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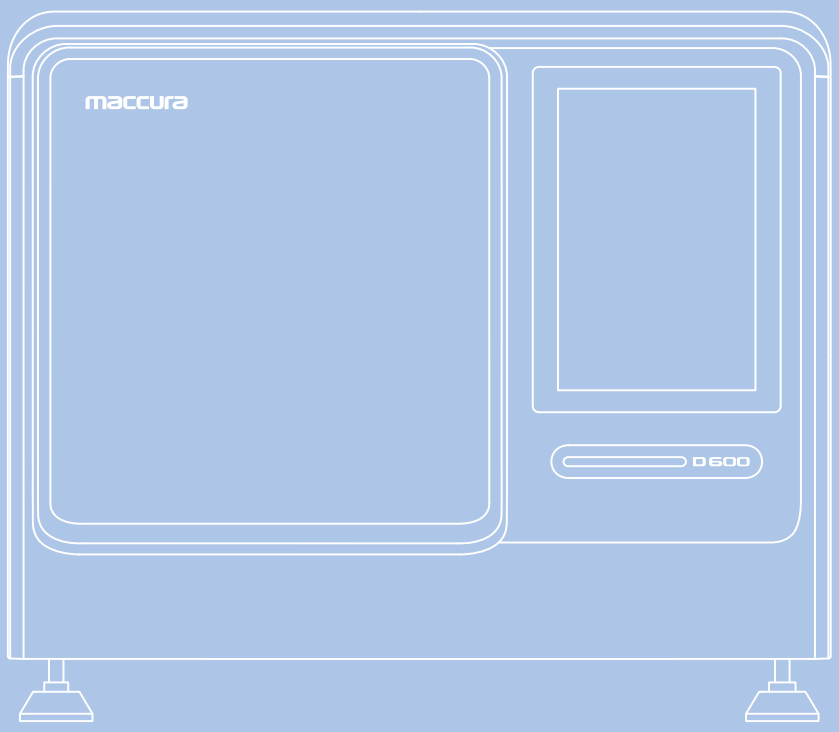
D600

DIGITAL PCR SYSTEM



About Digital PCR

Digital PCR(dPCR) technology is an absolute quantitative nucleic acid detection method, without the need for standard curve to accurately quantify nucleic acid, greatly ensuring the accuracy and precision of detection, is the third generation of quantitative nucleic acid detection technology after real-time fluorescence quantitative PCR technology. It has important application value in liquid biopsy, tumor concomitant diagnosis, noninvasive prenatal screening, pathogen load monitoring and so on.

Absolute quantification

No referencere rquired
Independent of the standard curve

Accurate and sensitive

High signal-to-noise ratio
Single copy can be tested

Reliable retest

Good repeatability
Ensure the consistency of test results

High efficiency and stability

Tolerance to inhibitors
Applicable to complex samples

Original Vibration Micro(OsciDrop®) Core Technology

D600 automatic digital PCR system, with self-developed core technology of vibrating microdroplet, has many breakthrough advantages.

Fully automatic

The whole process of sampling, droplet generation, amplification and testing is realized.

High throughout

96 samples in three hours
Suitable for different throughout requirements

Low cost

Chip-free consumables
Cost is reduced to qPCR level

Multiple channels

Up to 6 channel fluorescence channels
The product can be recycled separately

High precision

In situ amplification and testing
Improve accuracy and precision

Customization

Number of nanodroplets per sample
It can be customized according to testing requirements

1. OsciDrop ®technology has been patented: Patent No. ZL201410655191.5, Certificate No. 2121818

Applications


Pathogen


Oncology


NIPT


Environment


Minimal Residual Detection


Copy Number Variation


Gene Editing

Immunotherapy


Food Safety

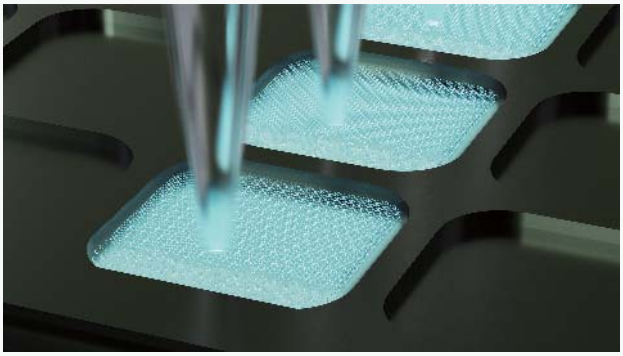

Epigenetics


Gene Expression


Single Cell Research

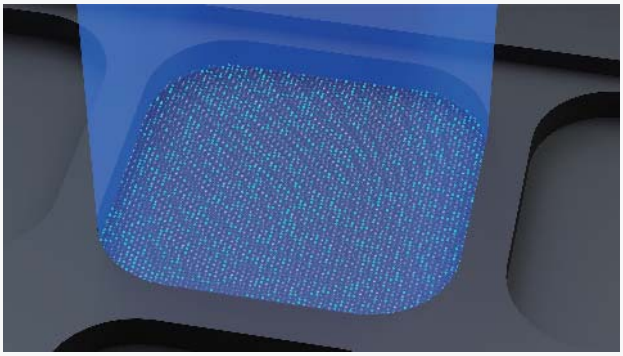
Parameters

Instrument	D 600 Automatic Digital PCR System
Reaction wells per sample	5,000-20,000 nanodroplets/sample
Nanodroplet size	1 nL
Sample throughout	1-96 samples
Optical Channel	Up to 6 fluorescence channels
Sensitivity	Single copy
Dynamic range	5 logs
Precision	±10%
Sample illumination	LED
Sample detection	CMOS



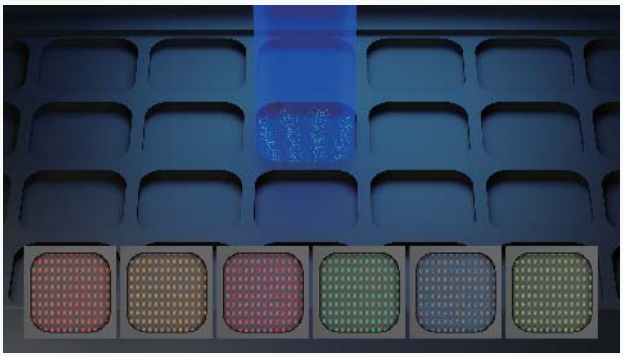
Fast & uniformity

Microdroplet array printing adopts the original vibration micro(OsciDrop®) core technology to rapidly and stably generate uniform nano-scale microdroplet.



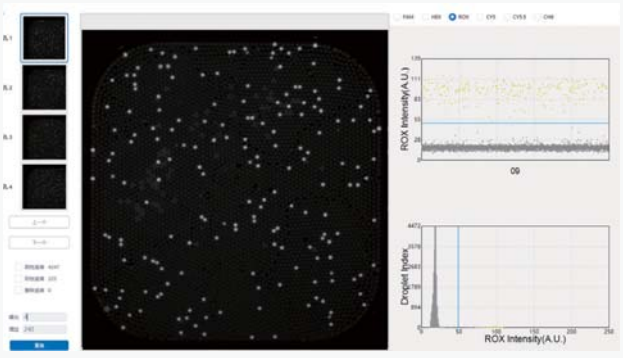
Stable amplification

The micro nanodroplets are flattened into a single-layer array in the well plate for in-situ amplification and fluorescence reading detection. The operation is convenient and the nanodroplets are effectively used.



Multiple fluorescence

Nanodroplet array reading has high-performance LED excitation light source and orthogonal fluorescence imaging detection system, supports more fluorescence detection channels, and can develop super multiplex digital PCR detection system.



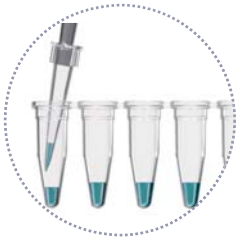
Exact algorithm

Using advanced planapochromatic fluorescence imaging correction technology and deep learning nanodroplet array recognition algorithm, the nanodroplet recognition accuracy is high and the signal-to-noise ratio is good.

* The pictures are for visual effects, for illustration and expression only, not for actual reference.

One-stop detection process

Step 1



Manual configuration of the reaction system

Configure PCR reaction system

Reaction system: 10 ~ 25μL

Step 2

automatic detection and analysis

Nanodroplet generation

Put the reaction system and consumables into the instrument for nanodroplet generation. Each experiment can generate up to 96 nanodroplets of samples; Each print and sample can generate up to 20,000 nanodroplets.

PCR amplification reaction

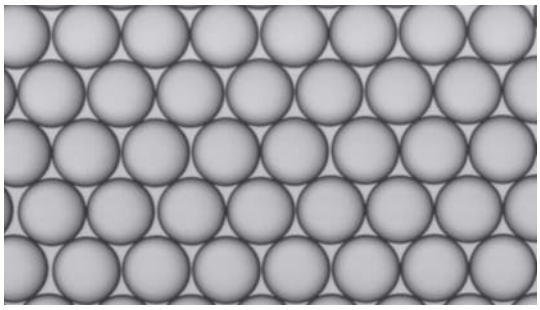
After the nanodroplets are generated, the instrument seals the amplification area of the orifice plate to complete the PCR reaction.

Result analysis

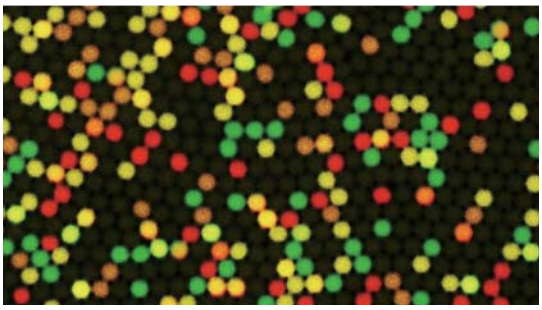
Fluorescence photo-detection is performed on each reaction well; the quantitative value of the sample is calculated according to the number of negative and positive nanodroplets, which is according to poisson distribution.

Product performance

The nanodroplet size is accurate and uniform nanodroplet amplification is rapid and stable



OsciDrop® nanodroplet generation is uniform and stable



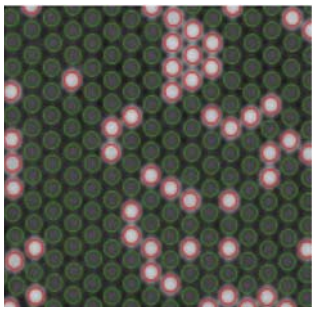
OsciDrop®4 fluorescence chennels test results

OsciDrop® provides a new platform for the wide range of applications of digital PCR adopting Maccura chip-free vibration micro(OsciDrop®) core technology, combined with advanced micro-nano sample needle, new fluorescent-free drop-generating oil, and high-performance digital PCR premixed solution.

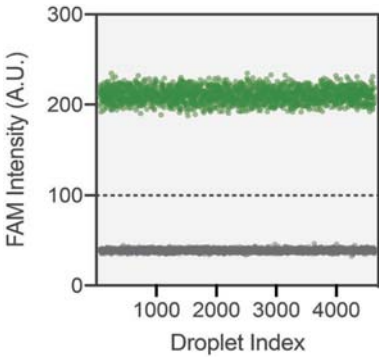
Original vibration micro(OsciDrop®) core technology, precisely set the volume of each microdroplet, volume CV(coefficient of variation) value is less than 5%, meets the requirements of digital PCR accurate quantification.

High performance flat plate amplification platform, combined with high thermal conductivity microdroplet array porous plate, improve the uniformity of large area nanodroplet array PCR rapid amplification.

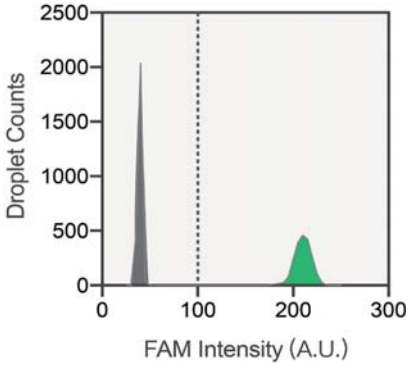
Ultra-sensitive multi-channel fluorescence imaging
Nanodroplet signal interpretation is accurate and fast



AI based nanodroplet interpretation



Scatter diagram of nanodroplet signal



Histogram of nanodroplet signal

Super Hi-Vision orthogonal multi-channel fluorescence imaging technology, can achieve up to 6 color channel fluorescence imaging, high detection sensitivity, effectively avoid fluorescence channel crosstalk.

The absolute quantification of nucleic acid in the experimental samples shows that there was no raining phenomenon in the positive and negative droplets, and the signal-to-noise ratio was high. D600 automatic digital PCR system supports analysis software enables users to view the original fluorescence map of microdroplet array, software interpretation results and quantitative statistical results.

*The red circle is the nanodroplet judged positive by the software, and the green circle is the negative nanodroplet.

Detection Kit

Instrument	D 600 Automatic Digital PCR System
Consumable	Universal dPCR Consumables
Universal Reagent	2× Universal dPCR MasterMix for DNA 2× One Step RT-dPCR MasterMix for RNA
Customized Tests Menu	HIV-1 Digital PCR Kit 2019-nCoV Digital PCR Kit Influenza A Virus Digital PCR Kit Influenza B Virus Digital PCR Kit Rhinovirus Digital PCR Kit Adenovirus Digital PCR Kit Mycoplasma Pneumoniae Digital PCR Kit Mycobacterium Tuberculosis Digital PCR Kit Norovirus Digital PCR Kit Enterovirus 71 Digital PCR Kit Enterovirus Universal Digital PCR Kit Coxsachie Virus A 16 Digital PCR Kit Monkeypox Virus Digital PCR kit Human EGFR T790M Digital PCR Kit Human PIK3CA E542K Digital PCR Kit
Extraction	N32 Automatic Extraction System Nucleic acid extraction or purification kit

* For research use only. Digital PCR kits provide various customized services

Customized service

In addition to supporting kits, it can provide customization options, including infection diseases, tumor markers, genetic and other related diseases, a total of more than 400, please refer to the form on the next page for details.

400+ Continuously add

Infection related	Respiratory pathogens Hand, foot, mouth and enterovirus pathogens Hepatitis virus Reproductive health Parasite
Tumor related	Mutation detection Copy number variation Fusion gene detection Methylation detection
Genetically related	Single gene disease
Animal related	Animal disease Zoonotic disease Pets

D 600

Automatic Digital PCR System Customized Reagents

Infection related-Respiratory pathogens 133

Flu A
Flu A H1N1 Virus (2009)
Flu A H3N2 subtype
Flu B
Flu B Victoria
Flu B Yamagata
Flu N
Flu N1
Flu N2
Flu N3
Flu N4
Flu N5
Flu N6
Flu N7
Flu N8
Flu N9
Flu H1
Flu H2
Flu H3
Flu H4
Flu H5
Flu H6
Flu H7
Flu H8
Flu H9
Flu H10
Flu H11
Flu H12
Flu H13
Flu H14
Flu H15
Flu H16
AI virus
AI virus H5N1
AI virus H5N2
AI virus H5N6
AI virus H5N8
AI virus H7N2
AI virus H7N4
AI virus H7N9
AI virus H9N2
AI virus H10N8
Flu C
Flu D
RSV
RSV A
RSV B
PIV
Nucleic acid typing of PIV
PIV- I
PIV- II
PIV- III
PIV- IV
HCoV
HCoV typing
HCoV 229E
HCoV OC43
HCoV NL63
HCoV HKU1
MERS-CoV
SARS-CoV
2019-nCoV (ORF1ab/E)
2019-nCoV (ORF1ab/N)
2019-nCoV (ORF1ab/E/N)
2019-nCoV and N501Y mutation
Mutations in the S gene HV69-70del, E484K and K417N of 2019-nCoV
Mutations in the S gene L452R、E484Q、P681R of 2019-nCoV
ADV
ADV- III
ADV- VII
HRV
HMPV
HBoV
Mumps virus
WU polyoma virus
Streptococcus pneumoniae
Haemophilus influenzae
Staphylococcus aureus
Group A B hemolytic streptococcus
Ebola Virus
Klebsiella pneumonia
Chlamydia pneumoniae
Mycoplasma pneumoniae
Legionella bacteria
Legionella pneumophila
Pseudomonas aeruginosa
Mycobacterium tuberculosis
Nocardia asteroides
Bordetella pertussis
Bacillus parapertussis
Corynebacterium diphtheriae
Pneumocystis jirovecii
Nocardia asteroides
Nocardia brasiliensis
Nocardia transvalensis
Nocardia carnea
Cryptococcus neoformans
Haemophilus flu B
Streptococcus suis
Chryseobacterium meningosepticum
Neisseria meningitidis
Neisseria meningitidis serogroup W135
Neisseria meningitidis serogroup Y
Neisseria meningitidis serogroup X
Neisseria meningitidis serogroup C
Neisseria meningitidis serogroup B
Neisseria meningitidis serogroup A
Group A+C Neisseria meningitidis
Acinetobacter baumannii
Enterovirus D68v
Moraxella cataracea
KI polyoma virus
Aeromonas
Corynebacterium diphtheria
Legionella micdadei
Pseudomonas aeruginosa
Group A Streptococcus
Group B streptococcus
Aeromonas hydrophila
Yersinia pseudotuberculosis
Drug-resistant Pseudomonas aeruginosa
MRSA
Extended spectrum beta-lactamases bacteria
Stenotrophomonas maltophilia
Mycobacterium leprae
Mycobacterium abscessus
Mycobacterium intracellulare
Mycobacterium avium
Mycobacterium gordonae
Mycobacterium abscessus
Mycobacterium kansasii
Rhodococcus equi
Clostridium tetani

Enterovirus universal
Enterovirus 71
Coxsackie virus A16
Coxsackie virus A6
Coxsackie virus A10
Enterovirus 68
Enterovirus 70
Coxsackie virus A2
Coxsackie virus A4
Coxsackie virus A5
Coxsackie virus A24
Coxsackie virus B1
Coxsackie virus B2
Coxsackie virus B3
Coxsackie virus B4
Coxsackie virus B5
Coxsackie virus B6
Norovirus *
Norovirus G I
Norovirus G II
Norovirus IV
Poliovirus 1
Poliovirus 2
Poliovirus 3
RV A
RV B
RV C
Vibrio cholera
Vibrio cholerae O1
Vibrio cholerae O139
Vibrio cholerae CTX
Vibrio cholerae ctxB
Vibrio parahaemolyticus
Vibrio parahaemolyticus TDH gene
Vibrio parahaemolyticus TRH gene
Vibrio parahaemolyticus TLH gene
Vibrio parahaemolyticus ToxR gene
Staphylococcus aureus
SEA
SEB
SEC
SED
SEE
ECHO 11
ECHO 30
Botulinum toxin
Botulinum toxin A
Botulinum toxin B
Botulinum toxin E
Botulinum toxin F
Yersinia enterocolitica
Yersinia enterocolitis virulence gene
EAEC
EPEC
ETEC
EHEC
EIEC
E.coli universal
EHEC O157
EHEC O104
Hemolysin gene
E. coli stx1 gene
E. coli stx2 gene
Astrovirus
Sapovirus
Enteric Adenovirus
Parechovirus
Picobirnavirus(PBV)
Salmonella
Shigella
Campylobacter laridis
Campylobacter coli
Yersinia pseudotuberculosis
Aeromonas hydrophila
Plesiomonas shigelloides
Vibrio mimicus
Vibrio vulnificus
Vibrio alginolyticus
Vibrio fluvialis
Helicobacter pylori
Clostridium difficile
Dysentery bacillus
Proteus
Enterobacter sakazakii
Bacillus cereus
Clostridium perfringens
Cryptosporidium
Entamoeba histolytica
Giardia
Human parechovirus
Listeria monocytogenes
Campylobacter coli
Salmonella typhi paratyphosus bacillus

Infection related-Hepatitis virus 9

HAV
HBV
HBV typing
HBV YMDD mutation
HBV mutations in the anterior C /BCP region
HCV
HCV typing
HDV
HEV

Infection related-Reproductive health 17

HIV-
1 HIV-
2
CMV
HSV(Ⅰ / Ⅱ)
HPVB19
RV
TOX
GBS
MH
UU
UU typing
HPV
HPV typing
NG
CT
TP

Infection related-Arthropod-borne disease 56

JEV
DV universal
DV Ⅰ
DV Ⅱ
DV Ⅲ
DV Ⅳ
YFV
Zika virus
CHIKV
SFTSV
WNV
XHFV
HTNV
TOSV
MARV
Lassa virus
Brazilian haemorrhagic fever virus
RVFV
NiV
SLEV
TBEV
WEEV
EEEV
VEEV
RV
PRV
HTNV
Cardipino virus
Banna Virus
Nam Dinh virus
Tibetan Circovirus
Akabane virus
Oya virus
GETV
Mangshi virus
Omono river virus
Eridge virus
Menghai rhabdovirus
Guangping virus
Crimean-Congo hemorrhagic fever virus
CHIKV
RVFV
E.coli
Enterococcus faecium
Enterobacter cloacae
Enterococcus faecalis
Proteus mirabilis
Arenaviridae
Lassa virus
New Bunia virus
Variola Virus
West nile virus
Monkeypox Virus
Streptococcus agalactiae

Infection related-Parasite 14

Plasmodium universal
Plasmodium falciparum
Plasmodium vivax
Plasmodium ovale
Plasmodium malariae
Plasmodium ovale （Curtisi)
Plasmodium oval (Wallikeri)
Giardia lamblia
Cryptosporidium
Sparganum mansoni
Taenia solium
Angiostrongylus cantonensis
TOXO
Entamoeba histolytica

Tumor related-Copy number variation 2

HER2 copy number variation
MET copy number variation

Tumor related-Methylation detection 12

Septin9 methylation
SDC2 methylation
NDRG 4 methylation
BMP6 methylation
P16 methylation
RASSF1A methylation
SHOX2 methylation
CPXM1 methylation
HOXA10 methylation
DACH6 methylation
Cyclin D2 methylation
PAX5 methylation

Tumor related-Mutation detection 52

EGFR
- Exon19 del (LREA)
- Exon21 L858R
- Exon18 G719X
- Exon21 L861Q
- Exon20 T790M
- Exon20 ins

KRAS
- G12D
- G12V
- G12S
- G12C
- G12A
- G12R
- G13A
- G13D

NRAS
- Exon2 Codon12,13
- Exon3 Codon59,61

BRAF gene
- Exon15 V600E
- Exon15 V600D
- Exon15 V600K
- Exon15 V600R

MET
- Exon 14

HER2
- Exon20 ins
- Exon8
- Exon17 V659E

PIK3CA
- Exon9 E542K
- Exon9 E545Q
- Exon20 H1047R

-- Exon20 G1049G

BRCA1
- Exon11
- Exon2
- Exon20
- Exon5
- Exon18
- Exon21

BRCA2
- Exon10
- Exon11

C-KIT
- Exon11
- Exon9
- Exon13
- Exon17

PDGFRA
- Exon18 D842V
- Exon12
- Exon14

IDH1
- R132C
- R132G
- R132H

JAK2
- V617F

MYD88
- L265P

TP53
- R175H
- R248L
- R273C
- R273H

Tumor related-Fusion gene detection 4

ALK fusion
ROS1 fusion
RET fusion
BCR-ABL fusion

Tumor related-Single gene disease 18

DMD
Hemophilia A
Hemophilia B
Hereditary deafness
a thalassemia
ßthalassemia
SMA
CAH
PKU
Albino
Gal
HLD
PKD
Glycogenosis type II
Citrullinemia
GD
Mucopolysaccharidosis type I
Mucopolysaccharidosis type II

Animal related-Animal disease 12

ASFV
CSFV
PRRSV
PEV
PCV-2
FMDV
PRV
PPV
AHSV
PPR
NDV
Bovine tuberculosis

Animal related-Zoonotic disease 10

Yersinia pestis
Bacillus anthracis
Leptospira
Rickettsia prowazekii
Rickettsia mooseri
Orientia tsutsugamushi
Coxiella burnetii
Bartonellahenselae
Brucella
Borrelia burgdorferi

Animal related-Pets 13

FPV
FHV
Dog and cat mycoplasma
FCV
Chlamydia felis
Cat tritrichomonas foetus
TOX/Bartonella henselae
CDV
CAV 2
CPIV
Bb
CPV
CCV

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