

## Application Guides

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No.2	▶ Isolation of genomic DNA from human whole blood
No.3	▶ *This Application Guide has been discontinued due to outdated protocol.
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No.11	▶ *This Application Guide is not available in English. This is the revised version of the Japanese Application Guide #1. The revised English version is included in the RNA cultured cell kit Handbook.
No.12	▶ Total RNA Isolation from Monocotyledon and Dicotyledonous Plant Tissues
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Application Guides Available on our website. ▶ <http://lifescience.fujifilm.com>

# Nucleic Acid Isolation System Selection Guide

For QuickGene Selection Guide



# 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.

#### 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.

#### No hazardous organic solvents

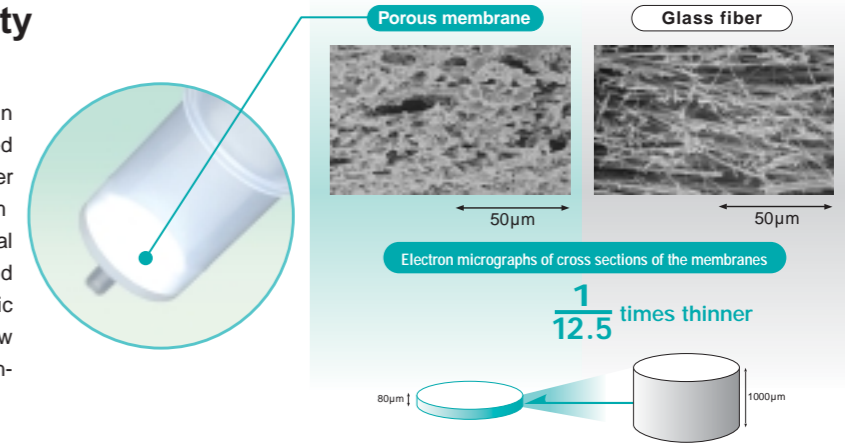
The cartridges and solvents are all supplied without DNase and RNase to avoid contamination. Environmentally friendly extraction can be conducted without using hazardous organic solvents.

#### 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
RNA	blood cell; tissue II; cultured cell; cultured cell HC

#### Specifications

##### Overview

- Throughput: 1 to 8 samples per run

##### Operating conditions

- Supply voltage: AC100-240V
- Power supply frequency: 50/60 Hz
- Temperature: 15-30°C
- Humidity: 30-80 % (non-condensing)

##### Physical specifications

- Dimensions: 280(W)×220(D)×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
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 × 1 line)

##### Operating conditions

- Supply voltage: AC100-240V
- Power supply frequency: 50/60 Hz
- Temperature: 15-30°C
- Humidity: 30-80 % (non-condensing)
- Power Consumption: 65 W

##### Physical specifications

- Dimensions: 450(W)×330(D)×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. 50 g DNA from 2 ml whole blood sample\*. Suitable for checking multiple parameters using limited amounts of blood in clinical research or livestock /animal research.

### Features

automated large-scale

#### Extraction kits (one)

DNA	whole blood L
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#### Specifications

##### Overview

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

##### Operating conditions

- Supply voltage: AC100-240V
- Power supply frequency: 50/60 Hz
- Temperature: 15-30°C
- Humidity: 30-80 % (non-condensing)
- Power Consumption: 100 W

##### Physical specifications

- Dimensions: 580(W)×330(D)×400(H) mm
- 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 (spin method)
RNA	tissue (spin method); cultured cell (spin method); cultured cell HC (spin method)

# DNA Kit

For QuickGene-810 /Mini80 /610L

DNA whole blood kit for 96 samples



Processing time: 6 min/ 8 samples  
Extraction example: ca. 5 g/ Whole blood 200 l

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

DNA tissue kit for 96 samples



Processing time: 13 min/ 8 samples  
Extraction example: ca. 4 g/ 5 mg Balb/c Mouse tail

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

Plasmid kit for 96 samples



Processing time: 6 min/ 8 samples  
Extraction example: ca. 19.1 g/ 1 ml culture DH5α

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

DNA whole blood kit L for 48 samples



Processing time: 12 min/ 6 samples  
Extraction example: ca. 50 g/ Whole blood 2 ml

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

For QuickGene-610L

DNA isolation for Genetic test, genotyping (whole blood, Buffy coat)

\*DNA extraction from a large sample amount

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

Whole blood (EDTA blood, heparin blood, ACD blood)

Oral swab, Nail, Dental pulp, Bone, Hair, Tooth

DNA isolation for genetic test, genotyping (whole blood, Buffy coat)

Application Guide No.2

DNA and mt DNA isolation for individual recognition, identification and genotyping (swab and tissue)

Application Guide No.16 No.17

**Mouse / Rat**

Tail, Sperm, Lung, Kidney, Liver

Genomic DNA isolation for genome analysis of knockout mouse, and genotyping

Application Guide No.4 No.6

**Fish and Shellfish**

Common mackerel, Bastard halibut, Balloon Fish, Ayu, Killifish, Shellfish, Loach, Eel, Freshwater clam

DNA isolation for identification of species and production region, and genome analysis of various species (tissue)

Application Guide No.18 No.23

**Insects**

Silkworm, Butterflies (legs), Louse

DNA isolation for identification of species and production region, and genome analysis of various species (tissue)

**Plants**

Arabidopsis (leaf), Tobacco (leaf), Petunia (leaf), Soybean (leaf), Seaweed, Rice kernel, Wheat, Red bean, Rice plant (leaf), Buckwheat (leaf), Peony (leaf), Camellia (leaf), Pleurotaceae, Shimeji mushroom, Cotton, Carnation (leaf)

DNA isolation for identification of species and production region, and genome analysis of various species (materials, manufactured goods)

**Cell line**

Adherent cell (HepG2, Huh6 etc.)

DNA isolation for genome analysis of cultured cell

Application Guide No.5

**Fungi / Virus**

SIV-infected cells, HBV in blood serum, Yeast, Koi herpes virus (KHV)-infected fish, *E.coli*

Viral DNA isolation for the identification of infective virus, and basic research (cultured cells and tissue)

Application Guide No.8 No.13

DNA isolation for identification of species and production region, and genome analysis of various species (materials, manufactured goods)

Application Guide No.20

**Plasmid**

*E.coli*

Miniprep for plasmid

Application Guide No.10

For spin-cartridge method extraction

DNA whole blood kit (spin method)



Extraction example: ca. 5 g/ Whole blood 200 l

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

DNA tissue kit (spin method)



Extraction example: ca. 4 g / 5 mg Balb/c Mouse tail

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

Plasmid kit (spin method)



Extraction example: ca. 19.1 g/ 1 ml culture DH5α

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

# RNA Kit

For QuickGene-810 /Mini80/610L

## RNA blood cell kit for 96 samples



Processing time: 20 min/ 8 samples  
Extraction example: ca. 4.5 g/1×10<sup>8</sup> cell leukocytes

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

## RNA tissue kit II for 96 samples



Processing time: 15 min/ 8 samples  
Extraction example: ca. 100 g/ 30 mg Mouse liver

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

## RNA cultured cell kit for 96 samples



Processing time: 17 min/ 8 samples  
Extraction example: ca. 10 g/ 1×10<sup>8</sup> cell HL60 cell

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

## RNA cultured cell HC kit for 96 samples



Processing time: 11 min/ 8 samples  
Extraction example: ca. 90-150 g/ 10 cm dish cultured HEK293 cell

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

### Mammalian

(Human/Cow/Poultry/Dog/Cat)

Leukocyte

Lymphatic node, Liver, Kidney, Adipose cell, Skin

### Mouse / Rat

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

### Insects

Chironomid, Mosquito

### Plants

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

### Cell line

Floating cell (HL60 etc.), Adherent cell (HeLa etc.)

Cultured cell (6cm, 10cm dish)

### Fungi / Virus

SIV-infected cells, VNN-infected fish

*E.coli*

Total RNA for RT-PCR can be isolated from leukocyte pellet that is separated by ammonium chloride haemolysis of whole blood or Ficoll fraction

Application Guide No.22

Total RNA isolation for expression analysis such as real-time PCR and RT-PCR (tissue)

Application Guide No.24

Total RNA isolation for expression analysis such as real-time PCR and RT-PCR (tissue)

Application Guide No.25

Total RNA isolation for expression analysis such as real-time PCR and RT-PCR (tissue)

Total RNA isolation for expression analysis of plant and basic research (tissue)

Application Guide No.12

Total RNA isolation for expression analysis such as real-time PCR and RT-PCR (cultured cell)

Application Guide No.11 No.14

Total RNA isolation from cells cultured on 6 cm, 10 cm dish (for northern blotting and microarray)

Application Guide No.21

Total RNA isolation for expression analysis such as real-time PCR and RT-PCR (tissue)

Application Guide No.19

Viral RNA isolation from virus-infected cultured cell

Application Guide No.7

Total RNA isolation for expression analysis such as real-time PCR and RT-PCR (fungi)

For spin-cartridge method extraction

## RNA tissue kit (spin method)



Extraction example: ca. 137 g/ 30 mg Mouse liver

Lysis buffer Solubilization buffer Wash buffer Elution buffer  
Cartridges Waste tubes

## RNA cultured cell kit (spin method)



Extraction example: ca. 10 g/ 1×10<sup>8</sup> cell HL60 cell

Lysis buffer Wash buffer Elution buffer  
Cartridges Waste tubes

## RNA cultured cell HC kit (spin method)



Extraction example: ca. 213 g/ 10 cm dish cultured HEK293 cell

Lysis buffer Solubilization buffer Wash buffer Elution buffer  
Cartridges Waste tubes