NIPPON Genetics EUROPE GmbH

FastGene® Gel/PCR Extraction Kit

For extraction of DNA from agarose gels and purification of PCR products

Cat.No.: FG-91202, 100 preparations
Cat.No.: FG-91302, 300 preparations

STORAGE
Store at room temperature (15-25°C)

FastGene® Gel/PCR Extraction Kits are intended for research use only.

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CONTENTS

COMPONENTS

FastGene® Gel/PCR Extraction Kit	100 preparations FG-91202	300 preparations FG-91302
FastGene® GP Column	100	300
2 ml Collection Tube	100	300
Binding Buffer GP1	80 ml	200 ml
Wash Buffer GP2 concentrate	25 ml	40 ml
Elution Buffer GP3	10 ml	30 ml
FastGene® Gel Band Cutter (trial pack)	5	5

Materials not supplied

Reagents:	96-100% EtOH
Consumables:	1.5 ml microcentrifuge tube Disposable pipette tips
Equipment:	Manual pipettors Centrifuge for microcentrifuge tubes Heating block Vortex mixer Personal protection equipment (lab coat, gloves, goggles)

STORAGE AND PREPARATION

The FastGene® Gel/PCR Extraction Kit should be stored dry at room temperature (15-25°C). Under these conditions, the kit is stable for up to 12 months without showing any reduction in performance and quality. Check buffers for precipitate before use and redissolve at 37°C if necessary.

Before starting any protocol prepare the following:

FastGene® Gel/PCR Extraction Kit	100 preparations FG-91202	300 preparations FG-91302
Wash Buffer GP2 concentrate	add 100 ml ethanol (96-100%)	add 160 ml ethanol (96-100%)

SAFETY INSTRUCTIONS – RISK AND SAFETY PHRASES

Warning: FastGene® Gel/PCR Extraction Kits are intended for research use only. The kits are not recommended or intended for diagnosis of disease in humans or animals.
When working with chemicals, always wear a suitable lab coat, disposable gloves, and protective goggles. We strongly recommend that this product is handled only by those persons who have been trained in laboratory techniques and that it is used in accordance with the principles of good laboratory practice.

The following components of the FastGene® Gel/PCR kits contain hazardous contents. Follow the safety instructions given in this section.

Binding Buffer GP1
Contains guanidine thiocyanate, acetic acid: harmful.
Risk and safety phrases: R20/21/22-34-52/53. S1/2-13-25-26-27/28-36/37/39-45-61-64

R20/21/22: Harmful by inhalation, in contact with skin and if swallowed; R34: Causes burns; R52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment; S1/2: Keep locked up and out of the reach of children; S13: Keep away from food, drink and animal feedingstuffs; S25: Avoid contact with eyes; S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice; S27/28: After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water; S36/37/39: Wear suitable protective clothing, gloves and eye/face protection; S45: In case of accident or if you feel unwell, seek medical advice immediately; S61: Avoid release to the environment. Refer to special instructions/ Safety data sheets; S64: If swallowed, rinse mouth with water (only if the person is conscious).

KIT SPECIFICATIONS

FastGene® Gel/PCR Extraction Kits are designed for extraction of DNA from agarose gels and for purification of PCR products.

Parameter	Gel Extraction	PCR Clean-up
Maximum Sample Volume	300 mg gel slice	100 µl PCR solution
Gel	< 2,5% TAE or TBE	
Typical Recovery	70-80%	80-90%
Binding Capacity	10 µg	10 µg
DNA Fragment Length	50 bp – 10 kbp	50 bp – 10 kbp
Effective Primer Removal		< 25 bp
Elution Volume	20-50 µl	20-50 µl
Operation Time	20 minutes	20 minutes

PROTOCOL
DNA extraction from agarose gels

Before starting the preparation please check if Wash Buffer GP2 was prepared according to section *Storage and Preparation.*

Unless otherwise noted the centrifugation steps are carried out at 13,000 rpm (~11,000 – 18,000 x g) in a conventional, table-top microcentrifuge.

Gel Dissociation

- Take a FastGene® Gel Band Cutter or a clean scalpel to excise the DNA fragment from an agarose gel (< 2.5% agarose concentration recommended). Remove extra agarose to minimize gel slice.
- Transfer up to 300 mg of gel slice into a microcentrifuge tube (not provided).
- Add 500 µl of Binding Buffer GP1 to the sample and mix by vortexing.
- Incubate at 55°C for 10-15 minutes until the gel slice has been completely dissolved. During incubation, invert the tube every 2-3 minutes.

DNA Binding

- Place a FastGene® GP Column into a Collection Tube.
- Apply up to 800 µl of the sample mixture from previous step into the FastGene® GP Column and centrifuge at 13,000 rpm for 30 seconds.
- Discard the flow-through and place the FastGene® GP Column back into the Collection Tube.

  Remark: If the sample mixture is more than 800 µl, repeat the DNA Binding steps.

Wash

- Add 600 µl Wash Buffer GP2 to the FastGene® GP Column and centrifuge at 13,000 rpm for 30 seconds.
- Discard the flow-through and place the FastGene® GP Column back into the Collection Tube.

  Remark: For TAE gels proceed to the next step. For TBE gels we recommend to repeat Wash steps to remove Boric Acid completely.

Dry

- Centrifuge again for 2 minutes at 13,000 rpm to dry the column matrix.

DNA Elution

- Transfer FastGene® GP Column into a new microcentrifuge tube (not provided).
- Add 20-50 µl Elution Buffer GP3 to the centre of the column matrix.
- Allow to stand for 2 minutes until Elution Buffer is absorbed by the matrix.
- Centrifuge at 13,000 rpm for 2 minutes to elute purified DNA.

  Remark: Yield of larger fragments (> 5 kbp) can be increased by using prewarmed (70°C) elution buffer.

PROTOCOL

Purification of PCR products

Before starting the preparation please check if Wash Buffer GP2 was prepared according to section *Storage and Preparation.*

Unless otherwise noted the centrifugation steps are carried out at 13,000 rpm (~11,000 – 18,000 x g) in a conventional, table-top microcentrifuge.

Sample Preparation

- Mix 1 volume of sample (up to 100 µl) with 5 volumes of Binding Buffer GP1 by vortexing (e.g. mix 40 µl PCR reaction and 200 µl Binding Buffer GP1).

  Remark: For sample volumes <40 µl adjust the volume of the sample to 40 µl using Binding Buffer GP1 or PCR grade water first. Then add 200 µl Binding Buffer GP1 and mix by vortexing.

  Remark: If the volume of the used PCR reaction tube is not sufficient, please transfer the PCR sample into a microcentrifuge tube before adding Binding Buffer GP1.

DNA Binding

- Place a FastGene® GP Column into a Collection Tube.
- Apply the sample mixture from previous step into the FastGene® GP Column and centrifuge at 13,000 rpm for 30 seconds.
- Discard the flow-through and place the FastGene® GP Column back into the Collection Tube.

Wash

- Add 600 µl Wash Buffer GP2 to the FastGene® GP Column and centrifuge at 13,000 rpm for 30 seconds.
- Discard the flow-through and place the FastGene® GP Column back into the Collection Tube.

Dry

- Centrifuge again for 2 minutes at 13,000 rpm to dry the column matrix.

DNA Elution

- Transfer FastGene® GP Column into a new microcentrifuge tube (not provided).
- Add 20-50 µl Elution Buffer GP3 to the centre of the column matrix.
- Allow to stand for 2 minutes until Elution Buffer is absorbed by the matrix.
- Centrifuge at 13,000 rpm for 2 minutes to elute purified DNA.

  Remark: Yield of larger fragments (> 5 kbp) can be increased by using prewarmed (70°C) elution buffer.

ORDERING INFORMATION

Product	Cat.No.
FastGene® Gel/PCR Extraction Kit (100 preps)	FG-91202
FastGene® Gel/PCR Extraction Kit (300 preps)	FG-91302
FastGene® Gel Band Cutter (50)	FG-830
FastGene® Plasmid Mini Kit (100 preps)	FG-90402
FastGene® Plasmid Mini Kit (300 preps)	FG-90502
FastGene® Dye Terminator Removal Kit (50 preps)	FG-9411

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For more detailed product information, contact details, questions, or trouble shooting please visit our English website *www.nippongenetics.eu* or our German website *www.nippongenetics.de*

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