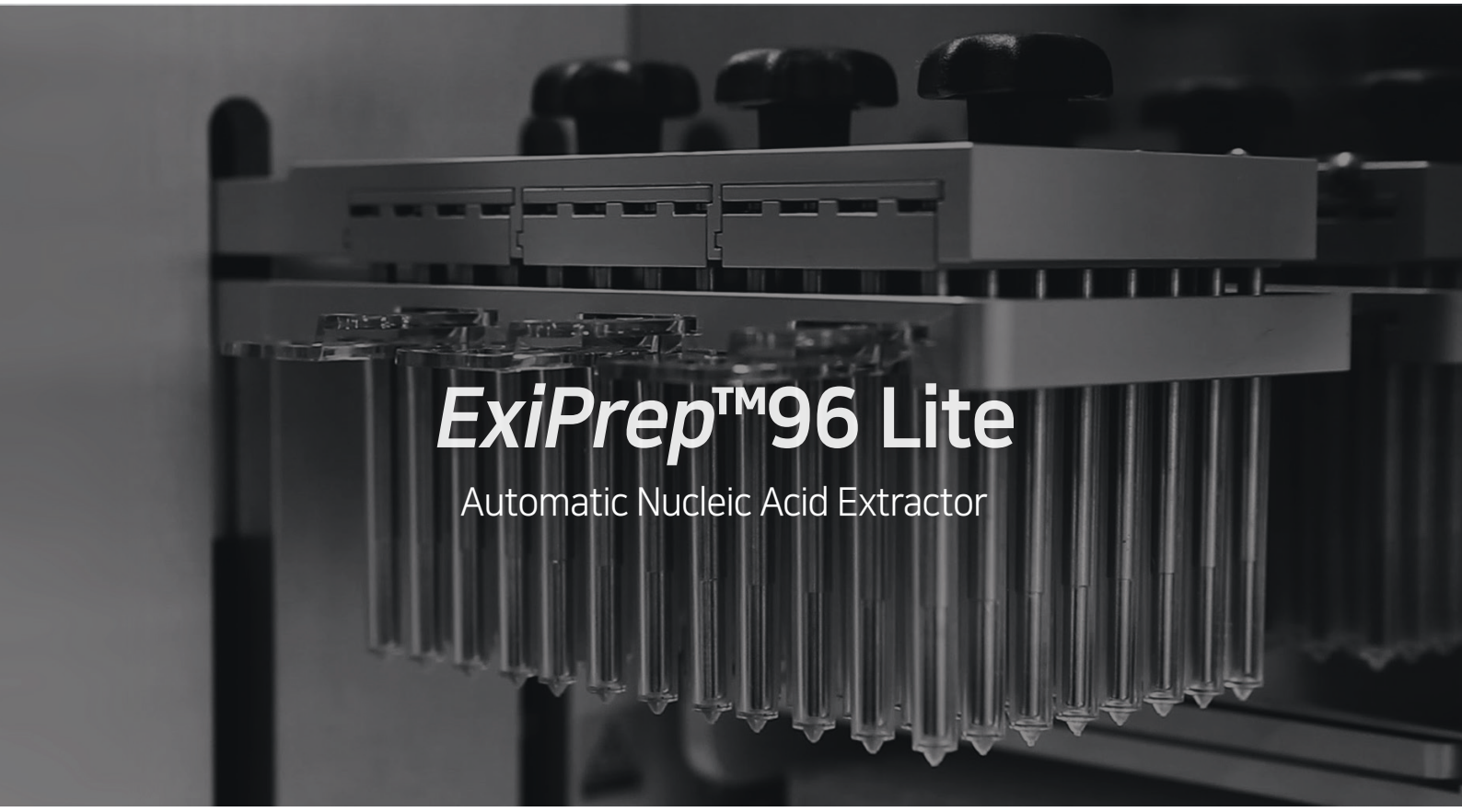
20220610 | Ver.2 (EN)

ExiPrep™96 Lite

Automated sample preparation for DNA, RNA

BIONEER
Innovation • Value • Discovery

Bioneer Corporation is Korea's leading biotech company.
Bioneer is the first Korean biotechnology company when it was established in 1992.

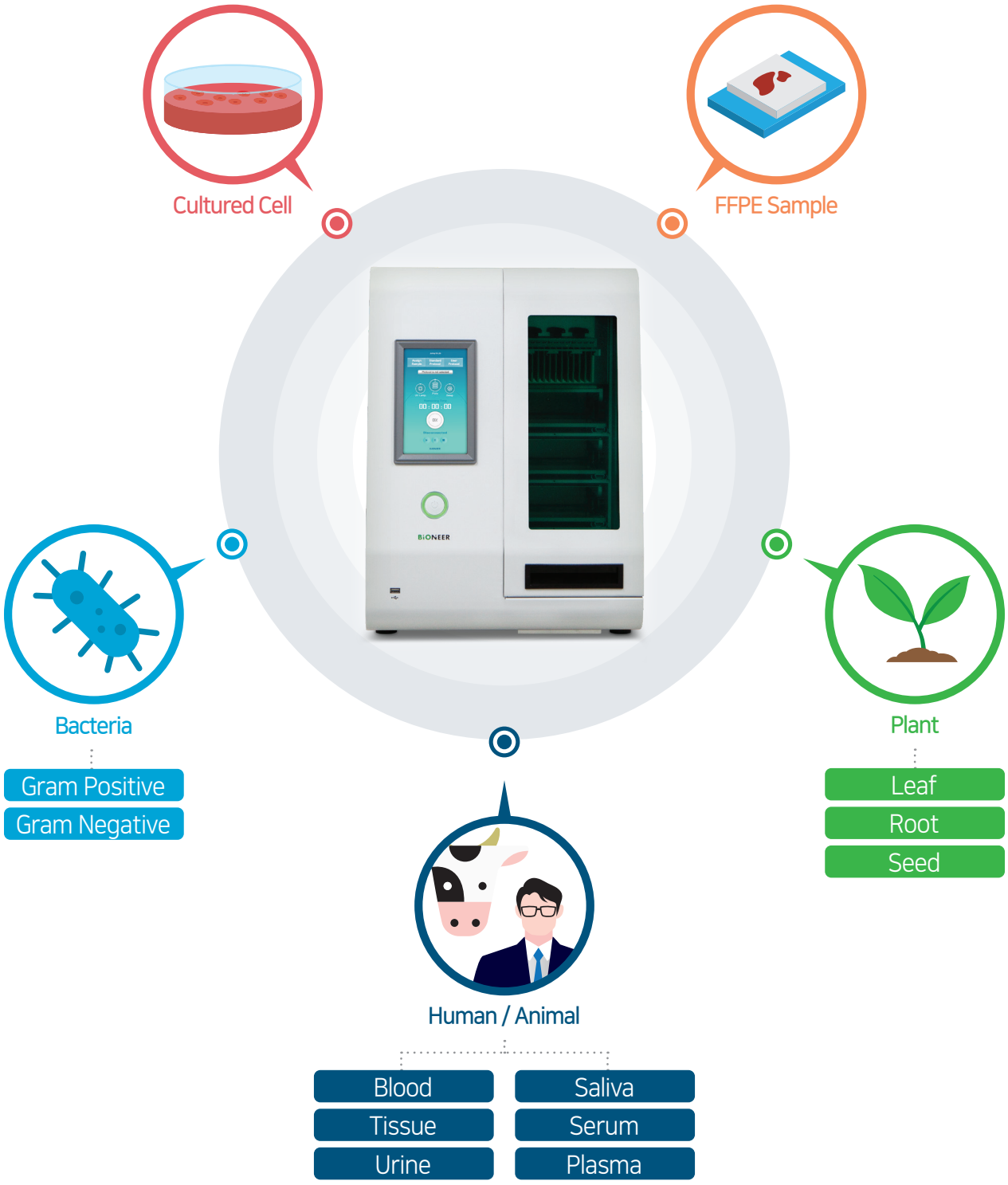


ExiPrep™96 Lite

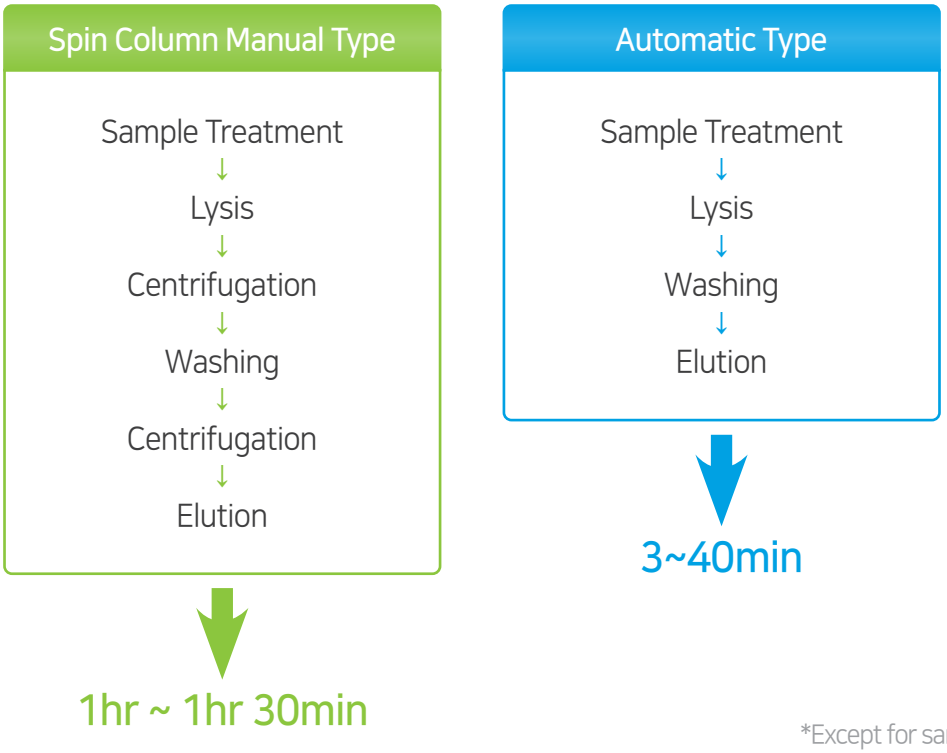
Automatic Nucleic Acid Extractor

- Fast Extraction Time
- Comprehensive Use
- Compact Size
- Contamination Protection
- Easy Operation

Compatible Samples



Fast Extraction Time



Fully automated nucleic acid extraction **reduces human error** rates during experiments.

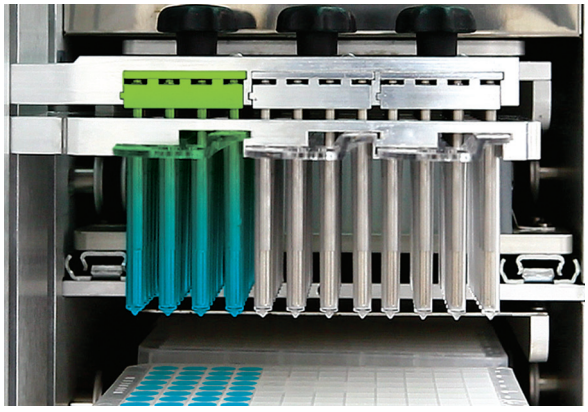
Competitor Comparison (Automated Nucleic Acid Extractor)

	Bioneer	Company Q	Company R	Company T
Protocol Time	DNA: 30 min RNA, cfDNA: 40 min Protein: 60 min	24 samples: 34-90 min 96 samples: 73-140 min	200 µl sample vol.: 50 min 500 µl sample vol.: 80-90 min	8 samples: 60 min 32 samples: 100 min

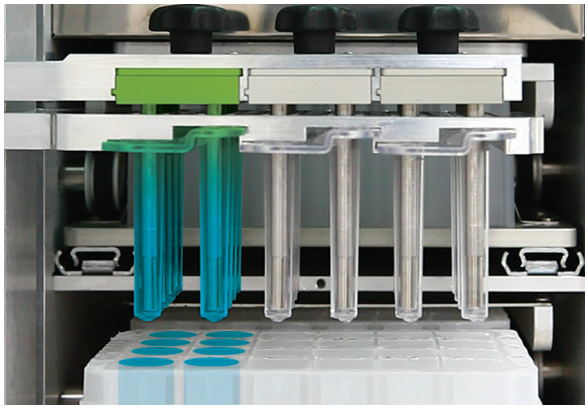
*Except for sample treatment

Comprehensive Use

Sample count and test volume options for single run



32-96 extraction in mini scale
from sample of up to 0.4ml*

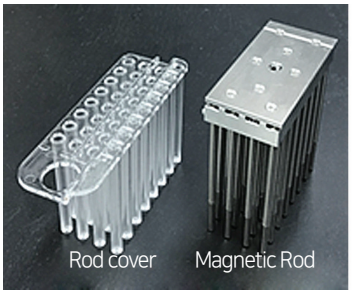


2-24 extractions in midi scale
from sample of up to 4ml*

* The recommended dose varies on the samples and kit used.

Mini-scale

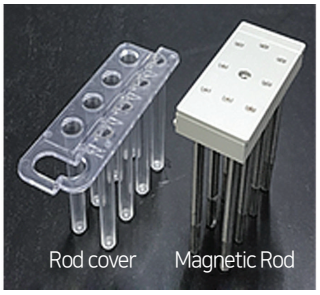
For 96-well plate



96-well plate

Midi-scale

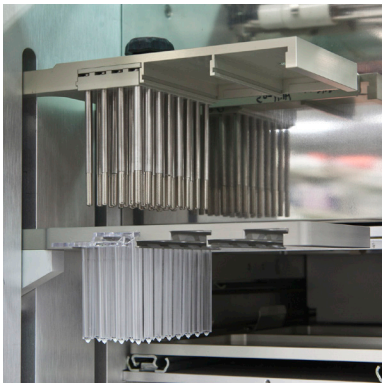
For 24-well plate



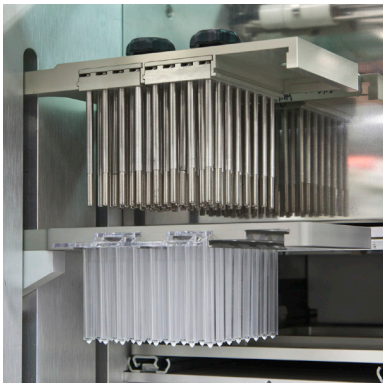
24-well plate

① Mini-scale Nucleic Acid Extraction

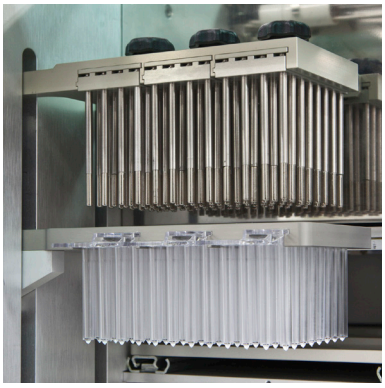
- Choose 32, 64, 96 Samples



One set of rods and a cover
for 32 samples



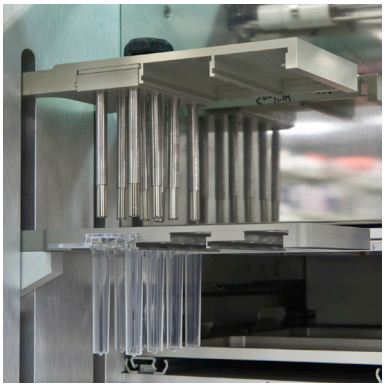
Two sets of rods and covers
for 64 samples



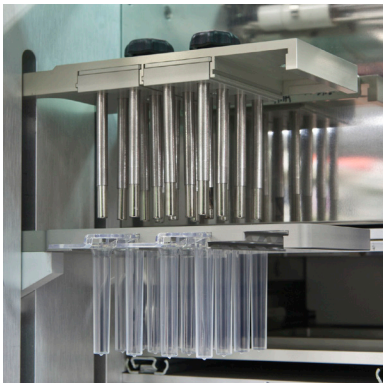
Three sets of rods and covers
for 96 samples

② Midi-scale Nucleic Acid Extraction

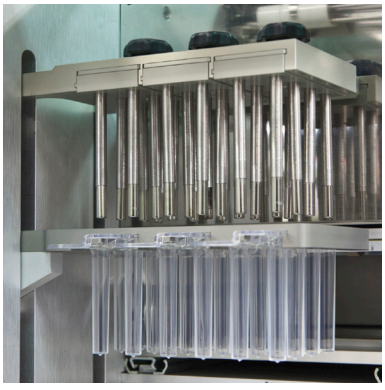
- Choose 8, 16, 24 Samples
- Useful for extracting cell-free DNA



One set of rods and a cover
for 8 samples



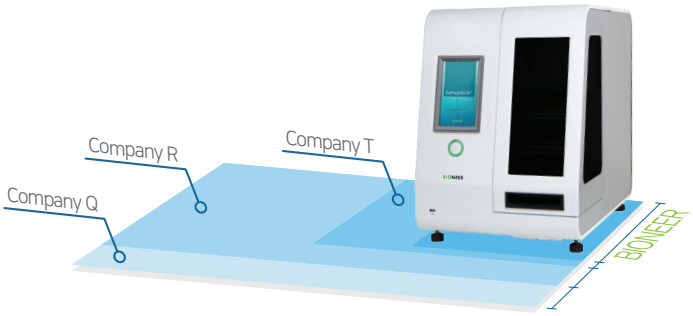
Two sets of rods and covers
for 16 samples



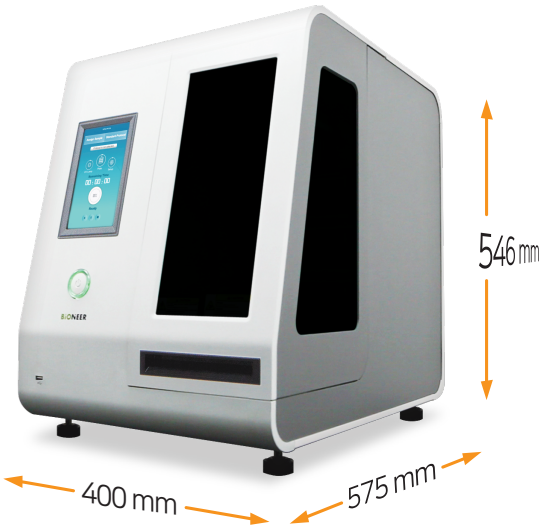
Three sets of rods and covers
for 24 samples

Compact Size

Enhanced spatial efficiency



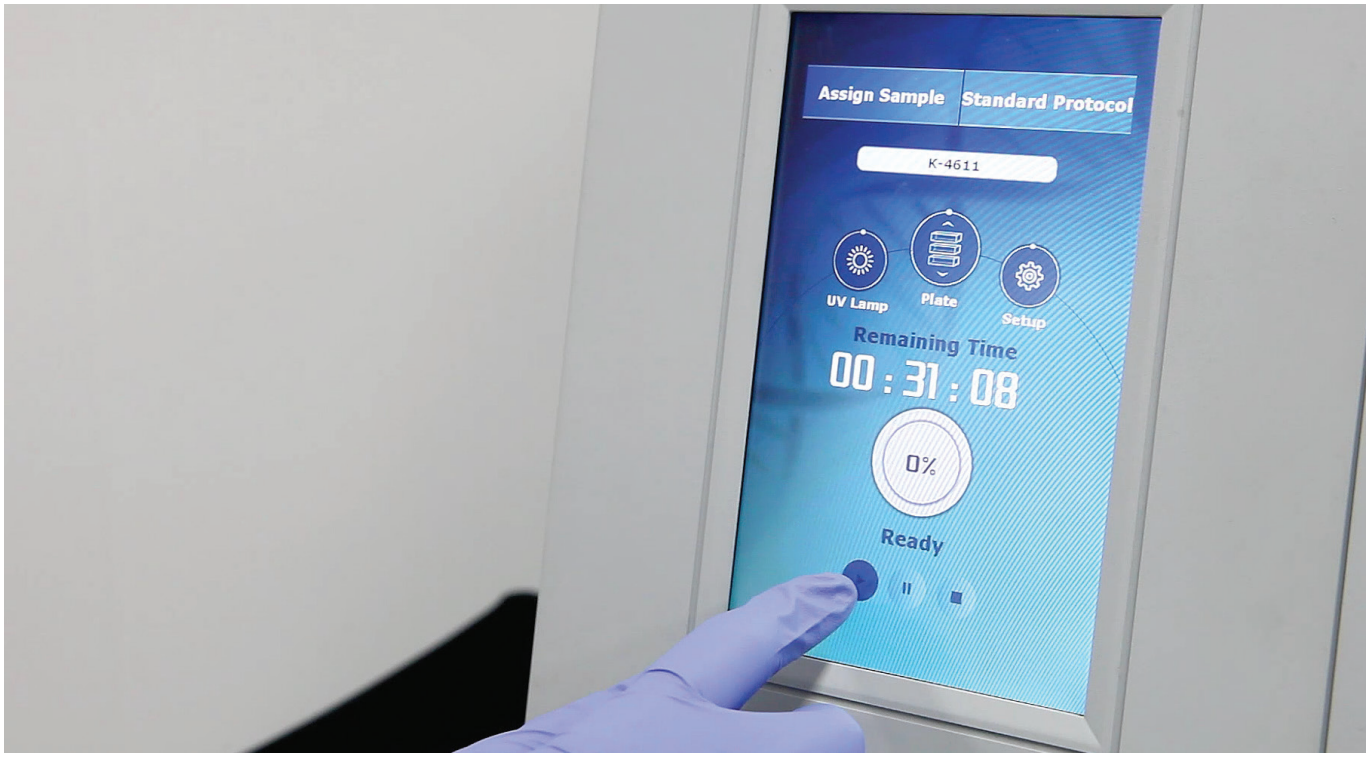
Smallest footprint of all instruments
for nucleic acid extraction



Contamination Protection

Parts such as UV lamp, contamination shield, etc. help to prevent contamination

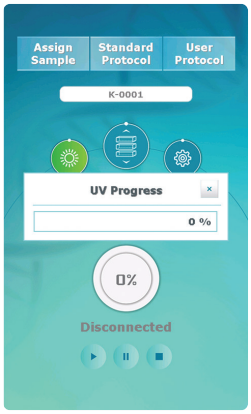
Easy Operation



UI of *ExiPrep*™96 Lite

Protocol setting

Device operation



UV progress

- Touch-screen system
- Built-in Optimized protocols
- Customizable options available

ExiPrep™96 Lite Kits

Cat. No.	List of Kits
K-3603	*MagListo*™ 5M Genomic DNA Extraction Kit
K-3613	*MagListo*™ 5M Universal RNA Extraction Kit
K-3615	*MagListo*™ 5M Forensic sample DNA Extraction kit
K-3619	*MagListo*™ 5M cfDNA Extraction Kit
K-3623	*MagListo*™ 5M Viral DNA/RNA Extraction Kit

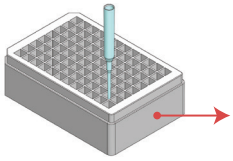
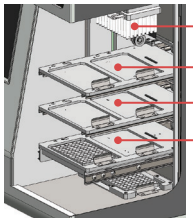
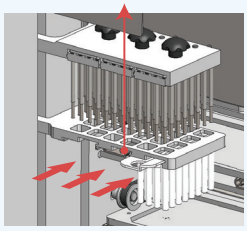
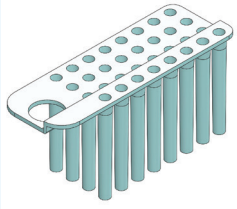
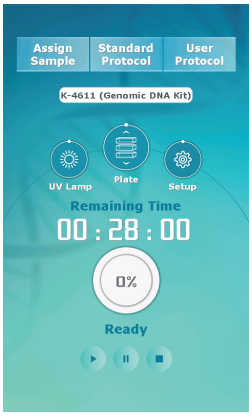
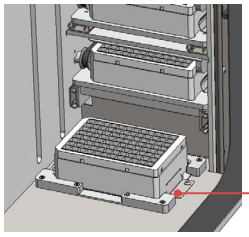
Selection Guide

			K-3603	K-3613	K-3615	K-3619	K-3623
Sample Type	Cell		V	V			
	Tissue		V	V			
	Bacteria		V				
	Blood		V				
	FFPE*		V				
	Swab						V
	Sputum						V
	Body fluid	Serum				V	V
		Plasma				V	V
		Saliva				V	
		Urine				V	
	Forensic sample	Dried body fluid spot			V		
		Hair			V		
		Bone & teeth			V		
		Chewing gum			V		
		Cigarette butts			V		
		Buccal swab			V		

* FFPE DNA requires a pretreatment buffer.

Automation of Nucleic acid extraction using *ExiPrep*™96 Lite

- To apply *MagListo*™ series to *ExiPrep*™96 Lite (A-5250), please refer to the guide below.
- For more information, please visit www.bioneer.com and refer to User's Guide of the product.

Step	Image	Description
Prepare buffer cartridge		Dispense adequate volume of buffers and samples to 96-well dome plate (Cat. No. 90060, 90061, 90062, 90063).
Set up		❶ Touch "Plate icon" to open "Buffer Cartridges Layer". ❷ Set up the buffer cartridge on "Buffer Cartridges Layer" of *ExiPrep*™96 Lite.
	Rod Cover Plate  Magnetic Rod Cover 	❶ Touch "Plate icon" to open "Rod Cover Plate". ❷ Set the magnetic rod cover to "Magnetic Rod Cover Plate" of *ExiPrep*™96 Lite.
Select protocol		❶ Touch "Standard Protocol". Standard Protocol ❷ Select adequate protocol for your sample. ❸ Touch "select icon".
Run protocol		❶ Touch "Run icon". ❷ Nucleic acid extraction will proceed automatically and it takes about 30 ~ 50 min depending on the protocol.
Purified nucleic acid		❶ Purified nucleic acid will be in elution buffer cartridge (on the bottom of *ExiPrep*™96 Lite).

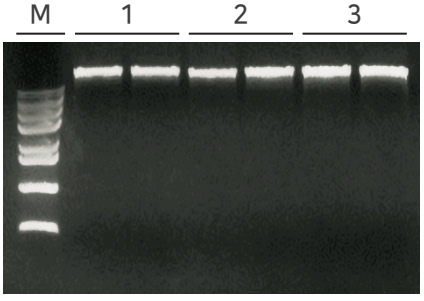
MagListo™ 5M Genomic DNA Extraction Kit

MagListo™ 5M Genomic DNA Extraction Kit allows fast extraction of genomic DNA using Magnetic Nanobeads from various samples such as blood, animal tissues and cultured cells. The isolated genomic DNA may be used for a wide range of experiments such as gene cloning, PCR, quantitative real time PCR, southern blotting, etc.

Key Features	▪ Isolation of genomic DNA from samples such as blood, cultured cells, animal tissues, bacteria (Gram (-), (+)) and etc. ▪ A wide range of possible sample sizes even with a cell count less than 10^4
Application	▪ Gene cloning ▪ PCR ▪ Real-time PCR ▪ Southern blotting ▪ SNP genotyping

Experimental Data

Genomic DNA Extraction from Human Whole Blood

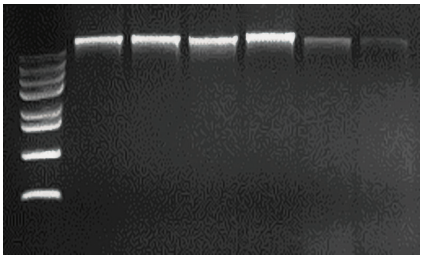


	Conc.(ng/μl)	$A_{260/280}$	$A_{260/230}$
1	22.49	1.77	0.97
	22.17	1.83	0.96
2	23.03	1.78	0.67
	29.95	1.71	0.52
3	30.34	1.84	1.60
	32.34	1.71	0.93

* Elution Volume: 100 μl

Figure 1. Blood genomic DNA extraction using *MagListo*™ Genomic DNA Extraction Kit. DNA extraction from 200 μl of human whole blood.
* Company Q Kit does not use RNase.
Lane 1: *MagListo*™ (Manual type, Bioneer)
Lane 2: *ExiPrep*™96 Lite (Bioneer)
Lane 3: Company Q (Manual type)
M: Bioneer 1 kb Ladder

Genomic DNA Extraction from Animal Tissue (Beef)

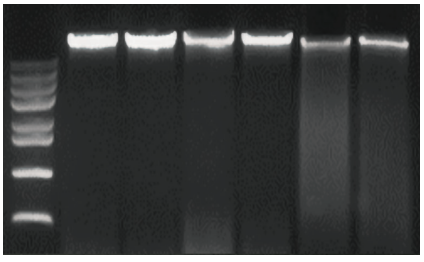


	Conc.(ng/μl)	$A_{260/280}$	$A_{260/230}$
1	30.28	1.78	1.18
	29.41	1.71	1.14
2	36.88	1.83	1.06
	34.96	1.82	1.07
3	26.70	1.97	1.16
	21.66	1.98	1.77

* Elution Volume: 100 μl

Figure 2. Animal tissue genomic DNA extraction using *MagListo*™ Genomic DNA Extraction Kit. DNA extraction from 30 mg of Beef.
Lane 1: *MagListo*™ (Manual type, Bioneer)
Lane 2: *ExiPrep*™96 Lite (Bioneer)
Lane 3: Company Q (Manual type)
M: Bioneer 1 kb Ladder

Genomic DNA Extraction from Cultured Cell (HeLa)



	Conc.(ng/μl)	$A_{260/280}$	$A_{260/230}$
1	119.34	1.95	2.16
	113.04	1.96	2.17
2	149.77	1.99	2.01
	121.03	1.98	1.95
3	194.18	2.07	2.20
	179.81	2.03	2.04

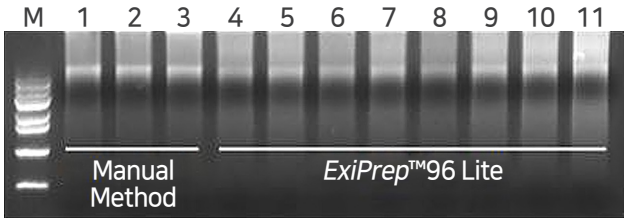
* Elution Volume: 100 μl

Figure 3. Cultured cell genomic DNA extraction using *MagListo*™ Genomic DNA Extraction Kit. DNA extraction from 1×10^6 of HeLa cell.
* Company Q Kit does not use RNase.
Lane 1: *MagListo*™ (Manual type, Bioneer)
Lane 2: *ExiPrep*™96 Lite (Bioneer)
Lane 3: Company Q (Manual type)
M: Bioneer 1 kb Ladder

MagListo™ 5M Genomic DNA Extraction Kit

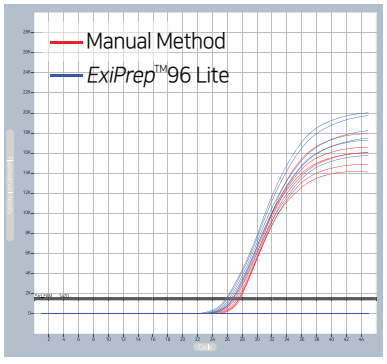
Application on FFPE DNA Extraction

A



Sample	Conc. (ng/μl)	$A_{260/280}$	$A_{260/230}$
1	38.9	1.84	1.83
2	38.9	1.82	1.84
3	38.1	1.84	1.82
4	31.1	1.94	1.63
5	35.7	1.82	1.77
6	36.3	1.86	1.53
7	39.0	1.81	1.63
8	36.9	1.88	1.73
9	39.9	1.83	1.66
10	47.2	1.83	1.72
11	53.3	1.84	1.83

B



	Sample #		Sample #2		Sample #3	
	M	96	M	96	M	96
Ct	28.33	27.11	27.61	25.77	27.82	27.51
	27.91	26.76	28.07	26.38	26.46	26.74
	27.77	25.87	27.87	27.09	26.37	26.95
Average	28.00	26.58	27.85	26.41	26.88	27.07
CV (%)	1.04	2.41	0.83	2.5	3.02	1.47

*M: Manual Method (*MagListo*™) *96: *ExiPrep*™96 Lite

Figure 4. FFPE DNA extracted by using Manual method and *ExiPrep*™96 Lite.

(A) Gel electrophoresis and NanoDrop measurement of FFPE DNA. FFPE DNA was isolated with *MagListo*™ genomic DNA Extraction kit by manual method (lane 1-3) and *ExiPrep*™96 Lite (lane 4-11).

(B) qPCR quantification of FFPE DNA extracted by manual method and *ExiPrep*™96 Lite. Mouse housekeeping gene *Cox6* primers and probe were used for qPCR.

Specifications

		Mini-Scale	Midi-Scale
Expected DNA Yield	Whole blood	200 μl (< 10 μg)	2 ml (< 80 μg)
	Cultured cell	Up to 1 x 10^6 (< 12 μg)	Up to 5 x 10^6 (< 60 μg)
	Animal tissue	Up to 25 mg (< 10 μg)	Up to 100 mg (< 40 μg)
	Bacteria (Gram (-),(+))	Up to 1 x 10^9 (< 15 μg)	Up to 5 x 10^9 (< 80 μg)
Expected Purity		$A_{260/280}$ > 1.8	
Elution Volume		≥ 100 μl	
Protocol Time		About 30 min	
Pretreatment	Cultured Cell, Body Fluid	No pretreatment required	
	Tissue, FFPE Sample	Homogenization or deparaffinization is required.	

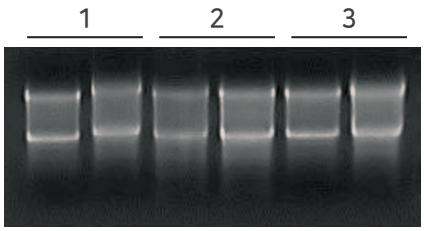
MagListo™ 5M Universal RNA Extraction Kit

MagListo™ 5M Universal RNA Extraction Kit allows rapid extraction of total RNA using Magnetic Nanobeads from various animal tissues, plant tissues and cultured cells. The isolated RNA can be used for a wide range of experiments such as RT-PCR, Quantitative Real time RT-PCR, microarray analysis, etc.

Key Features	▪ Isolation of total RNA from various types of animal tissues and cultured cells
Application	▪ RT-PCR and real-time RT-PCR ▪ cDNA synthesis ▪ Northern blot analysis ▪ Primer extension ▪ Microarray

Experimental Data

RNA Extraction from Animal Tissue (Mouse kidney)

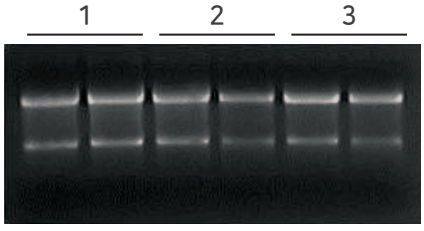


	Conc.(ng/μl)	$A_{260/280}$	$A_{260/230}$
1	511.0	2.08	2.26
	510.9	2.05	2.24
2	690.2	2.03	2.41
	694.4	2.07	1.91
3	461.7	2.12	1.89
	490.1	2.10	2.01

* Elution Volume: 100 μl

Figure 1. Animal tissue RNA extraction using *MagListo*™ 5M Universal RNA Extraction Kit. RNA extraction from 20 mg of *Mus musculus* liver. DNase was not treated.
Lane 1: *MagListo*™ (Manual type, Bioneer)
Lane 2: *ExiPrep*™96 Lite (Bioneer)
Lane 3: Company Q (Manual type)

RNA Extraction from Cultured Cell (HeLa)

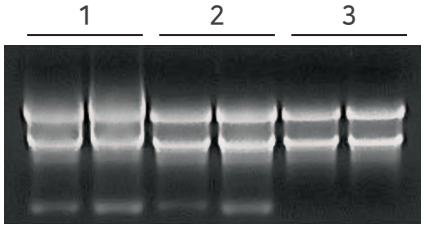


	Conc.(ng/μl)	$A_{260/280}$	$A_{260/230}$
1	249.9	2.08	2.19
	282.8	2.05	2.24
2	188.2	2.04	1.86
	250.8	2.03	1.98
3	228.6	2.07	2.17
	205.2	2.08	1.54

* Elution Volume: 100 μl

Figure 2. Cultured cell RNA extraction using *MagListo*™ 5M Universal RNA Extraction Kit. RNA extraction from 1×10^6 of HeLa cell. DNase was not treated.
Lane 1: *MagListo*™ (Manual type, Bioneer)
Lane 2: *ExiPrep*™96 Lite (Bioneer)
Lane 3: Company Q (Manual type)

RNA Extraction from Plant Tissue (*Brassica oleracea*)



	Conc.(ng/μl)	$A_{260/280}$	$A_{260/230}$
1	753.8	2.20	2.23
	703.8	2.15	1.76
2	704.2	2.16	2.40
	823.1	2.17	2.43
3	635.4	2.19	2.00
	642.8	2.18	1.01

* Elution Volume: 100 μl

Figure 3. Plant RNA extraction using *MagListo*™ 5M Universal RNA Extraction Kit. RNA extraction from 100 mg of *Brassica oleracea var. italica*. DNase was not treated.
Lane 1: *MagListo*™ (Manual type, Bioneer)
Lane 2: *ExiPrep*™96 Lite (Bioneer)
Lane 3: Company Q (Manual type)

Specifications

	Mini-Scale	Midi-Scale
Expected DNA Yield	Up to 100 μg	Up to 500 μg
Expected Purity	$A_{260/280}$ > 2.0 $A_{260/230}$ > 1.7	
Elution Volume	≥ 100 μl	
Protocol Time	About 40 min	
Pretreatment	**Tissue (Plant, Animal)**: Homogenization, **Bacteria:** Proteinase K, Bead beating **Cultured Cell:** No treatment required	

MagListo™ 5M Forensic Sample DNA Extraction Kit

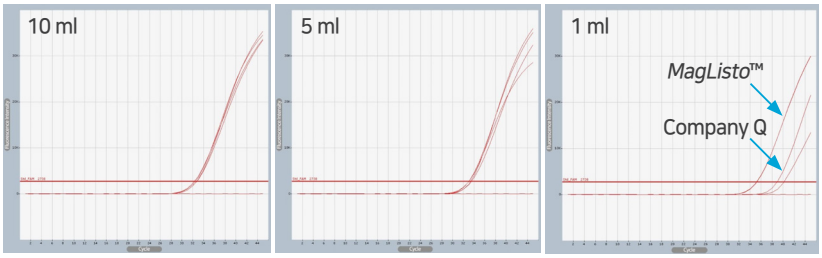
MagListo™ Forensic Sample DNA Extraction Kit allows rapid extraction of total DNA using Magnetic Nanobead from various forensic samples with ease. The isolated DNA can be used for a wide range of experiments such as PCR, quantitative real time PCR, SNP genotyping and STR analysis.

Key Features	▪ Utilization of Magnetic Nanobead for total DNA extraction from a broad range of forensic samples (whole blood, saliva, urine, fingerprints, hair, nails, bones, etc.)
Application	▪ PCR ▪ Real-time PCR ▪ SNP genotyping ▪ STR analysis

Experimental Data

(A) Urine

▪ Sample : Urine 1 ~ 10 ml ▪ Kit : *MagListo*™ 5M Forensic Sample DNA Extraction Kit, Company Q
▪ Premix : *AccuPower*® Plus *DualStar*™ qPCR PreMix (Cat.No. K-6600) ▪ Target : GAPDH

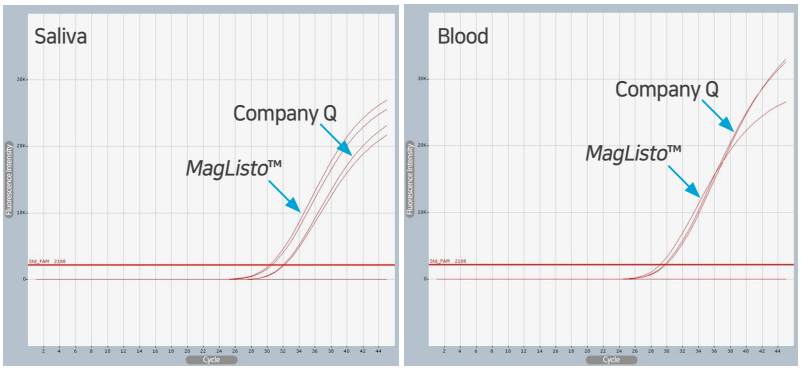


Sample	Sample			
	10 ml	5 ml	1 ml	NTC
MagListo™	32.79	33.53	35.24	U.D.
	32.33	33.08	35.21	
Company Q	32.48	33.36	38.93	
	32.76	33.08	40.16	

Figure 1. Comparison of real-time PCR data of DNA extracted using *MagListo*™ 5M Forensic Sample DNA Extraction Kit and Company Q kit. DNA extraction from 1 ~ 10 ml of Urine.

(B) Saliva (10 µl) & Blood (10 µl) stains from clothes (7 mm diameter)

▪ Sample : Blood and saliva stains (7mm diameter) ▪ Kit : *MagListo*™ 5M Forensic Sample DNA Extraction Kit, Company Q
▪ Premix : *AccuPower*® Plus *DualStar*™ qPCR PreMix (Cat.No. K-6600) ▪ Target : GAPDH



Sample	Kit	
	MagListo™	Company Q
Saliva	30.30	32.05
	30.60	32.14
Blood	29.15	29.69
	29.14	29.89
NTC	U.D.	
	U.D.	

Figure 2. Comparison of real-time PCR data of DNA extracted using *MagListo*™ 5M Forensic Sample DNA Extraction Kit and Company Q kit. DNA extraction from Saliva and Blood stains from clothes (7 mm diameter)

Specifications

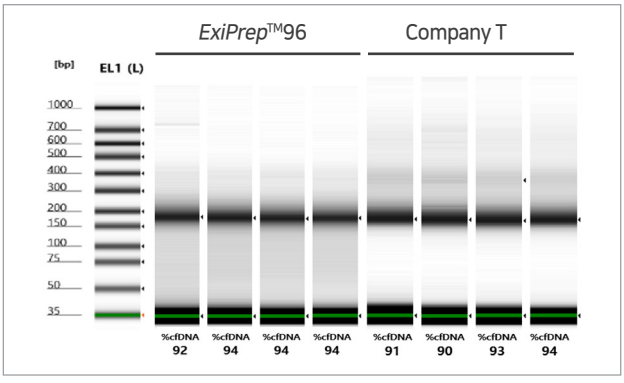
Feature	Specification
Sample type	Various kind of forensic sample
Hands-on time	< 10 min
Expected purity	$A_{260/280}$ > 1.8

MagListo™ 5M cfDNA Extraction Kit

MagListo™ 5M cfDNA Extraction Kit allows rapid extraction of cell-free DNA using Magnetic Nanobeads from various samples such as plasma, serum, urine, and saliva. The magnetic separation allows easier isolation and purification of cell-free DNA from crushed cell products than centrifugation separation.

Key Features	▪ A broad range of cell-free DNA extraction from samples such as plasma, serum, urine, saliva, etc.
Application	▪ Gene cloning ▪ Real-time PCR ▪ Digital PCR ▪ Next-generation sequencing (NGS)

Experimental Data



	% cfDNA	Avg. Size [bp]	Range Con.		
			Conc. [pg/ul]	Avg.	SD
ExiPrep™ 96	92	181	118	114.5	2.7
	94	175	115		
	94	174	113		
	94	175	112		
Company T	91	252	97	105.7	10.6
	90	253	102		
	93	244	103		
	94	246	121		

Figure 1. Comparison of cfDNA concentration purified with *ExiPrep*™ 96 Lite and competitive kit.
Cell-free DNA was isolated from normal human serum using *ExiPrep*™ 96 Lite and Company T kit with manual type. DNA was quantified and visualized using Agilent 4150 TapeStation System.

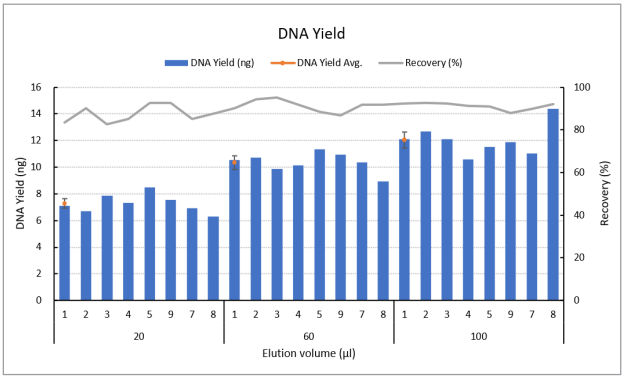


Figure 2. Cell-free DNA yield and recovery according to elution volume using *ExiPrep*™ 96 Lite.
To compare the yield and recovery of cfDNA according to the elution volume, it was divided into 20 µl, 60 µl, and 100 µl, and tested 8 times per elution sample.
Experimental results showed that the total DNA yield improved as the elution volume increased. Recovery was over 80% overall.

Specifications

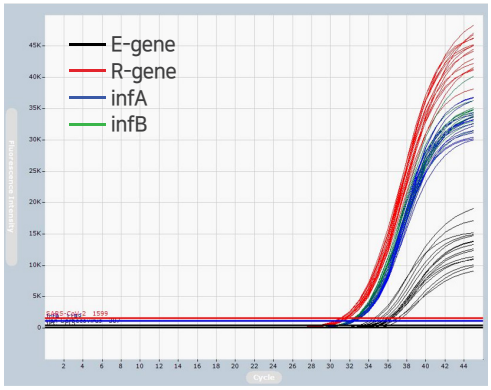
	Midi-Scale
Expected DNA Yield	~ 15 ng
Elution Volume	≥ 100 µl
Protocol Time	About 40 min
Pretreatment	Proteinase K Treatment is required.

MagListo™ 5M Viral DNA/RNA Extraction Kit

MagListo™ 5M Viral DNA/RNA Extraction Kit is designed to extract viral DNA/RNA from cell free body fluid (serum, plasma, CSF, saliva, and etc.) and swab, using Magnetic Nanobeads. *MagListo*™ 5M Viral DNA/RNA Extraction Kit enables easier and faster extraction of viral DNA/RNA in high purity rather than that of a centrifugation.

Key Features	▪ Highly-pure viral DNA/RNA extraction from various samples such as serum, plasma, CSF, saliva, swab, etc. ▪ Provided poly (A) can protect RNA degradation during the extraction steps and enhance the binding efficiency
Application	▪ cDNA synthesis ▪ RT-PCR ▪ Real-time PCR ▪ poly A+ RNA selection ▪ Northern blot analysis

Experimental Data



Target	E gene	R gene	infA gene	infB gene
Average Ct	33.53	35.63	34.23	33.98
CV(%)	0.71	2.12	0.44	0.68

Figure 1. Real-Time RT-PCR data of E-gene/R-gene/infA/infB RNA in VTM media using *MagListo*™ 5M Viral DNA/RNA Extraction kit(K-3624) by *ExiPrep*™96 Lite.

The regular results indicate that nucleic acids extraction produce high reproducibility by *MagListo*™ 5M Viral DNA/RNA Extraction kit(K-3624) using *ExiPrep*™96 Lite.

Specifications

Feature	Specification
Sample type	Serum, plasma, CSF, saliva
Starting sample volume	Up to 400 µl
Minimum elution volume	100 µl
Preparation time	~ 40 min

Specification

Physical specification

Dimension(cm)	40(W)X57.5(D)X54.6(H)
Weight	46 Kg
Voltage / Frequency	100-240V~ , 50/60Hz
Power	500VA Max (Fuse: 250V, F6:3AL, 2ea)

Physical specification

Heating block	30~90℃
Temperature controlled block	4~90℃
Operating temperature	15~35℃
Operating humidity	20~80%, no condensation
Operating system	Built-in
Communication	TCP/IP
User interface Display	7 inch Touch screen
Data Storage	USB 2.0 (x2)

Plastic Consumable List

Cat.No.	Produt Description	Amount
90061	96 Well Deep Plate-Dome	10 ea/pk
90062		50 ea/pk
90063		100 ea/pk
90068	24 Well Deep Plate	10 ea/pk
90069		50 ea/pk
90070		100 ea/pk
90201	Magnetic Rod Cover (32 well) for *ExiPrep*™96 Lite	12 ea/pk, 4 pk/Box
90202	Magnetic Rod Cover (8 well) for *ExiPrep*™96 Lite	12 ea/pk, 4 pk/Box
3111-4110	Adhesive Optical Sealing Film	100 sheets

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