laboratory
 अ. पा.आ.सं. नई दिल्ली/AIIMS, New Delhi-110029



**ALL INDIA INSTITUTE OF MEDICAL SCIENCE
ANSARI, NAGAR NEW DELHI-110029.
(DEPARTMENT OF CARDIAC-PATHOLOGY)**

PROPRIETARY/SPECIFIC BRAND GOODS CERTIFICATE:

1.	Item/Type Model Number required along with specifications.	Droptlet Digital Polymerase Chain Reaction System (PCR)
a	Location of Installation	Department of Cardiac Pathology, CNC
2.	Is the item a spare part attachment or accessory for existing equipment.	No, it's an independent equipment and exempted in the GTE exemption list at Sr.No.93.
3.	Name of the manufactures/supplier of the item proposed by the indenter.	OEM:M/s.Bio-rad Laboratories Inc, USA. Supplier firm: M/s.ATCG India, Bhiwadi-301019 (Authorized distributor)
4.	Are the sole manufactures/sole distributors of the item?	M/s.Bio-rad Laboratories Inc, USA. (Sole manufacturer)
5.	It there any other item with similar/equipment specifications available in the market to meet the job requirement envisaged. If the answer is yes, why the same can't procured.	No. As per Proprietary Article Certificate letter dated 14.01.2022, The quoted equipment Model: QX200 DD PCR manufactured by M/s.Biorad is PAC items for various required features (Justification is enclosed in the proposal) and US patented (Patent certificate is also attached)
6.	What were the efforts made to locate alternative source of supply or use other substitutes.	Internet search. The required parameters to be used for patient care services is not available in the other available brand/models.
7.	Why open/limited tender can't be resorted to, for locating alter native source.	Being Proprietary features and patented product, no other brands/models will meet the required specifications.
8.	Are the proprietary items certifying that the rates are reasonable or not.	Will be ensure with previous orders and will be negotiated, if required.
9.	Any other justification for procuring item for single source.	No (as detailed in point no.5)

I certified that the item at Sr. No.1 above is required to be procured on PAC basis as the source of supply is definitely known which is meeting with functional requirement of department and tender system could be dispensed with as they would not serve useful purpose in the particular case and wasting of time.

TSEC:

(Signature)
डॉ. एम. सी. शर्मा/Dr. M.C. SHARMA
 प्रभारी प्राध्यापक/Professor In-Charge
 तंत्रिका विज्ञान विभाग/Neuropathology Laboratory
 अ.भा.आ.सं., नई दिल्ली/AIIMS, New Delhi-110029

(Signature)
डॉ. सुधीर अरावा/Dr. Sudheer Arava
 अध्यक्ष/Professor
 हृदय विकृति विज्ञान विभाग
 अ.भा.आ.सं., नई दिल्ली/A.I.I.M.S., New Delhi-110029

(Signature)
Dr. Adarsh W. Barwad
 Associate Professor
 Department of Pathology
 AIIMS, New Delhi

(Signature)
Dr. Charan Raj
 Assistant Professor
 Dept. of Pathology
 अ.भा.आ.सं., नई दिल्ली/Ansari Nagar, New Delhi-110029

(Signature)
Dr. RUMA RAY
 MD, FRC PATH
 Professor
 Department of Pathology
 AIIMS, New Delhi-110029

(AIIMS PURCHASE MANUAL FORMAT)

Proprietary Article Certificate (PAC)(Machinery & Equipment)

(i) The indented goods are manufactured by M/s. Bio-Rad Laboratories, Inc.

(ii) Item Name: Droplet Digital Polymerase Chain Reaction System (PCR)

(iii) Model No: QX200 ddPCR System

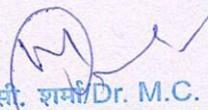
(iv) Vital Technical Performance Parameters required which makes the requirement proprietary ##: Detailed specification letter attached on read multiplexing data Annexure - III, it is a only product which is able to for dye based chemistry.

(v) No other make or model is acceptable for the following reasons: because no other firm has having automated digital droplet features ranging 1-96 samples detailed justification letter is attached.

It is certified that market survey has been done and found that no other manufacturer is manufacturing similar/equivalent specifications which can fulfill the vital requirements of end user.

Note: TSEC should clearly mention the vital functional parameters requirements which end user essentially require and are manufactured by only one manufacturer mentioned in serial No. (i) above.

Signature of TSEC with Name, Designation, Department and Hospital/Institute/DGHS:


डॉ. एम. सी. शर्मा / Dr. M.C. SHARMA
प्रभारी प्राध्यापक / Professor In-Charge
तंत्रिका विकृति विज्ञान प्रयोगशाला / Neuropathology Laboratory
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MD, FRC PATH
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हृद विकृति विज्ञान विभाग
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Dr. Anand Charan Raj
असहायक प्राध्यापक / Assistant Professor
असहायक प्रशासनिक अधिकारी / Asst. Admin. Officer
असहायक प्रशासनिक विभाग / Dept. of Hospital Administration
असहायक प्रशासनिक विभाग / Dept. of Hospital Administration
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 O: +91-9582929795
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QUOTATION

To The Chief CN Center All India Institute of Medical Sciences Ansari Nagar, New Delhi-110029	ATCG/23-24/OFF/1192 Date :12-02-2024
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Cat No	Product Description	Special Price (INR)	Qty	Total Price (INR)
1864004	QX200 ddPCR System W/O Laptop - Bio-Rad The QX200 Droplet Digital PCR (ddPCR) System provides absolute quantification of target DNA or RNA molecules for EvaGreen or probe based digital PCR applications. Specifications: Starting sample size, µl: 20 QX200 Droplet Generator capacity: 1-8 samples/cartridge Droplets per 20 µl sample: 20,000 QX200 droplet reader capacity: 1-96 samples Sample illumination: Light-emitting diodes Sample detection: Multi-pixel photon counter Detection channels:FAM (EvaGreen), HEX (VIC) Linear dynamic range: 5 orders of magnitude Precision: ±10% Droplets per 96-well plate, million: ~1.5 QX200 droplet generator dimensions (W x D x H): 28 x 36 x 13 cm (11 x 14 x 5") QX200 droplet reader dimensions (W x D x H): 66 x 52 x 29 cm (26 x 20 x 11")	83,90,000.00	1	83,90,000.00
698-3831	Extended warranty for QX200 ddPCR system per year	Included	4	Included
1814000	PX1 PCR Plate Sealer - Bio-Rad PCR plate sealer, includes heat sealing instrument, plate support block that holds 96-well and 384-well plates, sealing frame, power cord	Included	1	Included
12015392	PTC Tempo 96DW - Bio-Rad 96-well, thermal cycler for PCR with cables; for research use only. Features and Benefits: •Programmable thermal gradient — for optimization of annealing temperatures •Large touch screen — for streamlined protocol programming and editing •Heated and automated lid — for use with various vessels, sealer types, and for integration with automation robotics • Expanded connectivity — WiFi, ethernet, and USB •Cloud connectivity: Create and send protocols to the PTC Tempo Thermal Cycler from the BR.io cloud platform •Network storage drive access for excellent data management	Included	1	Included
1863004	DROPLET READER OIL,2x1000 ML/B	Included	1	Included
1863005	DROPLET GENERAT . OIL,10x7 ML/B	Included	2	Included
1864007	DG8 CRTRDGE GSKT,QX100/200 DG	Included	2	Included
1863052	2X BUFFER CONTRL KIT, 2x4.5ml	Included	2	Included
1864052	QX200 ddPCR EG BUFFER CONTROL	Included	2	Included
1864006	QX200 DRPLT GENERATN OIL,10X7	Included	2	Included
1863010	ddPCR SUPERMIX/PROBE, 500 RXNS	Included	2	Included
1864040	ddPCR Supermix for RDQ, 10 x 5	Included	2	Included
1863053	DD FLUIDIC VERIF RGNTS	Included	2	Included
10028179	DD SPECTRAL CALIBR FAM/VIC/HEX	Included	2	Included
12001925	ddPCR Plates 96-Well,Semi-Skirted	Included	2	Included
1864034	QX200 EVAGREEN ddPCR SMX,500RX	Included	2	Included
1863038	DROPLET DIGITAL FAM OQ REAGENT	Included	2	Included
HSP9601	HSP-96,WHT/CLR 50/BX	Included	2	Included
MSB1001	MICROSEAL B ADHES SEAL,100/PK	Included	2	Included
NPN	Branded Computer i7, 1TB Hard Disk	Included	1	Included
NPN	Set of 3 Eppendorf Pipette with Tip Box	Included	1	Included
NPN	Plate Centrifuge	Included	1	Included
NPN	2KVA Online UPS	Included	1	Included
Total Special Price				83,90,000.00
IGST@18%				15,10,200.00
Net FOR Destination				99,00,200.00

Continue.....

Optional - AMC Charges

Description	Unit Price (INR)	Qty	Total Price (INR)
AMC for 6th Year after completion of warranty period	88,200.00	1	88,200.00
AMC for 7th Year after completion of warranty period	88,200.00	1	88200.00
AMC for 8th Year after completion of warranty period	88,200.00	1	88200.00
AMC for 9th Year after completion of warranty period	88,200.00	1	88200.00
AMC for 10th Year after completion of warranty period	88,200.00	1	88200.00

IGST@18% extra

Optional - CMC Charges

Description	Unit Price (INR)	Qty	Total Price (INR)
CMC for 6th Year after completion of warranty period	2,35,300.00	1	2,35,300.00
CMC for 7th Year after completion of warranty period	2,35,300.00	1	235300.00
CMC for 8th Year after completion of warranty period	2,35,300.00	1	235300.00
CMC for 9th Year after completion of warranty period	2,35,300.00	1	235300.00
CMC for 10th Year after completion of warranty period	2,35,300.00	1	235300.00

IGST@18% extra

Terms and Conditions:

- 1 **Validity:** 60 Days
- 2 **Order :** To be placed in favour of ATCG INDIA
- 3 **Payment:** 100% within 30 days after installation
- 4 **Delivery:** 4-6 weeks from the date we receive your confirm order
- 5 **Warranty:** 5 Years
- 6 **Make:** Bio-Rad
- 7 **Country of Origin:** USA
- 8 **Bank Details:**

Beneficiary's Name: ATCG INDIA
Bank Name : HDFC Bank LTD.
Branch Name : Aggarwal Arcade, Neelam Chowk, Bhiwadi-301019
Company's A/C NO : 01682560004546
IFSC / RTGS Code : HDFC0005460

FOR ATCG INDIA

AUTHORIZED SIGNATORY

List of Essential Consumables

Cat#	Description	Unit Price
1863004	DROPLET READER OIL,2x1000 ML/B	1,06,445.00
1863005	DROPLET GENERAT . OIL,10x7 ML/B	26,585.00
1864007	DG8 CRTRDGE GSKT,QX100/200 DG	1,25,830.00
1863052	2X BUFFER CONTRL KIT, 2x4.5ml	21,815.00
1864052	QX200 ddPCR EG BUFFER CONTROL	23,180.00
1864006	QX200 DRPLT GENERATN OIL,10X7	25,125.00
1863010	ddPCR SUPERMIX/PROBE, 500 RXNS	41,100.00
1864040	ddPCR Supermix for RDQ, 10 x 5	3,97,645.00
1863053	DD FLUIDIC VERIF RGNTS	96,805.00
10028179	DD SPECTRAL CALIBR FAM/VIC/HEX	72,498.00
12001925	ddPCR Plates 96-Well,Semi-Skirted	13,050.00
1864034	QX200 EVAGREEN ddPCR SMX,500RX	43,535.00
1863038	DROPLET DIGITAL FAM OQ REAGENT	48,400.00
HSP9601	HSP-96,WHT/CLR 50/BX	15,780.00
MSB1001	MICROSEAL B ADHES SEAL,100/PK	20,450.00
Total Unit Price		10,78,243.00
IGST extra as applicable		



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To
The Chief
CN Center
All India Institute of Medical Sciences -New Delhi
New Delhi-110029

FALL CLAUSE CERTIFICATE

With this certificate, We ATCG INDIA hereby certify that we have not supplied the items quoted in this bid to any government organization or any other institutes in the prices lower that quoted to you under such rate contract or similar configuration.

For ATCG INDIA



Authorized Signatory

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To
The Chief
CN Center
All India Institute of Medical Sciences -New Delhi
New Delhi-110029

FORMAT FOR LAND BORDER DECLARATION

This is to certify that ATCG INDIA a bidder of a country which not shares a land border with India, any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority. While participating in bid, We undertake compliance of this and any false declaration and non-compliance of this would be a ground for immediate termination of the contract and further legal action in accordance with the laws.

For ATCG INDIA



(Authorized Signatory)



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

Registered & Head Office:
9th Floor, Tower-A, EMAAR Digital Greens,
Sector-61, Golf Course Extension Road
Gurgaon-122102, Haryana, INDIA.
Tel: +91-124-4029300
E-mail: sales.india@bio-rad.com
Tech Support: 1800-183-1224, 09873177477
www.bio-rad.com



ISO 9001:2015



GST No.: 06AAACB3202A1ZR
CIN No.: U32109HR1996PTC107956

Ref. # LSG/N/24/0097
Date: 13th February 2024

To,
The Chief, CN Center,
AIIMS, Ansari Nagar,
New Delhi-110 029,

Sub.: Authorization to supply Bio-Rad's products

Ref.: Quotation no. ATCG/23-24/OFF/1192 Date :12-02-2024.

Dear Sir,

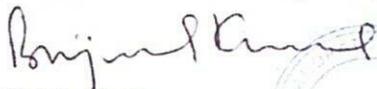
We, Bio-Rad Laboratories (India) Private Limited, having its registered office at 9th Floor, Tower A, EMAAR Digital Greens, Sector 61, Golf Course Extension Road, Gurgaon – 122 102, Haryana, is a subsidiary of Bio-Rad Laboratories Inc., having its office at 1000 Alfred Nobel Drive, Hercules, California 94547, United States of America, who is proven and reputable manufacturer of diagnostics instruments and reagents having manufacturing facilities at United States of America, France and Switzerland.

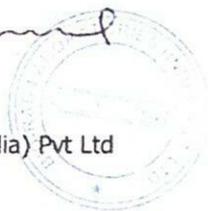
We herewith authorize **ATCG INDIA, A206 Tower Spectrum, BDI City, Bhiwadi-301019**, to quote, supply and raise invoice for our life sciences product range to your esteemed institute for the above-mentioned ref no: **ATCG/23-24/OFF/1192 Date :12-02-2024.**

We assure you that in the event we replace our dealer/authorized distributor, we will continue to provide all the product(s) and service(s) as assured in the tender document and are also as required by the Principal, as the case may be, through our new dealer/authorized distributor or directly, as may be required.

Thanking you and assuring our best services always.

Your faithfully
For **Bio-Rad Laboratories (India) Private Limited**


Brijender Kumar
Commercial Director
Bio-Rad Laboratories (India) Pvt Ltd





Bio-Rad
Laboratories

Life Science Group
2000 Alfred Nobel Drive
Hercules, California 94547
Telephone: 510-741-1000
Facsimile: 510-741-5800

Annexure-III

Proprietary Article Certificate (PAC) from the firm

Proprietary Article Certificate is provided by the Bio-Rad Laboratories, Inc., Life Science Group, 2000 Alfred Nobel Drive, Hercules, California 94547, OEM before procuring the goods from a single source under the provision of sub Rule 166 (i) and 166 (iii) as applicable.

- (i) Bio-Rad Laboratories, Inc., Life Science Group, 2000 Alfred Nobel Drive, Hercules, California 94547 is the sole manufacturer of the indented goods; QX200 Droplet Digital PCR System & accessories .
- (ii) The QX200 Droplet Digital PCR System is unique for the following reasons:-
 - 1) The QX200 Droplet Digital PCR System –1864001 (including the QX200 Droplet Generator-1864002 and the QX200 Droplet Reader-1864003) and the QX200 AutoDG Droplet Digital PCR System-1864100 (including the QX200 Automated Droplet Generator-1864101 and the QX200 Droplet Reader-1864003) with accessories are provided by the single vendor only, Bio-Rad Laboratories, Inc., Life Science Group, 2000 Alfred Nobel Drive, Hercules, California 94547 U.S.A.
 - 2) QX200 Droplet Digital PCR System includes dynamic partitioning method which offers randomized distribution of DNA/RNA samples withing droplets .
 - 3) Highest number of recorded publications across more than 15 application areas (5900 as of Dec 2021).
 - 4) U.S. FDA-approved IVD kits are available for selected IVD clinical applications with a pipeline of future kits
 - 5) QX200 Droplet Digital PCR System offers flexible sample throughput, ranging from 1 sample to 96 sample/ run
 - 6) Post PCR, droplet-based amplification products can be recovered for other orthogonal testing
 - 7) QX200 Droplet Digital PCR System can easily scale to quantify target concentrations as low as one out of 1,000,000 (0.0001%) total copies
 - 8) QX200 is the only droplet digital PCR system which allows reading every single droplet individually to improves data quality. This is unique feature in QX200 Droplet Digital PCR System, where as other digital PCR technologies do data acquisition by imaging all partitions simultaneously.
 - 9) Only QX200 Droplet Digital PCR System workflow allows integrating a deep well gradient PCR which is essential for assay optimization in the QX200 Droplet Digital PCR workflow.

The above tangible benefits contributed by the Bio-Rad's QX200 Droplet Digital PCR Systems and processes are protected by the following U.S. patents: US9156010, US9417190, US9216392, US9126160, US9598725, US9500664, US9132394, US9089844, and US9764322.



Bio-Rad
Laboratories

Life Science Group
2000 Alfred Nobel Drive
Hercules, California 94547
Telephone: 510-741-1000
Facsimile: 510-741-5800

The QX200 Droplet Digital PCR System and the QX200 AutoDG Droplet Digital PCR Systems, with unique features as mentioned through para B, No. 1 to 9 are covered by the patents mentioned above. No other companies in the world are manufacturing the QX200 Droplet Digital PCR System or the QX200 AutoDG Droplet Digital PCR System.

- (iii) Concurrence of finance wing of the OEM: Bio-Rad Laboratories, Inc., Life Science Group, 2000 Alfred Nobel Drive, Hercules, California 94547 to the proposal vide Ref. No. BRH/RA/PG/2022/003. Dated: January 14, 2022. for issuing this PAC.
- (iv) Approval of the component authority of the OEM: Bio-Rad Laboratories, Inc., Life Science Group, 2000 Alfred Nobel Drive, Hercules, California 94547.

Authorized Signature:

Name: Patricia Gee Job Title: Regulatory Affairs, Representative

Signature:  Date: January 14, 2022

Justification for Proprietary Article Certificate Procurement

No other make/brand will be suitable for following tangible reasons:

- 1) Dynamic partitioning method offers randomized distribution of analytes, which are compromised at other Digital PCR systems.
- 2) Highest number of recorded publications across more than 15 application areas (6300 as of July 2022).
- 3) US FDA approved IVD kits are available for selected IVD clinical applications with a pipeline of future kits under license.
- 4) Wide sample throughput ranges from 1 sample to 96 sample/run.
- 5) Post PCR, droplet-based amplification products can be recovered for other orthogonal testing.
- 6) QX200 Digital Droplet PCR System can easily scale to quantify target concentrations as low as one out of 1,000,000 (0.0001%) total copies.
- 7) QX200 is the only digital PCR which allows reading every single partition individually.
- 8) Only QX200 workflow allows using a gradient PCR which is essential for assay optimization.

The above tangible benefits contributed by the Bio-Rad's QX200 Droplet Digital PCR processes are protected by the following U.S. patents:

US9156010, US9417190, US9216392, US9126160, US9598725, US9500664, US9132394, US9089844, US9907927, US9764322.

These patents associated with Digital Droplet PCR are the sole consideration for the work intended with this purchase.

History of PAC purchases of this item for past three years may be given below			
Name of the Supplier	Bio-Rad Laboratories (India) Pvt Ltd or an Authorized dealer		
Order/Tender Reference& Date	Quantity Ordered	Basic Rate on Order(Rs.)	Adverse Performance Reported if Any
ICMR-NIRRH order # B-13013/01/2017-2018/03	1	USD 1,15,135	None
Admn/Prop/43/2019-AIIMS.JDH AIIMS/RES/2019/4022	1	INR 69,30,000	None
S.O 632/RPC/SSK/2019-20 (M&E Plan)	1	INR 67,00,000	None
GEM-511687701904839, Dated 29/4/2022	1	INR 67,00,000	None


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US009089844B2

(12) **United States Patent**
Hiddessen et al.

(10) **Patent No.:** **US 9,089,844 B2**
(45) **Date of Patent:** **Jul. 28, 2015**

(54) **SYSTEM FOR FORMING EMULSIONS**

(75) **Inventors:** **Amy L. Hiddessen**, Dublin, CA (US);
Donald A. Masquelier, Tracy, CA (US);
Kevin D. Ness, San Mateo, CA (US);
Benjamin J. Hindson, Livermore, CA
(US); **Anthony J. Makarewicz, Jr.**,
Livermore, CA (US); **Erin R. Chia**,
Berkeley, CA (US)

(73) **Assignee:** **Bio-Rad Laboratories, Inc.**, Hercules,
CA (US)

(*) **Notice:** Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 701 days.

(21) **Appl. No.:** **13/287,120**

(22) **Filed:** **Nov. 1, 2011**

(65) **Prior Publication Data**

US 2012/0152369 A1 Jun. 21, 2012

Related U.S. Application Data

(60) Provisional application No. 61/409,106, filed on Nov.
1, 2010, provisional application No. 61/409,473, filed
on Nov. 2, 2010, provisional application No.
61/410,769, filed on Nov. 5, 2010.

(51) **Int. Cl.**
C12Q 1/68 (2006.01)
B01L 3/00 (2006.01)
(Continued)

(52) **U.S. Cl.**
CPC **B01L 3/502784** (2013.01); **G01N 1/38**
(2013.01); **B01F 3/0807** (2013.01); **B01F**
13/0062 (2013.01); **B01F 13/1022** (2013.01);
B01L 3/502761 (2013.01); **B01L 2200/0605**
(2013.01); **B01L 2200/0673** (2013.01); **B01L**
2300/0867 (2013.01); **B01L 2400/0487**
(2013.01); **G01N 2035/1046** (2013.01)

(58) **Field of Classification Search**

CPC **B01F 3/0807**; **B01F 13/0059**; **B01F**
13/0062; **B01F 13/0066**; **B01F 13/1013**;
B01F 13/1016; **B01F 17/00**; **B01F 2005/0022**;
B01F 5/045; **B01F 5/0471**; **B01F 5/0473**;
B01F 5/0483; **B01F 5/0646**; **B01F 5/0653**
See application file for complete search history.

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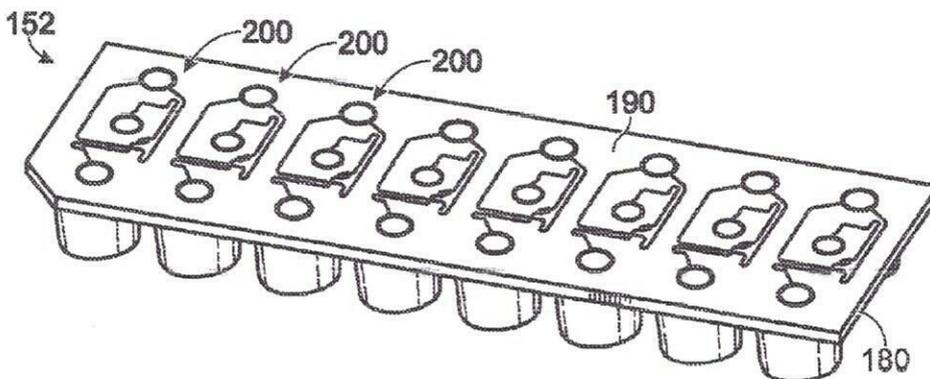
Primary Examiner — Sally Merkling

(74) *Attorney, Agent, or Firm* — Kolisch Hartwell, P.C.

(57) **ABSTRACT**

System, including methods, apparatus, and kits, for forming
emulsions. The system may include an instrument and a
microfluidic chip received by the instrument. The instrument
may apply pressure to prospective emulsion phases held by
the chip, to drive formation and collection of emulsions in
the chip. In some embodiments, the instrument may stop apply-
ing pressure to the chip when a change in pressure meeting a
predefined condition is detected by the instrument. The
change may indicate that an endpoint of droplet generation
has been reached.

15 Claims, 12 Drawing Sheets





US009598725B2

(12) **United States Patent**
Hiddessen et al.

(10) **Patent No.:** **US 9,598,725 B2**
(45) **Date of Patent:** **Mar. 21, 2017**

- (54) **EMULSION CHEMISTRY FOR ENCAPSULATED DROPLETS**
- (75) Inventors: **Amy L. Hiddessen**, Dublin, CA (US); **Benjamin J. Hindson**, Livermore, CA (US)
- (73) Assignee: **Bio-Rad Laboratories, Inc.**, Hercules, CA (US)
- (* Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 577 days.
- (21) Appl. No.: **12/976,827**
- (22) Filed: **Dec. 22, 2010**
- (65) **Prior Publication Data**
US 2011/0217712 A1 Sep. 8, 2011

Related U.S. Application Data

- (60) Provisional application No. 61/309,845, filed on Mar. 2, 2010, provisional application No. 61/341,218, filed on Mar. 25, 2010, provisional application No. 61/317,635, filed on Mar. 25, 2010, provisional application No. 61/380,981, filed on Sep. 8, 2010, provisional application No. 61/409,106, filed on Nov. 1, 2010, provisional application No. 61/409,473, filed on Nov. 2, 2010, provisional application No. 61/410,769, filed on Nov. 5, 2010, provisional application No. 61/417,241, filed on Nov. 25, 2010.
- (51) **Int. Cl.**
C12Q 1/68 (2006.01)
C12P 19/34 (2006.01)
- (52) **U.S. Cl.**
CPC **C12Q 1/6848** (2013.01); **C12Q 1/6846** (2013.01)
- (58) **Field of Classification Search**
None
See application file for complete search history.

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Young, Lee W., Authorized officer, International Searching Authority, "International Search Report", PCT Application No. PCT/US2011/26901; mail date: May 6, 2010.

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Primary Examiner — David Thomas
(74) *Attorney, Agent, or Firm* — Morgan, Lewis & Bockius LLP

(57) ABSTRACT

System, including methods, apparatus, compositions, and kits, for making and using a stabilized emulsion. A method of generating a stabilized emulsion is provided. In the method, an aqueous phase may be provided. The aqueous phase may include an effective concentration of one or more skin-forming proteins. An emulsion may be formed. The emulsion may include droplets of a dispersed phase disposed in a continuous phase, with the aqueous phase being the continuous phase or the dispersed phase. The emulsion may be heated to create an interfacial skin between each droplet and the continuous phase, to transform the droplets into capsules.

19 Claims, 4 Drawing Sheets



US009500664B2

(12) **United States Patent**
Ness et al.

(10) **Patent No.:** US 9,500,664 B2
(45) **Date of Patent:** Nov. 22, 2016

- (54) **DROPLET GENERATION FOR DROPLET-BASED ASSAYS**
- (75) Inventors: **Kevin D. Ness**, Pleasanton, CA (US); **Christopher F. Kelly**, Larkspur, CA (US); **Donald A. Masquelier**, Tracy, CA (US)
- (73) Assignee: **Bio-Rad Laboratories, Inc.**, Hercules, CA (US)
- (*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 417 days.

(21) Appl. No.: 13/341,669

(22) Filed: Dec. 30, 2011

(65) **Prior Publication Data**

US 2012/0190032 A1 Jul. 26, 2012

Related U.S. Application Data

(63) Continuation of application No. PCT/US2011/030101, filed on Mar. 25, 2011.
(Continued)

(51) **Int. Cl.**
B01L 3/00 (2006.01)
G01N 35/08 (2006.01)
(Continued)

(52) **U.S. Cl.**
CPC *G01N 35/085* (2013.01); *B01L 3/502715* (2013.01); *B01L 3/502723* (2013.01);
(Continued)

(58) **Field of Classification Search**
CPC *G01N 35/085*; *G01N 35/1065*; *G01N 2035/00148*; *G01N 2035/1034*; *B01L*
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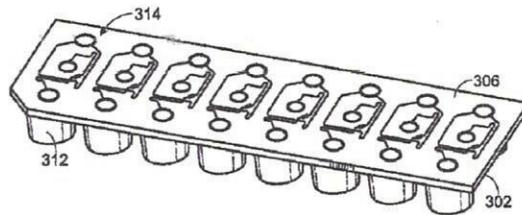
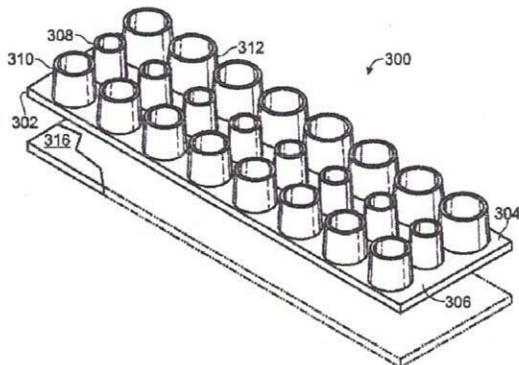
Primary Examiner — Dennis M White

(74) *Attorney, Agent, or Firm* — Kolisch Hartwell, P.C.

(57) **ABSTRACT**

A system, including method and apparatus, for generating droplets suitable for droplet-based assays. The disclosed systems may include either one-piece or multi-piece droplet generation components configured to form sample-containing droplets by merging aqueous, sample-containing fluid with a background emulsion fluid such as oil, to form an emulsion of sample-containing droplets suspended in the background fluid. In some cases, the disclosed systems may include channels or other suitable mechanisms configured to transport the sample-containing droplets to an outlet region, so that subsequent assay steps may be performed.

16 Claims, 23 Drawing Sheets





US009417190B2

(12) **United States Patent**
Hindson et al.

(10) **Patent No.:** **US 9,417,190 B2**
(45) **Date of Patent:** **Aug. 16, 2016**

(54) **CALIBRATIONS AND CONTROLS FOR DROPLET-BASED ASSAYS**

(71) Applicant: **Bio-Rad Laboratories, Inc.**, Hercules, CA (US)

(72) Inventors: **Benjamin J. Hindson**, Livermore, CA (US); **Billy W. Colston, Jr.**, San Ramon, CA (US); **Kevin D. Ness**, Pleasanton, CA (US); **Donald A. Masquelier**, Tracy, CA (US)

(73) Assignee: **Bio-Rad Laboratories, Inc.**, Hercules, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 93 days.

(21) Appl. No.: **13/945,661**

(22) Filed: **Jul. 18, 2013**

(65) **Prior Publication Data**

US 2013/0302792 A1 Nov. 14, 2013

Related U.S. Application Data

(63) Continuation-in-part of application No. 13/251,016, filed on Sep. 30, 2011, now abandoned, and a continuation-in-part of application No. 13/245,575, filed on Sep. 26, 2011, now abandoned, and a continuation-in-part of application No. 12/976,827, filed on Dec. 22, 2010, said application No. 13/245,575 is a continuation of application No. 12/586,626, filed on Sep. 23, 2009, now Pat. No. 9,156,010.

(60) Provisional application No. 61/194,043, filed on Sep. 23, 2008, provisional application No. 61/206,975, filed on Feb. 5, 2009, provisional application No. 61/271,538, filed on Jul. 21, 2009, provisional application No. 61/275,731, filed on Sep. 1, 2009, provisional application No. 61/277,200, filed on Sep. 21, 2009, provisional application No. 61/277,203, filed on Sep. 21, 2009, provisional application No. 61/277,204, filed on Sep. 21, 2009, provisional application No. 61/277,216, filed on Sep. 21, 2009, provisional application No. 61/277,249, filed on Sep. 21, 2009, provisional application No. 61/277,270, filed on Sep. 22, 2009, provisional application No. 61/309,845, filed on Mar. 2, 2010, provisional application No. 61/341,218, filed on Mar. 25, 2010, provisional application No. 61/317,635, filed on Mar. 25, 2010, provisional application No. 61/380,981, filed on Sep. 8, 2010, provisional application No. 61/409,106, filed on Nov. 1, 2010, provisional application No. 61/409,473, filed on Nov. 2, 2010, provisional application No. 61/410,769, filed on Nov. 5, 2010, provisional application No. 61/417,241, filed on Nov. 25, 2010.

(51) **Int. Cl.**
C12Q 1/68 (2006.01)
G01N 21/64 (2006.01)

(52) **U.S. Cl.**

CPC **G01N 21/6486** (2013.01); **C12Q 1/6848** (2013.01); **G01N 21/6428** (2013.01); **G01N 21/6456** (2013.01); **G01N 2021/6441** (2013.01); **G01N 2201/1242** (2013.01)

(58) **Field of Classification Search**

CPC C12Q 1/6848; C12Q 2545/101; C12Q 2563/107; C12Q 2563/159
USPC 435/6.1
See application file for complete search history.

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5,176,203	A	1/1993	Larzul
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Primary Examiner — Cynthia B Wilder

(74) *Attorney, Agent, or Firm* — Kolisch Hartwell, P.C.

(57) **ABSTRACT**

System, including methods and apparatus, for performing droplet-based assays that are controlled and/or calibrated using signals detected from droplets.

5 Claims, 15 Drawing Sheets



US009216392B2

(12) **United States Patent**
Hindson et al.

(10) **Patent No.:** **US 9,216,392 B2**
(45) **Date of Patent:** ***Dec. 22, 2015**

(54) **SYSTEM FOR FORMING AN ARRAY OF EMULSIONS**

(75) Inventors: **Benjamin Joseph Hindson**, Livermore, CA (US); **Kevin Dean Ness**, Pleasanton, CA (US); **Billy Wayne Colston, Jr.**, San Ramon, CA (US); **Fred Paul Milanovich**, Danville, CA (US); **Donald Arthur Masqueller**, Tracy, CA (US); **Anthony Joseph Makarewicz, Jr.**, Livermore, CA (US)

(73) Assignee: **Bio-Rad Laboratories, Inc.**, Hercules, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 1363 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **12/962,507**

(22) Filed: **Dec. 7, 2010**

(65) **Prior Publication Data**

US 2011/0092392 A1 Apr. 21, 2011

Related U.S. Application Data

(63) Continuation of application No. 12/586,626, filed on Sep. 23, 2009.

(60) Provisional application No. 61/194,043, filed on Sep. 23, 2008, provisional application No. 61/206,975,

(Continued)

(51) **Int. Cl.**
C12M 1/34 (2006.01)
C12M 3/00 (2006.01)

(Continued)

(52) **U.S. Cl.**
CPC **B01F 3/0807** (2013.01); **B01F 13/0062** (2013.01); **B01L 3/0241** (2013.01);

(Continued)

(58) **Field of Classification Search**

CPC B01F 3/0807; B01L 3/0241; B01L 3/502784; B01L 7/52; B01L 7/525; B01L 2300/0816; B01L 2300/0819; B01L 2400/1822; B01L 2400/0478; B01L 2400/0487; B01L 2400/0622; B01L 2200/0689; B01N 21/3563
USPC 435/287.2; 506/23, 40
See application file for complete search history.

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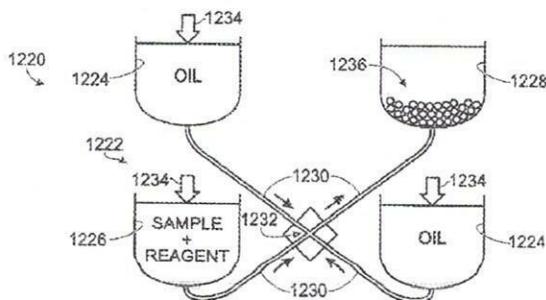
Primary Examiner — Michael Hobbs

(74) *Attorney, Agent, or Firm* — Kolisch Hartwell, P.C.

(57) **ABSTRACT**

System, including apparatus and methods, for forming an array of emulsions. The system may comprise a plate including an array of emulsion production units. Each unit may include at least one first input well, a second input well, and an output well connected to the first and second input wells by channels that form a droplet generator. The system also may comprise a vacuum or pressure source configured to be connected operatively to wells of the plate to form a pressure drop between the input wells and the output well of each unit that is capable of driving a first fluid and a second fluid from respective first and second input wells of such unit and through the droplet generator, for collection as an emulsion in the output well of such unit.

21 Claims, 65 Drawing Sheets





US009156010B2

(12) **United States Patent**
Colston, Jr. et al.

(10) **Patent No.:** **US 9,156,010 B2**
(45) **Date of Patent:** **Oct. 13, 2015**

(54) **DROPLET-BASED ASSAY SYSTEM**

(75) Inventors: **Billy Wayne Colston, Jr.**, San Ramon, CA (US); **Benjamin Joseph Hindson**, Livermore, CA (US); **Kevin Dean Ness**, San Mateo, CA (US); **Donald Arthur Masqueller**, Tracy, CA (US); **Fred Paul Milanovich**, Danville, CA (US); **Douglas N. Modlin**, Livermore, CA (US); **Vincent Riot**, Oakland, CA (US); **Samuel Burd**, Oakland, CA (US); **Anthony Joseph Makarewicz, Jr.**, Livermore, CA (US); **Phillip Belgrader**, Severna Park, MD (US)

(73) Assignee: **Bio-Rad Laboratories, Inc.**, Hercules, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 451 days.

(21) Appl. No.: **12/586,626**

(22) Filed: **Sep. 23, 2009**

(65) **Prior Publication Data**

US 2010/0173394 A1 Jul. 8, 2010

Related U.S. Application Data

(60) Provisional application No. 61/194,043, filed on Sep. 23, 2008, provisional application No. 61/206,975, filed on Feb. 5, 2009, provisional application No. 61/271,538, filed on Jul. 21, 2009, provisional

(Continued)

(51) **Int. Cl.**
C12M 1/34 (2006.01)
C12M 3/00 (2006.01)

(Continued)

(52) **U.S. Cl.**
CPC **B01F 3/0807** (2013.01); **B01F 13/0062** (2013.01); **B01L 3/0241** (2013.01);

(Continued)

(58) **Field of Classification Search**

CPC .. B01F 3/807; B01F 3/0241; B01F 3/502784; B01F 7/525; B01F 13/0062; B01F 2300/0816; B01F 2300/0819; B01F 2300/1822; B01F 2400/0478; B01F 2400/0487; B01F 2400/0622; B01F 2400/0689

USPC 435/287.2
See application file for complete search history.

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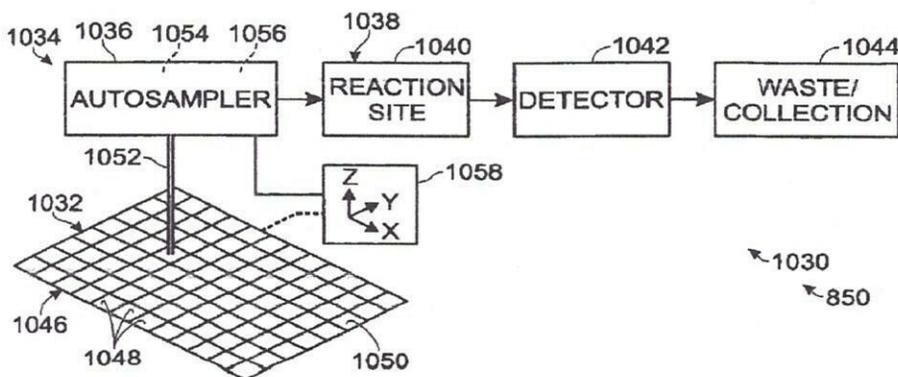
Primary Examiner — Michael Hobbs

(74) *Attorney, Agent, or Firm* — Kolisch Hartwell, P.C.

(57) **ABSTRACT**

Systems, including apparatus and methods, for performing assays. These systems may involve separating sample components by partitioning them into droplets or other partitions, amplifying or otherwise reacting the components within the droplets, detecting the amplified components, or characteristics thereof, and/or analyzing the resulting data, among others.

28 Claims, 65 Drawing Sheets





US 20170056886A1

(19) **United States**

(12) **Patent Application Publication**
Hiddessen et al.

(10) **Pub. No.: US 2017/0056886 A1**

(43) **Pub. Date: Mar. 2, 2017**

(54) **SYSTEM FOR GENERATING DROPLETS - INSTRUMENTS AND CASSETTE**

C12Q 1/68 (2006.01)
B01F 3/08 (2006.01)

(71) Applicant: **Bio-Rad Laboratories, Inc.**, Hercules, CA (US)

(52) **U.S. Cl.**
CPC *B01L 3/502784* (2013.01); *B01F 3/0807* (2013.01); *B01F 13/0062* (2013.01); *C12Q 1/6806* (2013.01); *B01L 3/502715* (2013.01); *B01L 3/50273* (2013.01); *B01F 2003/0834* (2013.01); *B01F 2003/0842* (2013.01); *B01F 2215/0037* (2013.01); *B01L 2300/0867* (2013.01); *B01L 2300/0609* (2013.01); *B01L 2200/025* (2013.01); *B01L 2400/0487* (2013.01); *B01L 2200/143* (2013.01); *B01L 2200/0673* (2013.01)

(72) Inventors: **Amy L. Hiddessen**, Tracy, CA (US); **Donald A. Masquellier**, Tracy, CA (US); **Kevin D. Ness**, Pleasanton, CA (US); **Benjamin J. Hindson**, Livermore, CA (US); **Anthony J. Makarewicz, JR.**, Livermore, CA (US); **Erin R. Chia**, Berkeley, CA (US)

(21) Appl. No.: **15/351,335**

(57) **ABSTRACT**

(22) Filed: **Nov. 14, 2016**

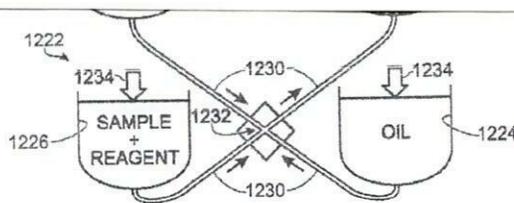
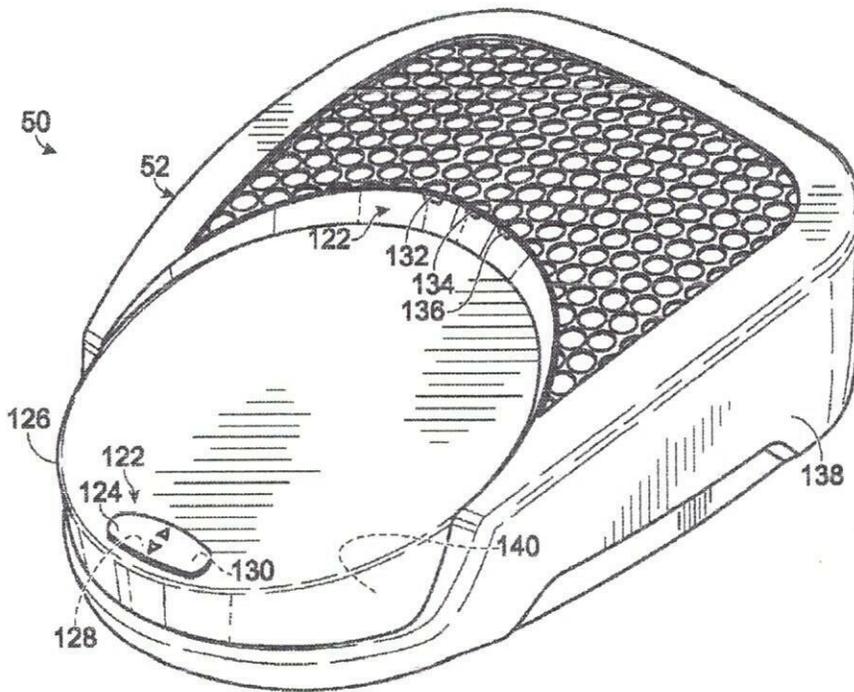
Related U.S. Application Data

(63) Continuation of application No. 14/159,410, filed on Jan. 20, 2014, now Pat. No. 9,492,797, which is a continuation-in-part of application No. 13/287,120, filed on Nov. 1, 2011, now Pat. No. 9,089,844.
(60) Provisional application No. 61/409,106, filed on Nov. 1, 2010, provisional application No. 61/409,473, filed on Nov. 2, 2010, provisional application No. 61/410,769, filed on Nov. 5, 2010.

System, including methods, apparatus, and kits, for forming emulsions. An exemplary system may comprise a device including a sample well configured to receive sample-containing fluid, a continuous-phase well configured to receive continuous-phase fluid, and a droplet well. The device also may include a channel network having a first channel, a second channel, and a third channel that meet one another in a droplet-generation region. The system also may comprise a holder for the device. The system further may comprise an instrument configured to operatively receive an assembly including the device and the holder and to drive sample-containing fluid from the sample well to the droplet-generation region via the first channel, continuous-phase fluid from the continuous-phase well to the droplet-generation region via the second channel, and sample-containing droplets from the droplet-generation region to the droplet well via the third channel.

Publication Classification

(51) **Int. Cl.**
B01L 3/00 (2006.01)
B01F 13/00 (2006.01)





US009126160B2

(12) **United States Patent**
Ness et al.

(10) **Patent No.:** US 9,126,160 B2
(45) **Date of Patent:** *Sep. 8, 2015

(54) **SYSTEM FOR FORMING AN ARRAY OF EMULSIONS**

(75) **Inventors:** Kevin D. Ness, San Mateo, CA (US); Benjamin J. Hindson, Livermore, CA (US); Billy W. Colston, Jr., San Ramon, CA (US); Donald A. Masquelier, Tracy, CA (US)

(73) **Assignee:** Bio-Rad Laboratories, Inc., Hercules, CA (US)

(*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 1279 days.

This patent is subject to a terminal disclaimer.

(21) **Appl. No.:** 12/963,523

(22) **Filed:** Dec. 8, 2010

(65) **Prior Publication Data**

US 2011/0086780 A1 Apr. 14, 2011

Related U.S. Application Data

(63) Continuation of application No. 12/586,626, filed on Sep. 23, 2009.

(60) Provisional application No. 61/194,043, filed on Sep. 23, 2008, provisional application No. 61/206,975,

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(51) **Int. Cl.**
C12M 1/34 (2006.01)
C12M 3/00 (2006.01)

(Continued)

(52) **U.S. Cl.**
CPC B01F 3/0807 (2013.01); B01F 13/0062 (2013.01); B01L 3/0241 (2013.01);

(Continued)

(58) **Field of Classification Search**

CPC B01F 3/0807; B01F 3/0062; B01L 3/0241; B01L 3/502784; B01L 7/52; B01L 7/525; B01L 2300/0816; B01L 2300/0819; B01L 2400/1822; B01L 2400/0478; B01L 2400/0487; B01L 2400/0622; B01L 2200/0689; G01N 21/3563
USPC 435/287.2; 506/23, 40
See application file for complete search history.

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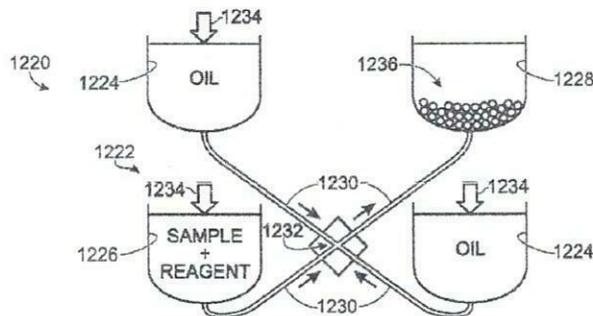
Primary Examiner — Michael Hobbs

(74) *Attorney, Agent, or Firm* — Kolisch Hartwell, P.C.

(57) **ABSTRACT**

A system, including method and apparatus, for forming an array of emulsions. The system may include a plate providing an array of emulsion production units each configured to produce a separate emulsion and each including a set of wells interconnected by channels that intersect to form a site of droplet generation. Each set of wells, in turn, may include (1) at least one first input well to receive a continuous phase, (2) a second input well to receive a dispersed phase, and (3) an output well configured to receive from the site of droplet generation an emulsion of droplets of the dispersed phase disposed in the continuous phase.

21 Claims, 65 Drawing Sheets



ALL INDIA INSTITUTE OF MEDICAL SCIENCES
ANSARI NAGAR, NEW DELHI - 110029
STORE SECTION (CNC)

Tender Number: 289/CNC/PAC/CP/22-23/ST.

Date: 18/04/2024

CIRCULAR

Subject: Meeting for purchase of Droplet Digital Polymerase Chain Reaction System (PCR) – 01 No. against tender number 289/CNC/PAC/CP/22-23/ST. for the department of Cardiac Pathology, CNC, AIIMS, New Delhi-29- reg.

It is informed that the Director, AIIMS has constituted a committee to evaluate justification of requirement, reason for single bid, specs generalization etc. for the purchase of Droplet Digital Polymerase Chain Reaction System (PCR) – 01 No. against tender number 289/CNC/PAC/CP/22-23/ST. for the department of Cardiac Pathology. Accordingly, a meeting with 3 Expert Member is scheduled to be held on 23/04/2024 (Tuesday) at 2:30 pm in the Office of Dr. Sudheer Kumar Arava, 1th Floor, Teaching Block Room no. 1057, AIIMS, NEW DELHI:

Sr. No.	Name	Department
1.	Prof. Sarita Mohapatra	Deptt. of Microbiology B4 Room
2.	Dr. Shyam Prakash	Addl. Prof., Lab Medicine
3.	Dr. Jayant Kumar P	Addl. Prof., Biochemistry

The above mentioned member are hereby requested to make it convenient to attend the meeting on the aforementioned date, time & venue and submit their comments/recommendations for purchase of said equipment.

Distribution: As above

Copy to:

- ✓ The Prof. In- Charge, Cardiac Pathology- for information please
- General Manager, Café (With request to arrange Water, soup and snacks for 10 persons. The bill may be raised in favor of Chief CTC)

STORE OFFICER (CNC)

[Handwritten signature]
18/4

ALL INDIA INSTITUTE OF MEDICAL SCIENCES
ANSARI NAGAR, NEW DELHI-110 029
(STORE SECTION, CNC)

Tender Number: 289/CNC/PAC/CP/2023-24/St.

Dated: 23.04.2024

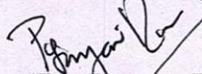
(MINUTES OF MEETING)

As per committee constituted by the Addl. Director (Admn.), AIIMS to examine the mandate of OM 40-30/2023-Estt.I dated 01-06-2023 issued by the Director AIIMS that (1) **The procurement was satisfactorily advertised (i.e. on GeM/CPP and on AIIMS website) and sufficient time was given for the submission of bids (i.e not less than three weeks for domestic tender enquiries and four weeks for Global tender enquiries) and (2) The qualification criteria were not unduly restrictive**, for purchase of Droplet Digital Polymerase Chain Reaction System (PCR)-01No. for Proprietary basis for the Department of Cardiac Pathology, the meeting with 03 expert members was held on 23/04/2024 (Tuesday) at 2:30 PM in the office of Dr. Sudheer Kumar Arava, 1st Floor, Teaching Block Room No.1057, AIIMS, New Delhi with the following members:

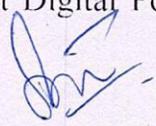
Sr. No.	Name of committee members	Name of the Department
01.	Prof. Sarita Mohapatra	Deptt. of Microbiology
02.	Dr. Shyam Prakash	Addl. Prof., Lab Medicine
03.	Dr. Jayant Kumar P	Addl. Prof., Biochemistry

- It was also informed to the committee that competent TSEC has prepared specifications (Estimated cost Rs.95 lakh approx.) and certified that the specifications are broad-based, generalized as per requirement of department & does not suit to any particular firm/brand, however, as per requirement, the product is proprietary in nature with patented technology which are fulfilling departments requirement.
- The department and OEM firm has submitted Proprietary Article Certificate claiming that the proposed equipment 'Droplet Digital Polymerase Chain Reaction System (PCR)' is proprietary in nature.
- User department also informed that this item is in the GTE exemption list of 371 item vide OM No.F.4/1/2022 PPD (PT) GOI dated 03.04.2023 (Sr.No.93) and requested to process as per rule.
- User department informed that the equipment with required specifications/parameters are not available in the GeM portal. to this effect GeM not availability report is provided with the PAC proposal.
- The qualification criteria like Financial Capability, Experience, Technical Capacity (Technical bid), Authorization from OEM, warranty & CAMC conditions, fall clause etc. are complying by the bidder and these conditions are as per AIIMS PURCHASE MANUAL, therefore qualification criteria are not unduly restrictive.
- M/s.ATCG India (Authorized Indian agent of M/s.Bio-rad Laboratories has submitted declaration for Land order declaration, fall clause certificate, justification for PAC item; US patent certificate, Performa Invoice (Scope of supply, Price with five years Comprehensive warranty, Rate for CAMC for 6th to 10th year.)

In view of above mentioned facts, committee discussed in details and felt that all the due procedure has been followed by the department & stores, therefore committee unanimously considered the process/proposal and recommended to process further for purchase of Droplet Digital Polymerase Chain Reaction System (PCR)-01No. on proprietary basis.


(Dr. Jayant Kumar P)
Deptt. of Biochemistry


(Dr. Shyam Prakash)
Deptt. of Lab Medicine


(Prof. Sarita Mohapatra)
Deptt. of Microbiology