

High-quality
nucleic acid
extraction
with assay
setup

revvity



chemagic Prime Jr



Get high-quality DNA/RNA and customize your assay setup with ease

chemagic Prime Jr

The chemagic Prime Jr enables a fully automated workflow from primary sample to ready to use high-quality DNA and RNA. Reliable and easy to operate, the instrument ensures excellent DNA/RNA recovery from diverse sample matrices. Proven liquid handling technology further reduces hands-on time and sample variations due to human error in the setup of customized downstream processes (eluate storage, PCR, NGS etc). With a maximum capacity of 48 samples of up to 1000 µl body fluids, samples can also be loaded stepwise (2 x 24) for greater flexibility.

2029-0020

chemagic Prime Jr

CMG-2029-0020*

chemagic Prime Jr-D



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Not for use in diagnostic procedures.



Make your lab a prime site

Performance

- chemagen separation technology for high-quality DNA/RNA extraction
- High yields, integrity and purity of nucleic acids
- Suitable for diverse downstream applications e.g. NGS, PCR, long-read sequencing, MLPA etc.

Flexibility

- Suitable for diverse sample types and tube/plate formats
- Customizable to your needs - pipetting, eluate transfer, normalization, PCR/NGS setup

Automated Traceability

- Full traceability at any point
- Barcode tracking and LIMS compatible
- Customizable run reports

Quality Assurance

- CE-IVD certified version* for in vitro diagnostic applications
- Safe travel paths
- UV disinfection (optional)

Efficiency

- Fast startup
- Fast and optimized reagent dispensing
- On deck heating/cooling/shaking options.

Ease of Operation

- Intuitive WinPREP software for easy operation
- Instrument status lights and sounds. Guided setup and maintenance
- User friendly programming
- Email notification of errors



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Wide range of sample types and applications

The chemagic Prime Jr can be run with universal kits that can manage a diverse array of sample types for genomic DNA, RNA and viral/bacterial nucleic acid purification.

chemagic Prime Jr Kits

Preps/Kit: 480 | Ready-to-use kits

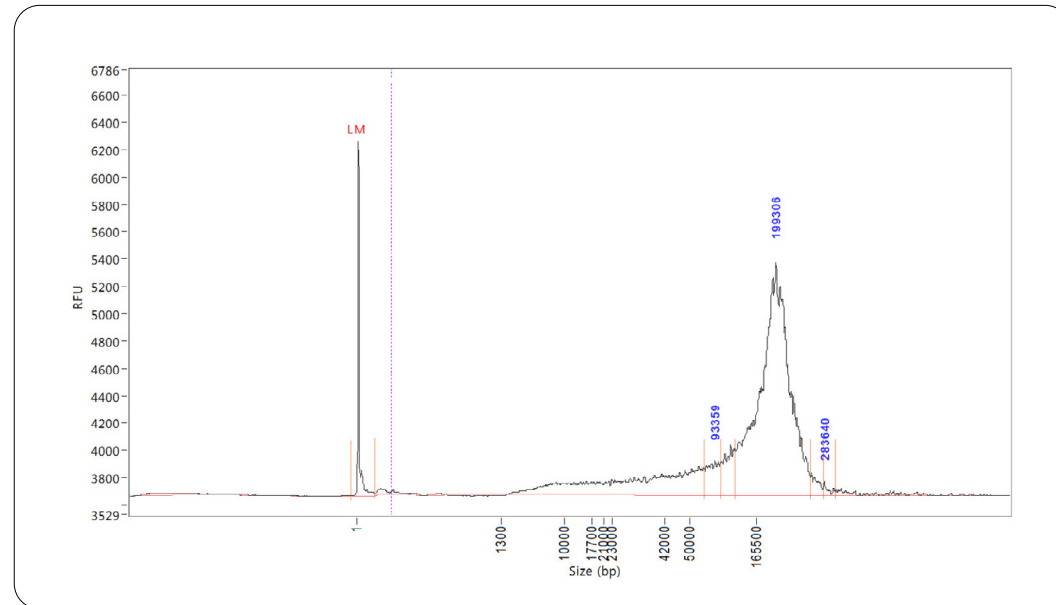
Target	Sample type	Sample volume	Product name	Product no.
gDNA	Diverse sample types, blood, buffy coat, saliva, plasma, serum, lavage, tissue, cells, DBS, bacterial culture	200 - 800 µl	Junior gDNA Kit*	CMG-1534
Pathogen NA	Diverse sample types, blood, buffy coat, saliva, plasma, serum, lavage, tissue, cells, DBS, bacterial culture	200 - 1,000 µl	Junior Pathogen NA Kit*	CMG-1521
RNA	Tissue, cells from cell cultures, white blood cells, blood from PAXgene® tubes	Up to 2.5 ml blood or 10 mg tissue	Junior Total RNA Kit	CMG-1512

* Sample collection can be done directly or with swabs.



High quality DNA/RNA extraction

The chemagen separation technology and the proprietary use of M-PVA Magnetic Beads ensure a high purity and yield of DNA/RNA at fast turn-around times. Resulting fragment lengths up to ~200 kb increase success for downstream applications (e.g., long-read sequencing, MLPA, etc.)



DNA is not degraded during extraction. DNA was extracted from 4 mL samples of whole blood using the chemagic 360 instrument and diluted 1:1000 for analysis of molecular weight using an Agilent® FEMTO Pulse™ system.

The chemagic Prime Jr instrument automates primary sample/eluate handling from diverse input/output tubes and all barcode scanning occurs on deck to minimize errors. Programming of workflows can be customized to accommodate different sample types in the same run. Downstream assay setup or QC and normalization is supported with seamless integration between instrument platforms. All information is recorded in a customized run report providing full sample traceability.





Workflow for nucleic acid purification from pathogens

Reduced risk of cross-contamination

chemagen separation technology relies on the movement of M-PVA Magnetic Beads instead of liquids which avoids sample cross-contamination. Gentle lysis and resuspension with rotating Rod Heads also reduce risk of overflow while minimizing nucleic acid shearing.

Plate 1

	1	2	3	4	5	6	7	8	9	10	11	12
A	19.472	undet	18.850	undet	18.922	undet	19.928	undet	18.656	undet	19.023	undet

Plate 2

	1	2	3	4	5	6	7	8	9	10	11	12
A	19.869	undet	19.432	undet	19.131	undet	19.541	undet	20.120	undet	19.977	undet

Plate 3

	1	2	3	4	5	6	7	8	9	10	11	12
A	20.170	undet	19.605	undet	19.241	undet	19.159	undet	19.731	undet	20.248	undet

Plate 4

	1	2	3	4	5	6	7	8	9	10	11	12
A	19.733	undet	21.047	undet	20.278	undet	20.172	undet	19.662	undet	19.212	undet



ultrapure water

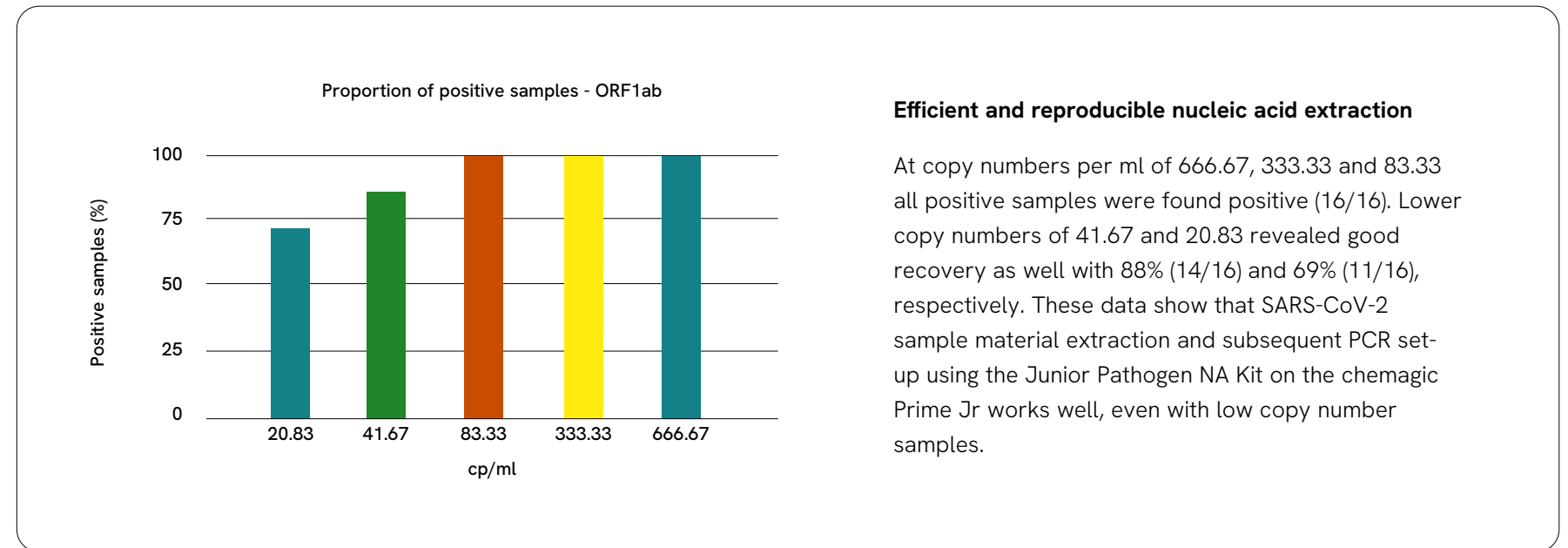


5 µl HSV positive direct control



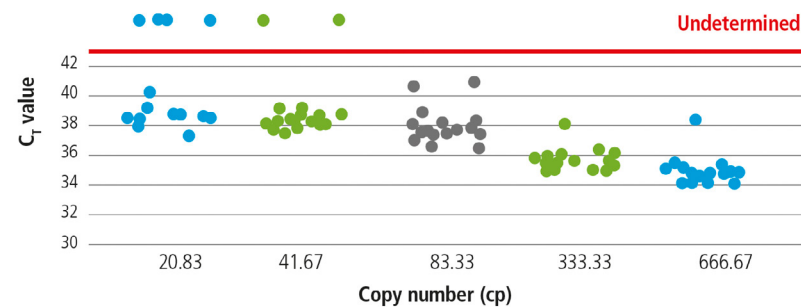
Reliable DNA/RNA extraction for pathogen detection

Detect even low copy numbers of pathogens with reliable extraction and PCR setup by the chemagic Prime Jr in less than 10 min of hands-on time. The Probit predicted 95% detection rate for AccuPlex™ SARS-CoV-2 Reference Material Kit (SeraCare) spiked in blank eNAT medium and analyzed using the Revvity SARS-CoV-2 Real-time RT-PCR Assay* for ORF1ab gene C_T values was comparable between the Junior Pathogen NA Kit (LOD95 = 2.23 cp/ml)** and chemagic Viral DNA/RNA 300 Kit H96 (LOD95 = 3.06 cp/ml)** on the chemagic Prime Jr. Achieve even greater detection sensitivity by increasing sample input volume up to 3 ml.



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**This was calculated according to D.J. Finney (1952) Probit Analysis (2nd ED), Journal of the Institute of Actuaries, 78 (3):388-390.

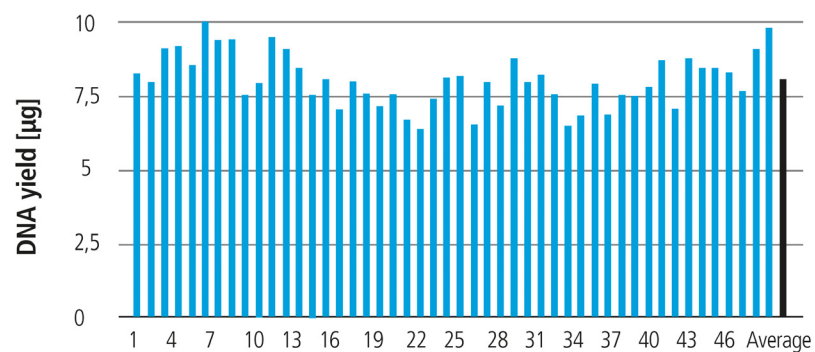
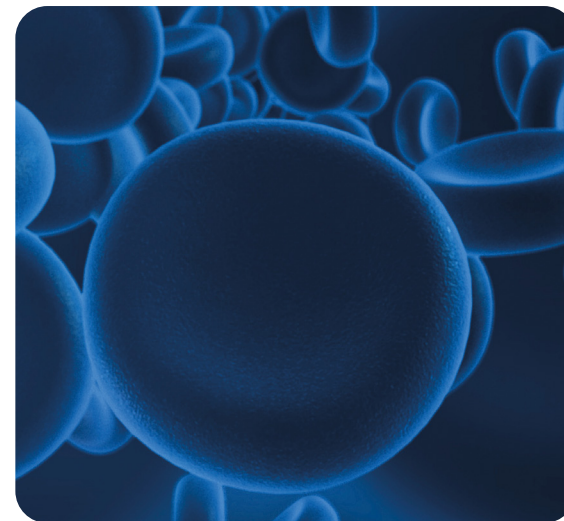


Reproducible qPCR using the Junior Pathogen NA kit on the chemagic Prime Junior

Reliable performance across all replicates was seen in qPCR when C_T values of the single samples were analyzed. C_T values for target gene ORF1ab increased with a decreasing number of copies per samples as expected with minor standard deviations for the 666.67, 333.33 and 83.33 copy/ml samples.

Product no.	Kit name	Preps/Kit	Input	Sample material	Hands-on time	Application field
CMG-1033-S	chemagic Viral DNA/RNA 300 kit H96	960	up to 300 μ l	Nasal or oropharyn-geal swabs, saliva, sputum, BAL, serum or plasma	10 min	SARS-CoV-2 analysis
CMG-1521	Junior Pathogen NA kit	480	200 μ l - 1000 μ l depending on the sample material	Blood, serum, plasma, saliva, sputum, swabs, CVS, urine, feces	10 min	Pathogen Screening (blood-borne, respiratory, sexual transmitted, gastrointestinal pathogens, etc.)

Workflow for automated DNA and RNA purification from blood



High-quality DNA from 200 µl blood

Genomic DNA was purified from 48 blood samples with the chemagic DNA CS200 kit on the chemagic Prime Jr. The DNA yield ranges from 6.1 - 9.3 µg. The average yield was 7.5 µg (black marked column).

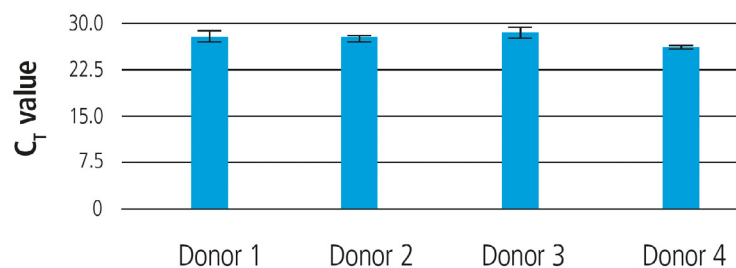
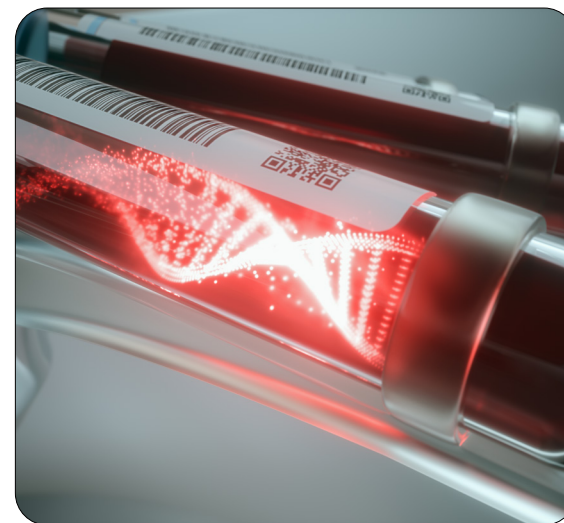


Reliable yields with minimal hands-on time

The chemagic Prime Jr reliably generates high quantitative yields for all input samples. The walk-away automation, sample tracking, and intuitive software enables easy operation and reduces manual handling and human error.

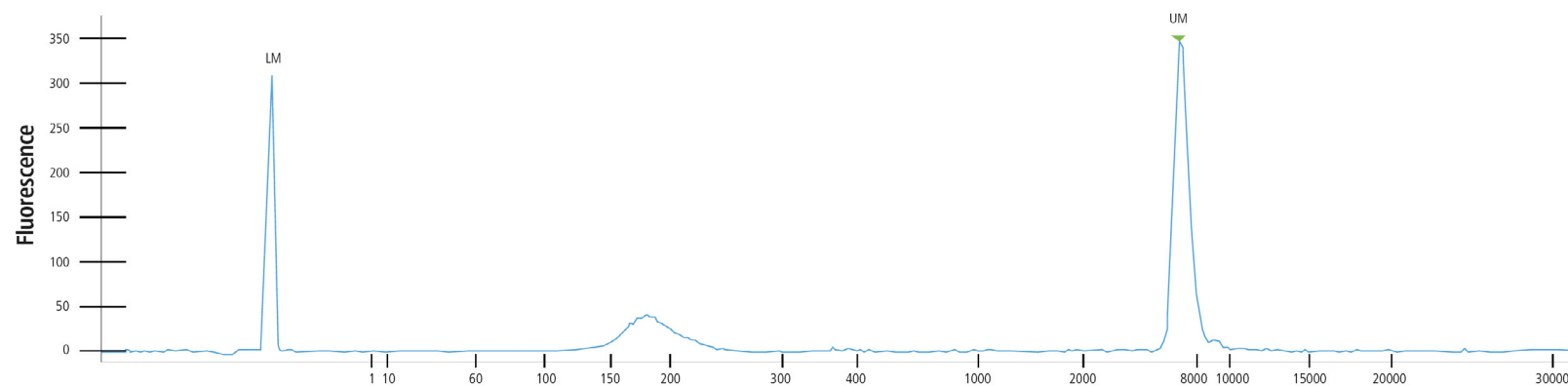
Product no.	Kit name	Preps/Kit	Input	Sample material	Hands-on time	Application field
CMG-1534	Junior gDNA kit	480	200 µl - 500 µl depending on the sample material	Blood, buffy coat, saliva, cells, buccal swabs, tissue, FFPE tissue, feces, amniotic fluid	10 min	Biobanking, Genotyping, HLA typing
3207-0010	chemagic DNA CS200 kit	960	200 µl	Blood, buffy coat, saliva, cells, buccal swabs, tissue, FFPE tissue, feces*, amniotic fluid	10 min	Biobanking, Genotyping, HLA typing

Workflow for automated cfDNA isolation from plasma



Top-quality qPCR performance of isolated cfDNA

For cfDNA analysis, a short fragment (115 bp) from a consensus sequence with abundant genomic ALU repeats was amplified. Primers were synthesized by biomers.net (Ulm, Germany) and the FastStart Universal SYBR Green Master (Rox) (Roche, Mannheim, Germany) was used. The qPCR was performed in duplicates for each eluate, thus, in total, six C_T values were detected for each plasma donor.

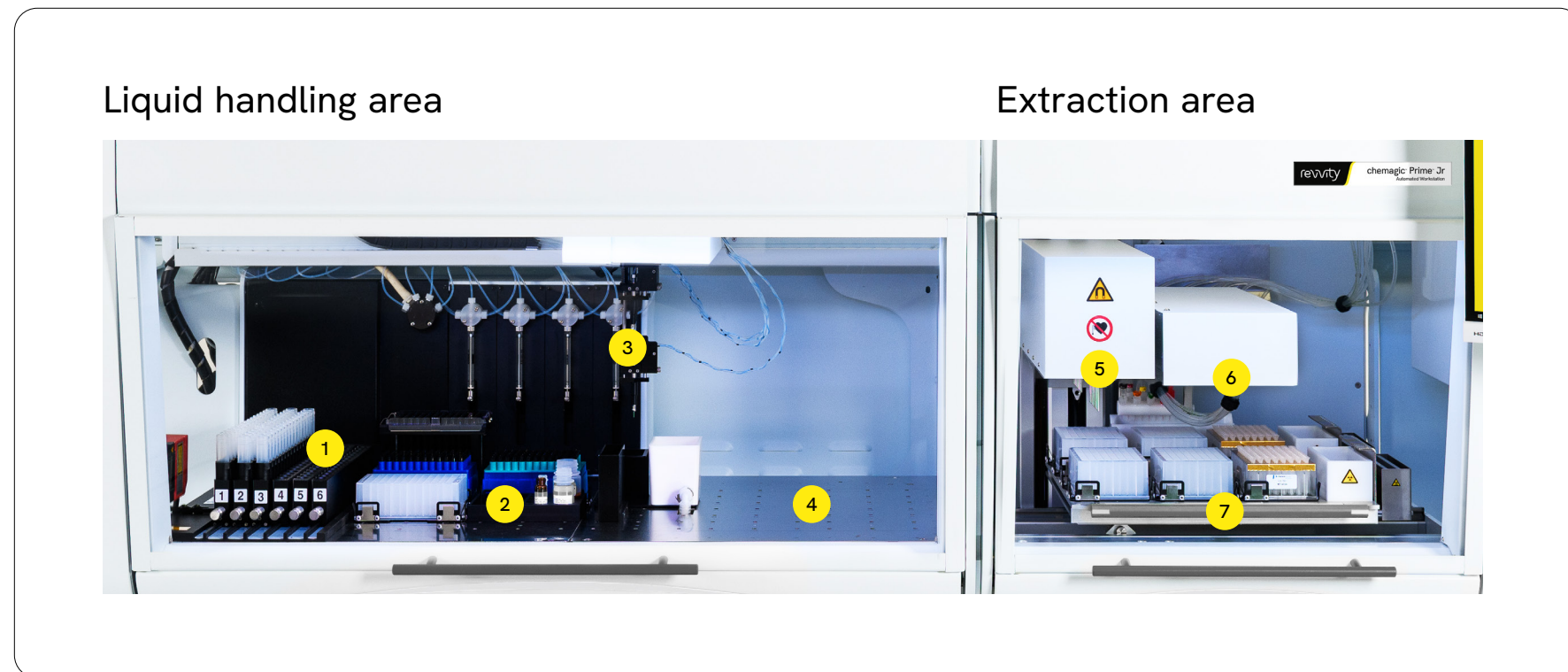


Top-quality of isolated cfDNA

One of the electropherograms was selected to present the high-quality of isolated cfDNA after automated extraction with the chemagic Prime Jr. The eluted DNA was loaded on the HT X-Mark LabChip running the HT DNA NGS 3K assay on the LabChip GX Touch HT Nucleic Acid Analyzer (LM: Lower Marker, UM: Upper Marker).

Product no.	Kit name	Preps/Kit	Input	Sample material	Hands-on time	Application fields
CMG-1396	chemagic cfDNA 1.5k Kit H96	960	1.5 ml	Plasma	10 min	Cancer research, Non-invasive prenatal studies

Deck overview



- | | |
|-------------------------------------|-----------------------------------|
| 1. 6 x 16 barcoded sample cassettes | 5. Magnetic rod head |
| 2. Rack for reagents | 6. Dispenser unit |
| 3. Pipetting unit | 7. Plates and tips for extraction |
| 4. Free deck space for assay setup | |



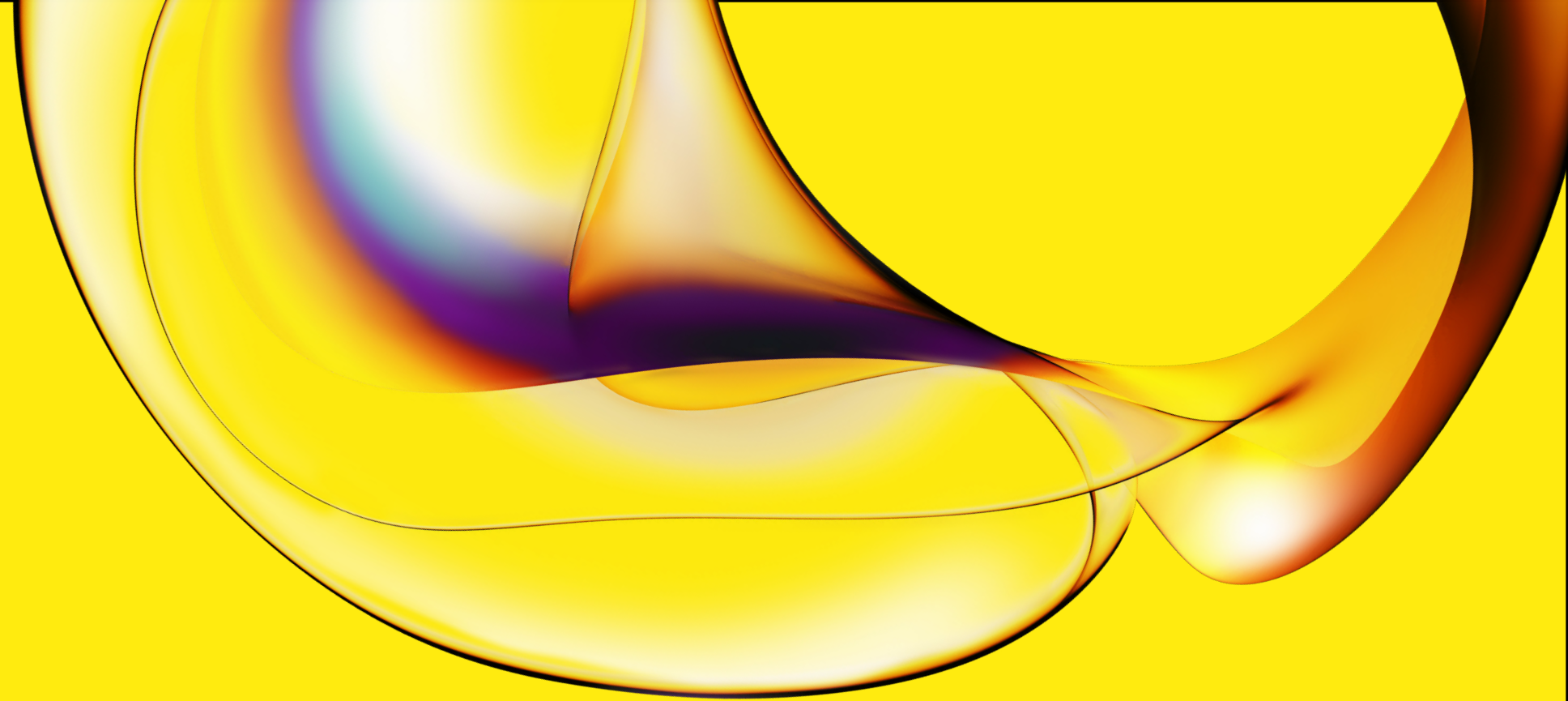
Ordering information

Instruments	Product number
chemagic Prime Jr	CMG-2029-0020
chemagic PrimeJr-D*	2029-0010*
Installation	Product number
chemagic Prime Jr IQ/OQ	CMG-13005667
Sample Tracking	
chemagic Prime Jr ID Sync QA	CMG-13005669
Hardware	
2 D Flatbed Tube Reader Upgrade Kit (Ziath DataPac™ ZTS-EXP)	CMG-13009695
chemagic Prime Jr UV Light Option	CMG-13005681

Please refer to the chemagic Prime Jr Order Guide for full listing of optional add-ons.

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