

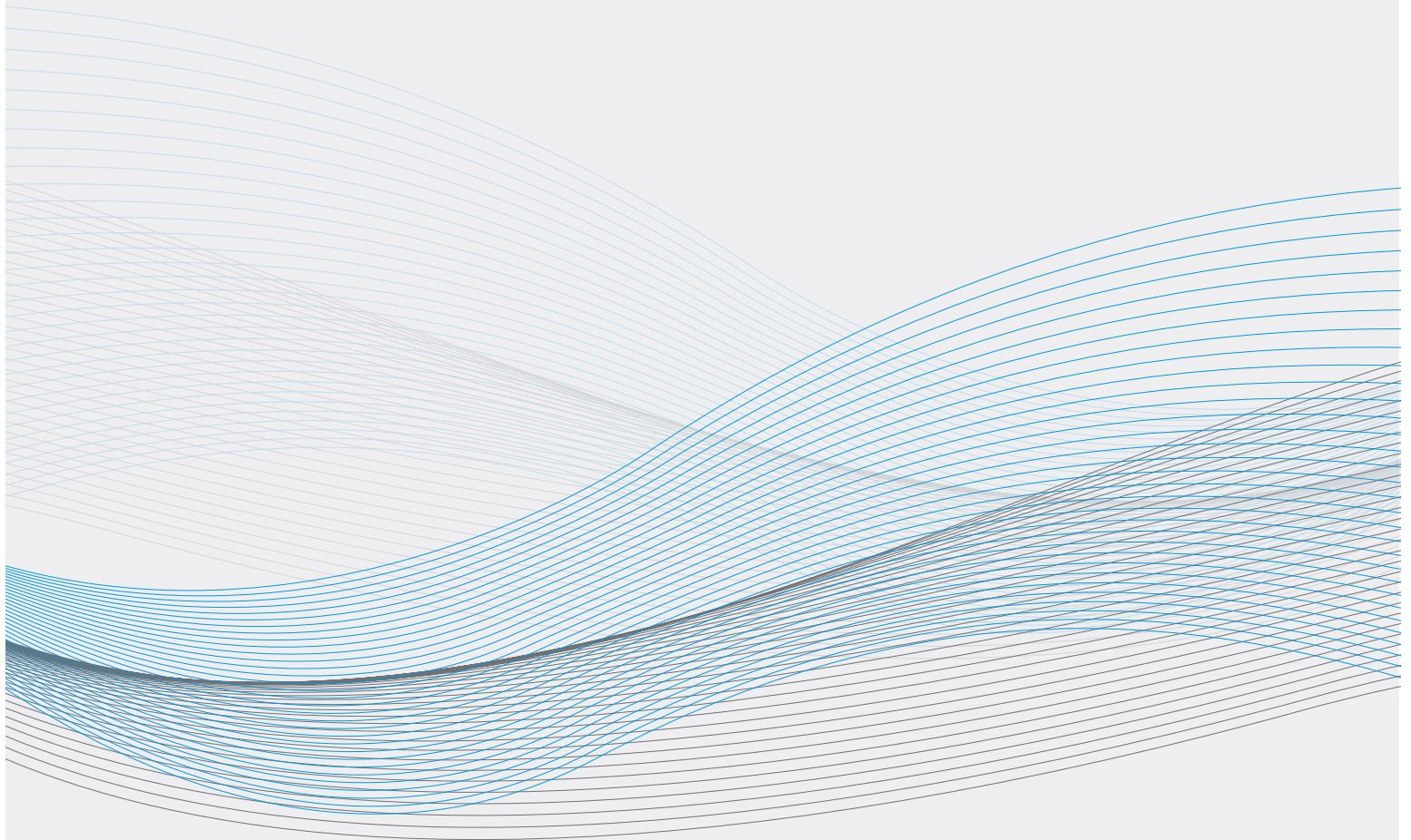
Gene Expression Analysis Solutions

Support for Your Entire Gene Expression Workflow



YOUR COMPREHENSIVE PARTNER IN GENE EXPRESSION

Bio-Rad has many years of experience offering a complete set of tools that span every step of your workflow to support your gene expression analysis needs.

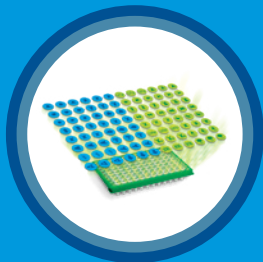


COMPLETE WORKFLOW



Cell Lysis and RNA Isolation

- Aurum Total RNA Mini Kit
- Aurum Total RNA 96 Kit
- Aurum Total RNA Fatty and Fibrous Tissue Kit
- PureZOL RNA Isolation Reagent
- SingleShot Cell Lysis Kits



Target Selection

- PrimePCR Assays
- PrimePCR Pathway Panels
- PrimePCR Custom Plates



Reaction Setup

- SsoAdvanced Universal Supermixes
- iTaq Universal Supermixes
- Reliance One-Step Multiplex Supermix
- iTaq One-Step Universal Kits
- SingleShot Cell Lysis RT-qPCR Kits
- iScript Reverse Transcription Supermix for RT-qPCR
- iScript gDNA Clear cDNA Synthesis Kit
- PCR Plastics



Detection

- CFX Opus 96 Real-Time PCR System
- CFX Opus 384 Real-Time PCR System
- CFX96 Touch Deep Well Real-Time PCR System
- CFX Connect Real-Time PCR System



Analysis

- CFX Maestro Software
- Precision Melt Analysis Software

Obtaining high-quality, contaminant-free RNA rapidly and efficiently is a crucial first step for most gene expression experiments.

Aurum Total RNA Kits

Aurum Total RNA Kits use efficient lysis and quick RNase inactivation to isolate high-quality, high-yield, DNA-free total RNA from cultured cells, bacteria, yeast, and plant and animal tissues.

- Quick purification — high-quality RNA isolation from a wide variety of samples in less than 60 minutes
- Complete solution — the Aurum Total RNA Fatty and Fibrous Tissue Kit offers a solution for difficult-to-disrupt samples rich in RNases
- Removal of genomic DNA (gDNA) — DNase I is included for complete digestion of gDNA
- Flexible formats — easy-to-use spin- or vacuum-compatible protocols are available

PureZOL RNA Isolation Reagent

The ready-to-use PureZOL RNA Isolation Reagent is a versatile and efficient means of isolating high yields of RNA from a variety of sources. Protocols are scalable to accommodate a wide range of sample sizes. DNA and protein that are efficiently removed from the RNA can be extracted following phase separation.

SingleShot Cell Lysis Kits

SingleShot Cell Lysis Kits provide a complete and fast solution for the generation of lysates from cell cultures, optimized for downstream one-step or two-step qPCR reactions, without an RNA purification step. The simple, short, minimally hands-on protocol is suitable for automation and provides a high-throughput solution.

bio-rad.com/rna-isolation

bio-rad.com/SSCellLysis



Aurum Total RNA 96 Kit

PrimePCR Assays and Panels are expertly designed PCR primer and probe assays that have been experimentally validated for guaranteed performance.

Individual Assays

Quantify expression of transcribed and long noncoding targets, quantify copy number, or detect rare mutant alleles using experimentally validated, predesigned probe or SYBR® based assays.



Custom PrimePCR Assay with included controls and preamplification

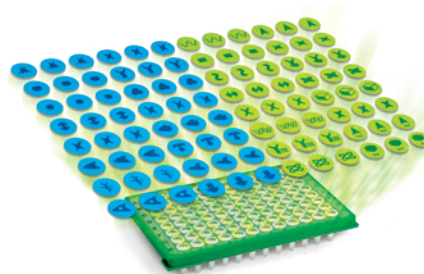
Pathway, Collection, and Disease Arrays

Survey the most commonly studied gene and long noncoding RNA targets within a specific pathology, across a biological process, or within a genomic pathway.

Custom PCR Array Plates

Thousands of PrimePCR SYBR® Green assays are available to create custom-configured 96- and 384-well PCR plates.

bio-rad.com/PrimePCR



Custom PrimePCR IncRNA qPCR Array

REACTION SETUP

Reagents

Optimal gene expression analysis results rely on the sensitivity and efficiency of both reverse transcription (RT) and qPCR steps. Our PCR reagents and kits feature advanced enzyme technology and buffer formulations and universal reference dyes* for reliable amplification, robust reverse transcription, and high-quality real-time PCR data from any qPCR system.

qPCR Reagents (DNA to Cq)



SsoAdvanced Universal Supermixes

2x supermixes expertly formulated for unparalleled performance based on the highly processive Sso7d fusion DNA polymerase.** Our SsoAdvanced Supermixes are highly tolerant to common PCR inhibitors, ideal for compromised samples.



iTaq Universal Supermixes

2x supermixes designed for reliable and reproducible performance for various real-time PCR applications.

RT-qPCR Reagents (RNA or cells to Cq)



Reliance One-Step Multiplex Supermix

4x supermix expertly formulated for highly sensitive and reliable detection of up to five targets directly from RNA. Assembled reaction stability (24-hour) makes it ideal for automation and high-throughput workflows.



iTaq One-Step Universal Kits

Easy two-tube system kits for reliable target detection directly from RNA by setting up a reaction with a 2x qPCR supermix and reverse transcriptase.



SingleShot Cell Lysis RT-qPCR Kits

A complete solution for cell lysis, reverse transcription, and qPCR from cell cultures, without an RNA purification step. Suitable for automation and high-throughput workflows.

bio-rad.com/PCRReagents

* U.S. patent 9,493,824.

** U.S. patents 6,627,424; 7,541,170; 7,560,260; and other issued patents and pending applications in the U.S. and other jurisdictions.

iScript Reverse Transcription Supermix for RT-qPCR

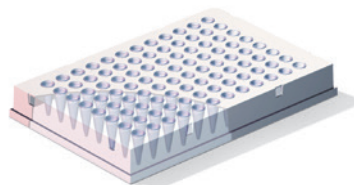
Designed for RT-qPCR, the iScript Reverse Transcription Supermix is a simple, fast, and sensitive first-strand cDNA synthesis kit for gene expression analysis using real-time qPCR.

- Increased reproducibility and reduction of errors — 1-tube format for simple and fast setup and reduced pipetting variability
- Detection of low-level target genes — broad linear dynamic range of total input RNA (1 µg–1 pg) with a highly efficient RNase H+ MMLV reverse transcriptase
- Increased primer design flexibility and unbiased 5' and 3' representation — optimum blend of oligo(dT) and random primers in the 5x supermix for complete RNA coverage

iScript gDNA Clear cDNA Synthesis Kit

The iScript gDNA Clear cDNA Synthesis Kit integrates an effective DNase digestion step with fast and sensitive first-strand cDNA synthesis for accurate qPCR data.

- Fast and efficient — qPCR-ready cDNA free of contaminating gDNA, generated in 36 minutes
- Ready-to-use no-RT control supermix — for monitoring gDNA contamination
- Superior sensitivity and reproducibility — works with a broad linear dynamic range of input total RNA (1 µg–1 pg)
- Unbiased qPCR data — consistent efficiency, sensitivity, and reproducibility in qPCR results even after gDNA removal



Hard-Shell Plate with patented two-component design

PCR Plastics

Bio-Rad offers a large selection of PCR tubes, plate, seals, and accessories that are precisely manufactured for optimal fit and performance in thermal cyclers and real-time PCR systems.

- Produced in Class 10,000 or 100,000 cleanroom environment
- Certified free of DNase, RNase, and human DNA
- Manufactured to ensure extremely uniform wells — reduce well-to-well variability in real-time PCR experiments
- Warp-free Hard-Shell Plates — designed for optimum performance with automation

bio-rad.com/pcrplastics



Go to bio-rad.com/PCRReagentSelector and bio-rad.com/PCRPlasticSelector to use our interactive selection tools to find the right reagents or PCR plastics for your needs.

DETECTION

CFX Opus 96, CFX Opus 384, and CFX96 Touch Deep Well Systems

CFX Real-Time PCR Systems are designed to bring outstanding thermal performance and sensitive optical detection to all of your real-time PCR applications. By pairing proven real-time instruments with quality PCR reagents and powerful analysis software, you can consistently obtain high-quality data to fuel your research discoveries.

- Reliable performance — systems use long-lasting solid-state technology with LEDs and photodiodes for precise quantification and target discrimination
- Low sample and reagent volumes — 4- and 5-target multiplex experiments yield optimal results, using sample volumes as low as 3 µl (CFX Opus 384 System) and as high as 125 µl (CFX96 Touch Deep Well System)

- Unparalleled stand-alone functionality without a computer — quickly set up runs and monitor amplification traces in real time on the integrated LCD touch screen
- Data analysis when and where you want it — receive an email notification with attached data file when each run is complete

CFX Connect System

The CFX Connect System offers two-target analysis with the same reliable performance as the other CFX Real-Time Systems.

- Easy startup — obtain great results right away with factory-calibrated dyes, quick setup, and intuitive software
- Effortless optimization — save time and reduce costs by optimizing assays in a single run using the thermal gradient
- Powerful data analysis tools — accurately and quickly validate and analyze data with the advanced analysis modules of CFX Maestro Software

Specifications



Feature	CFX Opus 96 System	CFX Opus 384 System	CFX96 Touch Deep Well System	CFX Connect System
Capacity	96 wells	384 wells	96 wells	96 wells
Light source	6 LEDs in optics shuttle	5 LEDs in optics shuttle	6 LEDs in optics shuttle	3 LEDs in optics shuttle
Optical detection	6 photodiodes	5 photodiodes	6 photodiodes	3 photodiodes
Excitation range	450–684 nm	450–650 nm	450–684 nm	450–535 nm
Detection range	515–730 nm	515–690 nm	515–730 nm	515–580 nm
Multiplex capability	Up to 5 targets	Up to 4 targets	Up to 5 targets	Up to 2 targets
Maximum gradient span	24°C	24°C	24°C	24°C
Maximum ramp rate	5°C/sec	2.5°C/sec	2.5°C/sec	5°C/sec
Real-time PCR software	CFX Maestro Software 2.0	CFX Maestro Software 2.0	CFX Maestro Software 2.0	CFX Maestro Software 2.0

Automation Solutions

In laboratories where processing large volumes of plates is required, unattended operation is a solution. CFX Real Time PCR Systems are automation and integration ready. CFX Maestro Software has an API that allows for integration with LIMS and configuration into other custom software solutions.

bio-rad.com/qPCR



CFX Maestro Software

CFX Maestro Software is powerful software for a powerful instrument. It provides:

Intuitive software for fast time to results

- Startup wizard and express loading of commonly used plates and protocols
- PrimePCR integration with drag-and-drop ease
- Built in P values for statistical significance tests
- Easy, customizable publication-quality graphing and data views

Practical features for best-practice results and complex workflows

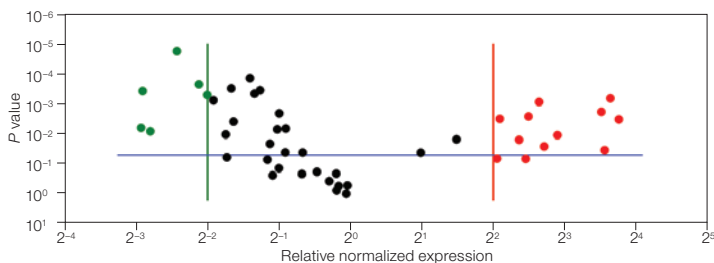
- Gene Study feature for confident combination of multiple runs and analysis of resulting data
- Multiple reference gene normalization
- ANOVA, volcano plot, and other statistics tools
- Reference gene selection tools
- User-specific profiles for quality tests and analysis parameters
- Option to upgrade to Security Edition for improved process compliance

Advanced user control features

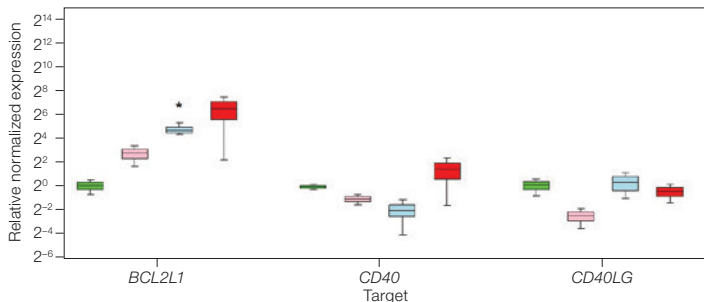
- U.S. FDA 21 CFR Part 11 compliance
- Audit trails that track protocols, analyses, and pertinent changes

CFX Maestro is available in Chinese and Russian languages as well as Mac compatible versions.

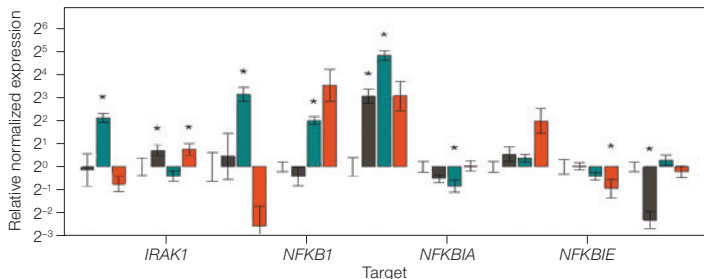
bio-rad.com/CFXMaestro



Volcano plots support rapid identification of genes of interest with statistically significant fold-level changes.

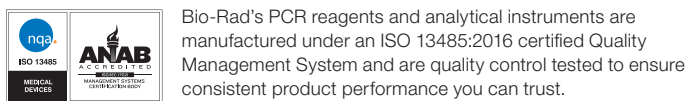

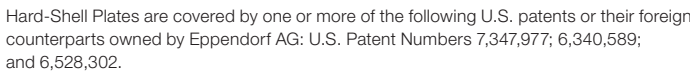
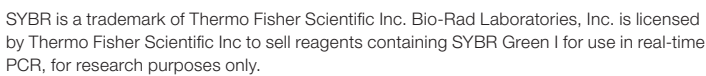



Box and whisker plots provide a visual representation of data medians and quartiles.



Bar charts provide a standard means to view relative normalized gene expression levels and can also be annotated with P values to provide statistical significance of your data.

Ordering Information

Catalog #	Description	Catalog #	Description
Cell Lysis and RNA Isolation		Detection	
7326820	Aurum Total RNA Mini Kit , 50 preps, includes 50 RNA binding columns, 50 capless collection tubes (2.0 ml), 100 capped sample tubes (2.0 ml), 50 capped sample tubes (1.5 ml), 1 vial lyophilized DNase I, RNase-free reagents	12011319	CFX Opus 96 Real-Time PCR System , includes integrated 96-well system, Ethernet cable, USB cable, and power cord
7326800	Aurum Total RNA 96 Kit , 2 x 96-well preps, includes 2 growth membranes, sealing tape, 2 RNA binding plates, 2 collection microplates, 2 vials lyophilized DNase I, RNase-free reagents	17005940	CFX Opus 96 Real-Time PCR System with Starter Pack , includes integrated 96-well system; Ethernet cable; USB cable; power cord; Hard-Shell 96-Well PCR Plates, low-profile, thin-wall, skirted, white well/clear shell; SsoAdvanced Universal SYBR® Green Supermix, 2 x 1 ml; Microseal 'B' Adhesive Seals, 100; CFX Maestro Software
7326830	Aurum Total RNA Fatty and Fibrous Tissue Kit , 50 preps, includes 50 RNA binding columns, 50 capless collection tubes (2.0 ml), 100 capped sample tubes (2.0 ml), 50 capped sample tubes (1.5 ml), 1 vial lyophilized DNase I, RNase-free reagents and plasticware, 50 ml PureZOL RNA Isolation Reagent	12011452	CFX Opus 384 Real-Time PCR System , includes integrated 384-well system, Ethernet cable, USB cable, and power cord
7326880	PureZOL RNA Isolation Reagent , 50 ml, reagent for DNA- and protein-free RNA isolation	17005939	CFX Opus 384 Real-Time PCR System with Starter Pack , includes integrated 384-well system; Ethernet cable; USB cable; power cord; Hard-Shell 384-Well PCR Plates, thin-wall, skirted, clear shell/white well, barcoded; SsoAdvanced Universal SYBR® Green Supermix, 2 x 1 ml; Microseal 'B' Adhesive Seals, 100; CFX Maestro Software
1725085	SingleShot SYBR® Green Kit for Cell Lysis and RT-qPCR , 100 x 50 µl reactions	1855200	CFX Connect Real-Time PCR System with Starter Pack , includes CFX Connect Thermal Cycler Chassis, CFX Connect Optical Reaction Module, CFX Maestro Software, qbase+ Software license, communication cable, reagents, consumables
1725090	SingleShot Probes Kit for Cell Lysis and RT-qPCR , 100 x 50 µl reactions	1854096	CFX96 Touch Deep Well Real-Time PCR System with Starter Pack , includes C1000 Touch Thermal Cycler Chassis, CFX96 Deep Well Optical Reaction Module, CFX Maestro Software, qbase+ Software license, communication cable, reagents, consumables
Reaction Setup		1845075	CFX Automation System II , includes robotic plate handler, mounting plate, barcode scanner, and CFX Automation Control Software; does not include a CFX Real-Time PCR System
1708841	iScript Reverse Transcription Supermix for RT-qPCR , 400 µl (4 x 100 µl vials), 100 x 20 µl reactions	Analysis	
1725038	iScript Advanced cDNA Synthesis Kit , 100 x 20 µl reactions	All software for Windows unless otherwise noted.	
1708891	iScript cDNA Synthesis Kit , 100 x 20 µl reactions	12013758	CFX Maestro Software 2.0
1725271	SsoAdvanced Universal SYBR® Green Supermix , 5 ml (5 x 1 ml vials), 500 x 20 µl reactions	12004128	CFX Maestro Software for Mac
1725281	SsoAdvanced Universal Probes Supermix , 5 ml (5 x 1 ml vials), 500 x 20 µl reactions	12012832	CFX Maestro Software 2.0, Security Edition , 1 license
1725017	SsoAdvanced Universal Inhibitor-Tolerant SYBR® Green Supermix , 5 ml (1 x 5 ml vials), 500 x 20 µl reactions	12013028	CFX Maestro Software 2.0, Security Edition , 5 licenses
12010220	Reliance One-Step Multiplex Supermix , 5 ml (5 x 1 ml vials), 1,000 x 20 µl reactions	12012834	CFX Maestro Software 2.0, Chinese Edition
12010221	Reliance One-Step Multiplex Supermix , 10 ml (2 x 5 ml vials), 2,000 x 20 µl reactions	12012833	CFX Maestro Software 2.0, Russian Edition
1725120	iTaq Universal SYBR® Green Supermix , 2 ml (2 x 1 ml vials), 200 x 20 µl reactions	1845025	Precision Melt Analysis Software , 2 user licenses, data analysis software for all CFX Real-Time PCR Systems, 2 HASP HL keys, calibration kit
1725151	iTaq Universal SYBR® Green One-Step Kit , 5 ml (5 x 1 ml vials), 500 x 20 µl reactions	Visit bio-rad.com/genomics for more information.	
1725130	iTaq Universal Probes Supermix , 2 ml (2 x 1 ml vials), 200 x 20 µl reactions		
1725141	iTaq Universal Probes One-Step Kit , 5 ml (5 x 1 ml vials), 500 x 20 µl reactions		
1725160	SsoAdvanced PreAmp Supermix , 1.25 ml (1 x 1.25 ml vial), 50 x 50 µl reactions		
HSP9601	Hard-Shell Thin-Wall 96-Well Skirted PCR Plates , white shell/clear well, 50		
HSP3805	Hard-Shell Thin-Wall 384-Well Skirted PCR Plates , clear shell/white well, 50		
MSB1001	Microseal 'B' Adhesive Seals , optically clear, 100		
MSF1001	Microseal 'F' PCR Plate Seal , foil, pierceable, 100		
TCS0803	Optical Flat 8-Cap Strips , for 0.2 ml PCR tubes and plates, ultraclear, 120		
1814000	PX1 PCR Plate Sealer , includes heat sealing instrument, plate support block that holds 96-well and 384-well plates, sealing frame, power cord		



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