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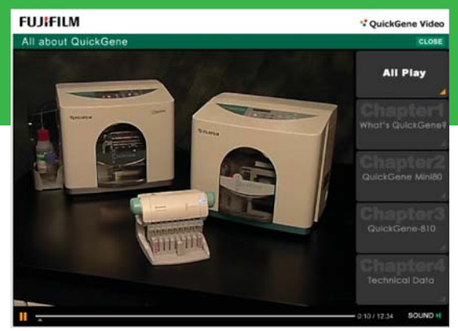
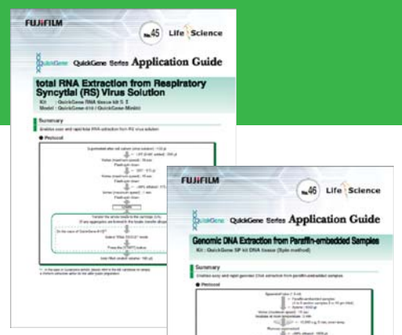
QuickGene Video
“All about QuickGene”



NOW SHOWING!

Application Guide
“No.2-49”



Available on our website

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FUJIFILM

Life Science

Nucleic Acid Isolation System Selection Guide

For QuickGene Selection Guide

2008.5

QuickGene Series

Covers a wide range of areas to realize your ideas.

The “QuickGene” series uses a porous membrane developed through the application of FUJIFILM’s membrane production technology to realize high purity and high yield in nucleic acid extraction. Versatile extraction kits support various samples to expand the application and possibility of DNA / RNA extraction, from basic research to medicine, food, agriculture and forensic criminal investigations.

Extraction kits features

Quick and easy DNA / RNA extraction with QuickGene kits

All-In-One Package

Sample preparation can be conducted with the reagents, enzymes and vessels included in a single package. Nucleic acid extraction can be conducted as soon as the kits arrive.

No hazardous organic solvents

The cartridges and solvents are all supplied without DNase and RNase to avoid contamination. Environmentally friendly extraction can be conducted without using hazardous organic solvents.

Store at room temperature

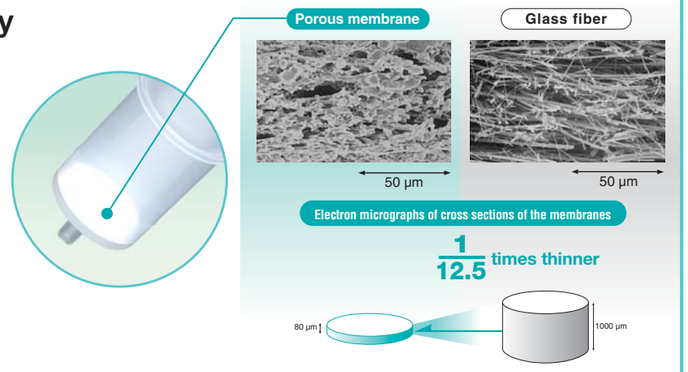
Store the reagents at 15˚C ~ 28˚C. No need for refrigerated storage.
*For enzyme reagents, refrigerated storage is recommended after use.

Compact size

To minimize space requirements, all necessary items are packaged in a single compact package. Kit S for QuickGene-810 / Mini80, SP kit contains 96 samples, and kit L for QuickGene-610 contains 48 samples.

Core technology for high-purity and high-yield extraction

The nucleic acid adsorptive medium used in QuickGene series is a porous membrane developed through application of FUJIFILM’s advanced polymer membrane production technology. It is only 80 µm thick, making it incomparably thinner than conventional glass fibers. Because of the outstanding adsorptive and desorptive performances of the membrane, nucleic acid can be rapidly and reliably extracted at low pressure without being damaged, which realizes high-quality nucleic acid extraction.



One for each person

QuickGene-Mini80

Features

The series' smallest system enabling nucleic acid extraction through simple operation; just set the sample and rotate the pressurizing switch. No need to move from the lab bench throughout the extraction.

Features

compact | reasonably priced

Extraction kits (seven)

DNA	whole blood; tissue; plasmid II
RNA	blood cell; tissue II; cultured cell; cultured cell HC

Specifications

Overview
- Throughput: 1 to 8 samples per run

Operating conditions
- Supply voltage: AC 100-240 V
- Power supply frequency: 50/60 Hz
- Temperature: 15-30˚C
- Humidity: 30-80 % (non-condensing)

Physical specifications
- Dimensions: 280 (W) x 220 (D) x 180 (H) mm
- Weight: Approx. 3 kg

Desktop multifunction model

QuickGene-810

Features

A multifunctional automated system realizing high-purity high-yield DNA / RNA extraction from varied samples (human, mouse, wheat, E.coli, cell, etc.).

Features

automated | multifunctional

Extraction kits (seven)

DNA	whole blood; tissue; plasmid II
RNA	blood cell; tissue II; cultured cell; cultured cell HC

Specifications

Overview
- Automated stages: Sample binding, washing and elution
- Throughput: 1 to 8 samples per run
- Display: LCD (16 characters x 1 line)

Operating conditions
- Supply voltage: AC 100-240 V
- Power supply frequency: 50/60 Hz
- Temperature: 15-30˚C
- Humidity: 30-80 % (non-condensing)
- Power Consumption: 65 W

Physical specifications
- Dimensions: 450 (W) x 330 (D) x 400 (H) mm
- Weight: Approx. 21 kg

Options
- Carriage sets
- Sample tube rack (sold in sets of 4)

Series' largest extraction scale

QuickGene-610L

Features

A stable high-purity high-yield extraction system, enabling automated extraction of approx. 50µg DNA from 2 ml whole blood sample*. Suitable for checking multiple parameters using limited amounts of blood in clinical research or livestock /animal research.

*yields ten times more DNA compared to our automated extraction system QuickGene-810

Features

automated | large-scale

Extraction kits (one)

DNA	whole blood L

Specifications

Overview
- Automated stages: Sample binding, washing and elution
- Throughput: 1 to 6 samples per run
- Display: LCD (16 characters x 1 line)

Operating conditions
- Supply voltage: AC 100-240 V
- Power supply frequency: 50/60 Hz
- Temperature: 15-30˚C
- Humidity:30-80 % (non-condensing)
- Power Consumption: 100 W

Physical specifications
- Dimensions: 580 (W) x 330 (D) x 400 (H) mm
  *Bottle holder part included
- Weight: Approx. 24 kg

Spin-cartridge multifunctional kit

QuickGene SP kit

Features

Rapid and easy DNA / RNA extraction using equipment already available in your laboratory, such as centrifuges and microtubes. Because washing and recovery of nucleic acid can be performed in a tabletop compact centrifuge, work efficiency can be dramatically improved.

Features

Spin method

Extraction kits (six)

DNA	whole blood (spin method); tissue (spin method); plasmid II (spin method)
RNA	tissue (spin method); cultured cell (spin method); cultured cell HC (spin method)

DNA Kit

For QuickGene-810/Mini80 [for 96 samples]

DNA tissue kit
Processing time: 13 min/ 8 samples

Pretreatment enzyme | Tissue lysis buffer | Lysis buffer | Wash buffer | Elution buffer
Cartridges | Caps | Collection tubes | Waste tubes

Plasmid kit II
Processing time: 6 min/ 8 samples

Pretreatment enzyme | Lysis buffer | Resuspension buffer | Alkaline solution
Neutralization buffer | Wash buffer | Elution buffer
Cartridges | Caps | Collection tubes | Waste tubes

DNA whole blood kit
Processing time: 6 min/ 8 samples

Pretreatment enzyme | Lysis buffer | Wash buffer | Elution buffer
Cartridges | Caps | Collection tubes | Waste tubes

For QuickGene-610L [for 48 samples]

DNA whole blood kit L
Processing time: 12 min/ 6 samples

Pretreatment enzyme | Lysis buffer | Wash buffer | Elution buffer
Cartridges | Waste tubes

For spin-cartridge method extraction [for 96 samples]

DNA tissue kit (spin method)

Pretreatment enzyme | Tissue lysis buffer | Lysis buffer | Wash buffer | Elution buffer
Cartridges | Waste tubes

Plasmid kit II (spin method)

Pretreatment enzyme | Lysis buffer | Resuspension buffer | Alkaline solution
Neutralization buffer | Wash buffer | Elution buffer
Cartridges | Waste tubes

DNA whole blood kit (spin method)

Pretreatment enzyme | Lysis buffer | Wash buffer | Elution buffer
Cartridges | Waste tubes

Extraction example	ca. 4 µg/ 5 mg Balb/c Mouse tail	ca. 12.5 µg/ 1 ml culture/GAPDH/ DH5α	ca. 5 µg/ Whole blood 200 µl	ca. 50 µg/ Whole blood 2 ml

Mammalian (Human/Cow/Poultry/Dog/Cat)

- DNA isolation for genetic test • Genotyping
- Identification and genotyping

Nail	16	Hair	-			Whole blood	2
Dental pulp and hard tissues (teeth and bones)	17	Lymphatic node, Liver, Kidney	-			Whole blood	26
Paraffin-embedded samples	46	Blood Spot	-			Buffy coat	-
Oral swab	-						

Mouse / Rat

- DNA isolation for genetic test • Genotyping

Tail, Lung, Kidney, Liver	4	Brain, Heart, Esophagus, Stomach, Small intestine, Large intestine, Spleen, Thymus, Lymphatic node	-				
Sperm	6						
Tail, Lung, Kidney, Liver	29						

Fish and Shellfish

- Identification of species and production region

Corbicula clam	18	Bastard halibut, Balloon fish, Ayu, Killifish, Shellfish, Loach, Eel	-				
Chub mackerel blood	23						

Insects

- Genome analysis

Silkworm, Butterflies (legs), Louse	-						

Plants

- Identification of species and production region

Rice plant (leaf), Spinach (leaf)	32	Wheat	-				
Carnation (leaf), Peony (leaf), Camellia (leaf)	-	Shimeji mushroom, Pleurotaceae	-				
Cotton, Arabidopsis (leaf), Tobacco (leaf), Red bean	-	Seaweed	-				
Rice kernel	-	Pufferfish (scales, muscle)	-				

Plasmid

- Amplification of target gene

				E.coli	48		
				E.coli	49		

Fungi / Virus

- Functional analysis
- Viral DNA isolation for the identification of infector virus

SIV-infected cells	8	*Pseudomonas aeruginosa*	37				
Branchia of KHV-infected fish	13	Stool	38				
Yeast	20	Herpes simplex virus-type 1 (HSV-1) virus solution	39				
Methicillin-resistant staphylococcus aureus (MRSA)	33	Penicillin-resistant *streptococcus pneumoniae* (PRSP)	40				
HPV-infected cells	34	Vancomycin-resistant *enterococcus* (VRE)	41				
Neisseria gonorrhoeae	35	HBV in blood serum	-				
Helicobacter pylori	36						

Cell line

- Genome analysis

HepG2, Huh6 etc.	5						

■ Numbers in the right column indicate the type of Application Guide used.

- Blue-colored numbers indicate extraction methods using the QuickGene series.
- Pink-colored numbers indicate extraction methods using the Spin Cartridge method.

* Where no numbers are indicated, please consult with your local contact person.

Whole blood	2
Whole blood	26
Buffy coat	-

Application Guides

Application Guides Available on our website. ▶ http://lifescience.fujifilm.com/

	Title	Extraction example	Purity (A260/280)
2	Genomic DNA Isolation from Human Whole Blood	5.9 µg/200 µl Whole blood (N=5 Avg.)	1.94 (N=5 Avg.)
4	Genomic DNA Isolation from Mammalians Tissue	3.6 µg/5 mg Mouse tail (N=8 Avg.)	1.95 (N=8 Avg.)
5	Genomic DNA Isolation from Human Cultured Cell Line	5.2 µg/0.5×10^6 cells HepG2	1.7
6	Genomic DNA Isolation from Mouse Sperm	3.99 µg/2.3×10^6 cells	1.75
8	Viral DNA Isolation from Simian Immunodeficiency Virus (SIV) Infected Cells	7.9 µg/1×10^6 cells	1.80
13	DNA Isolation from Branchia of Koi Herpes Virus (KHV) Infected Fish	1.68 µg (N=4 Avg.)	2.13 (N=4 Avg.)
16	Genomic DNA Isolation from Nail	16.7 µg/ml	1.76
17	Genomic DNA Isolation from Dental Pulp and Hard Tissues (Teeth and Bones)	37.2 µg/ml	1.87
18	DNA Isolation from Corbicula Clam	(Yield and Purity are suitable for PCR)	
20	Genomic DNA Isolation from Yeast	63.9 µg (N=7 Avg.)	1.98 (N=7 Avg.)
23	DNA Extraction from Chub Mackerel Blood Stored in TNES-6M Urea Buffer for a Long Time	12.0 µg (N=5 Avg.)	2.78 (N=5 Avg.)
26	Genomic DNA Extraction from Human Whole Blood (Spin method)	6.4 µg/200 µl Whole blood	1.97
29	Genomic DNA Extraction from Animal Tissue (Spin method)	3.5 µg/5 mg Mouse tail 4.2 µg/5 mg Mouse liver	1.93 tail 1.92 liver
32	Genomic DNA Extraction from Plants	4.3 µg/100 mg spinach (N=4 Avg.)	1.90 (N=4 Avg.)
33	Genomic DNA Extraction from Methicillin-resistant Staphylococcus aureus (MRSA)	11.6 µg/about 4 mg of wet fungi (N=3 Avg.)	1.72 (N=3 Avg.)
34	Human Papiloma Virus (HPV) DNA Extraction from Human Cervical Carcinoma Cell lines	23.5 µg HeLa	2.00 HeLa
35	Genomic DNA Extraction from Gonococcal Bacteria (*Neisseria gonorrhoeae*)	9.0 µg/about 4.5 - 6.0mg of wet fungi (N=5 Avg.)	2.10 (N=5 Avg.)
36	Genomic DNA Extraction from *Helicobacter pylori*	3.1 µg/about 4mg of wet fungi (N=4 Avg.)	1.93 (N=4 Avg.)
37	Genomic DNA Extraction from *Pseudomonas aeruginosa*	11.4 µg	2.23
38	Bacterial Genomic DNA Extraction from Stool	16.1 µg/25 mg stool (N=2 Avg.)	2.03 (N=2 Avg.)
39	Genomic DNA Extraction from Herpes Simplex Virus-type 1 (HSV-1) Virus Solution	51 ng/about 10^7 pfu/ml d41	2.14
40	Genomic DNA Extraction from Penicillin-resistant *Streptococcus Pneumonia*e (PRSP)	6.7 µg/about 4mg clinical isolate (N=2 Avg.)	1.94 (N=2 Avg.)
41	Genomic DNA Extraction from Vancomycin-resistant *Enterococcus* (VRE)	6.3 µg/about 4mg clinical isolation of wet fungi (N=2 Avg.)	1.86 (N=2 Avg.)
46	Genomic DNA Extraction from Paraffin-embedded Samples (Spin method)	1.43 µg	1.99
48	Plasmid DNA isolation from E.coli	21.4 µg	1.99
49	Plasmid DNA Extraction from E.coli (Spin method)	30.9 µg	2.00

*Please note that some previous Application Guides have been discontinued due to outdated protocol, and the updated contents are now featured in other Application Guides.

RNA Kit

For QuickGene-810/Mini80 [for 96 samples]

RNA tissue kit II
Processing time: 15 min/ 8 samples

Lysis buffer | Solubilization buffer | Wash buffer | Elution buffer | Cartridges | Caps | Collection tubes | Waste tubes

RNA cultured cell kit
Processing time: 17 min/ 8 samples

Lysis buffer | Wash buffer | Elution buffer | Cartridges | Caps | Collection tubes | Waste tubes

RNA cultured cell HC kit
Processing time: 11 min/ 8 samples

Lysis buffer | Solubilization buffer | Wash buffer | Elution buffer | Cartridges | Caps | Collection tubes | Waste tubes

RNA blood cell kit
Processing time: 20 min/ 8 samples

Lysis buffer | Wash buffer | Elution buffer | Cartridges | Caps | Collection tubes | Waste tubes

Extraction example	ca. 100 µg/ 30 mg Mouse liver	ca. 10µg/ 1×10^6 cells HL60 cell	ca. 90~150 µg/ 10 cm dish cultured HEK293 cell	ca. 4.5µg/ 1×10^7 cells leukocytes

For spin-cartridge method extraction [for 96 samples]

RNA tissue kit (spin method)
Lysis buffer | Solubilization buffer | Wash buffer | Elution buffer | Cartridges | Waste tubes

RNA cultured cell kit (spin method)
Lysis buffer | Wash buffer | Elution buffer | Cartridges | Waste tubes

RNA cultured cell HC kit (spin method)
Lysis buffer | Solubilization buffer | Wash buffer | Elution buffer | Cartridges | Waste tubes

Extraction example	ca. 137 µg/ 30 mg Mouse liver	ca. 10µg/ 1×10^6 cells HL60 cell	ca. 213 µg/ 10 cm dish cultured HEK293 cell

Mammalian (Human/Cow/Poultry/Dog/Cat)

- Expression analysis such as real-time PCR and RT-PCR

Canine or feline adipose tissue, Cutis and primary-cultured adipose cells	24		
Lymphatic node, Liver, Kidney	-		
			Leukocyte 22

Mouse / Rat

- Expression analysis such as real-time PCR and RT-PCR

Liver, Brain, Lung, Kidney, Spleen, Thymus, Heart	25		
Liver, Brain, Lung, Kidney, Spleen, Thymus, Heart	30		
Small intestine, Esophagus, Lymphatic node, Large intestine, Stomach	-		

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- Orange-colored numbers indicate extraction methods using the QuickGene series.
- Pink-colored numbers indicate extraction methods using the Spin Cartridge method.
- * Where no numbers are indicated, please consult with your local contact person.

Insects

- Expression analysis such as real-time PCR and RT-PCR

Chironomid, Mosquito	-		

Plants

- Expression analysis such as real-time PCR and RT-PCR

		Wheat (leaf), Barley (leaf)	12
		Arabidopsis (leaf)	-
		Tomato (leaf)	-
		Quinoa, Tobacco (leaf)	-
		Petunia (bloom, leaf), Soybean (leaf)	-

Cell line

- Expression analysis such as real-time PCR and RT-PCR
- Northern blotting (cells cultured on 6 cm, 10 cm dish)
- Microarray

		Floating cell (HL60 etc.)	11
		Adherent cell (COS-7, HeLa, HEK293, NIH/3T3)	14
		HL60, COS-7, HeLa, HEK293, NIH/3T3	27
		Cultured cell (6 cm, 10 cm dish)	21
		Cultured cell (6 cm, 10 cm dish)	28

Fungi / Virus

- The infected virus can be identified by real-time PCR and RT-PCR

VNN-infected fish	19	RS virus solution	45	SIV-infected cells	7
Measles virus solution	42	*E.coli*	-		
Influenza virus solution	43	Norovirus	-		
SARS-CoV-infected cells	44				

Application Guides

Application Guides Available on our website. ▶ http://lifescience.fujifilm.com/

	Title	Extraction example	Purity (A260/280)
7	Viral RNA Isolation from Simian Immunodeficiency Virus (SIV) Infected Cells	7.75 µg (N=2 Avg.)	1.84 (N=2 Avg.)
12	Total RNA Isolation from Monocotyledon and Dicotyledonous Plant Tissues	6.12 µg/50 mg Wheat leaf 12.2 µg/50 mg Barley leaf	2.11 Wheat leaf 2.12 Barley leaf
14	Total RNA Isolation from Cultured Adherent Cells (Lysing directly in culture dish)	28.1 µg/1.2×10^6 cells HeLa	2.28
19	VNN (Viral Nervous Necrosis) RNA Isolation from Tilefish	(Yield and Purity are suitable for RT-PCR)	
21	Total RNA Isolation from Cultured Cells Total RNA Isolation from Cells Cultured in 6cm, 10cm Dish	129.0 µg/2.0×10^6 cells HeLa	2.20
22	Total RNA Isolation from Leukocyte	6.5 µg/1.5×10^7 cells Leukocyte	2.10
24	Total RNA Extraction from Canine or Feline Adipose Tissue, Cutis and Primary-cultured Adipose Cells	28.0 µg/400 mg Adipose Tissue	2.00
25	Total RNA Extraction from Various Tissues of Mouse	122 µg/30 mg Liver 21 µg/40 mg Brain	2.21 Liver 2.11 Brain
27	Total RNA Extraction from Culture Cells (Spin method)	10.5 µg/1.0×10^6 cells HL60	2.11
28	Total RNA Extraction from Cultured Cells Total RNA Extraction from Cells Cultured in 6cm, 10cm Dish (Spin method)	44.0 µg/5.0×10^6 cells HL60	2.17
30	Total RNA Extraction from Various Tissues of Mouse (Spin method)	137 µg/30 mg Liver	2.08
42	total RNA Extraction from Measles Virus Solution	(Yield and Purity are suitable for RT-PCR)	
43	total RNA Extraction from Influenza Virus Solution	(Yield and Purity are suitable for RT-PCR)	
44	total RNA Extraction from SARS Coronavirus (SARS-CoV) infected Cells	7.1 µg	1.90
45	total RNA Extraction from Respiratory Syncytial (RS) Virus Solution	(Yield and Purity are suitable for RT-PCR)	

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