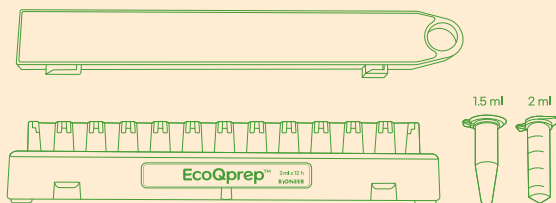
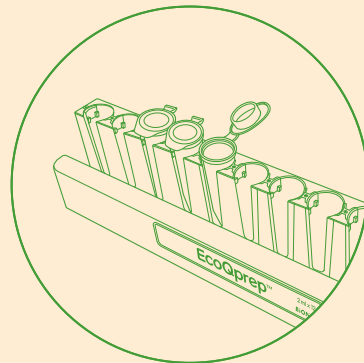


# EcoQprep™

Magnetic Bead-based  
Preparation and Purification Solution



BIONEER Corporation.  
Healthier Future for  
Humanity with Genomic Technology

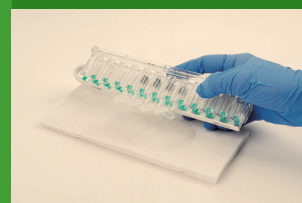
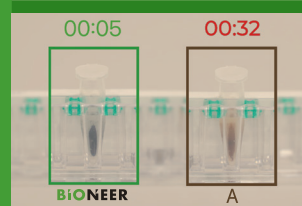
# EcoQprep™

For an Eco-Friendly Lab,  
A Smart Choice!

EcoQprep™ is a nucleic acid extraction kit utilizing *AccuNanoBead*™, BIONEER's magnetic nanobeads, allowing for easy nucleic acid with a Magnetic Separation Rack.

*AccuNanoBead*™ is a versatile magnetic nanoparticle applicable to various purposes depending on the functional group applied. In EcoQprep™, silica (SiO<sub>2</sub>) beads, which rapidly bind to nucleic acids in the presence of chaotropic salts, are used.

Additionally, unlike conventional polystyrene-based beads, the core of *AccuNanoBead*™ is made of pure ferrite (Fe<sub>3</sub>O<sub>4</sub>), a highly magnetic material. This ensures an eco-friendly approach while enabling faster and more efficient nucleic acid purification.



How eco-friendly  
is your lab?

EcoQprep™ with  
*AccuNanoBead*™  
What Makes It Special?



## Fast

- Strong magnetic forces reduce particle capturing time, effectively reducing experiment duration.
- Enables faster nucleic acid purification compared to the spin column method using a centrifuge.

## Convenient

- Simple Workflow: Easily remove the solution by flipping the rack without pipetting.
- Kit Flexibility: A single kit handling any sample size from mini to maxi scale.
- Rack Design: Transparent material enables easy observation of beads and samples, and the rack is designed for vortexing with tubes attached.

## Eco-friendly

- No centrifuge is required, eliminating power consumption.
- Minimize plastic waste by not using spin column.
- *AccuNanoBead*™ uses magnetic nanoparticles without plastic polymers, helping to reduce microplastic pollution.

# EcoQprep™ Universal RNA Kit

- ✓ Enables high-purity, high-yield RNA extraction from various sample types, including cultured cells, animal tissues, and plant tissues.
- ✓ A single kit supports mini and midi scale applications.

## RNA

### Product Specifications/Details

Scale	Mini	Midi
Expected RNA yield	~ 100 µg	~ 500 µg
Minimum elution volume	50 µl	500 µl
Preparation time	~ 10 min	~ 15 min

Sample type	Starting amount	RNA yield	Expected purity*
Cultured cells	10 <sup>4</sup> - 10 <sup>8</sup> cells	15 - 20 µg	A <sub>260/280</sub> > 2.0 A <sub>260/230</sub> > 1.7
Liver	25 -50 mg	10 - 60 µg	
Spleen	100 mg	30 - 60 µg	
Plant / Tissue	100 mg	70 - 80 µg	

\* Measurement values may vary depending on the sample type.

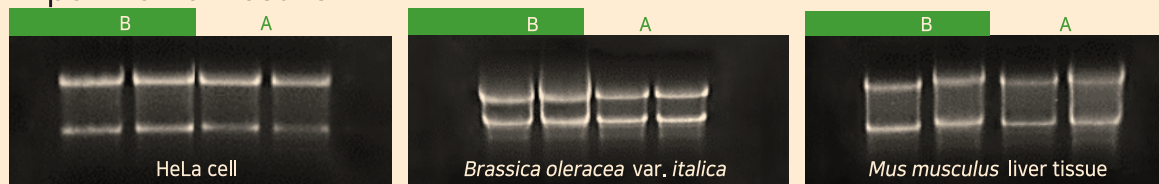
### Components

RD Buffer	30 ml × 1 ea
RWMB1 Buffer	25 ml × 1 ea
RWB2 Buffer	15 ml × 1 ea
WE Buffer	40 ml × 1 ea
ER Buffer	25 ml × 1 ea
Magnetic Nanobead	6 ml × 1 ea
1.5 ml Tube	50 ea × 1 pack
User Guide	1 ea



\* mini-50 rxn, midi-5 rxn

### Experimental Results



B: EcoQprep™ Universal RNA Kit A: Competitor A kit (column type)

Product	Conc. (ng/µl)	Purity (A <sub>260</sub> /A <sub>280</sub> )	Purity (A <sub>260</sub> /A <sub>230</sub> )
EcoQprep™	249.9	2.08	2.19
	282.8	2.05	2.24
Competitor A	228.6	2.07	2.17
	205.2	2.08	1.54

Cultured cell RNA extraction using EcoQprep™ Universal RNA Kit.  
RNA extraction from 1 × 10<sup>6</sup> cells of HeLa cell.  
DNase was not treated.

Product	Conc. (ng/µl)	Purity (A <sub>260</sub> /A <sub>280</sub> )	Purity (A <sub>260</sub> /A <sub>230</sub> )
EcoQprep™	753.8	2.20	2.23
	703.8	2.15	1.76
Competitor A	635.4	2.19	2.00
	642.8	2.18	1.01

Plant RNA extraction using EcoQprep™ Universal RNA Kit.  
RNA extraction from 100 mg of *Brassica oleracea* var. *italica*  
DNase was not treated.

Product	Conc. (ng/µl)	Purity (A <sub>260</sub> /A <sub>280</sub> )	Purity (A <sub>260</sub> /A <sub>230</sub> )
EcoQprep™	511.0	2.08	2.26
	510.9	2.05	2.24
Competitor A	461.7	2.12	1.89
	490.1	2.10	2.01

Animal tissue RNA extraction using EcoQprep™ Universal RNA Kit.  
RNA extraction 20 mg of *Mus musculus* liver tissue.  
DNase was not treated.

- ◆ Comparison of RNA extracted with EcoQprep™ Universal RNA Kit and Competitor A kit (column type).  
Total RNA was extracted using EcoQprep™ Universal RNA Kit and Competitor A kit (column type), analyzed by agarose gel electrophoresis.  
Concentration and purity were measured using a Nanodrop.

# EcoQprep™ Genomic DNA Kit

- ✓ Enables genomic DNA extraction from various sample types, including whole blood, cultured cells, animal tissues, and bacteria (Gram (-), (+)).
- ✓ Supports genomic DNA extraction even from small samples with fewer than  $1 \times 10^4$  cells.
- ✓ A single kit supports mini, midi, and maxi scale applications.

## DNA

### Product Specifications/Details

Scale	Mini (Typical yield [μg])	Midi (Typical yield [μg])	Maxi (Typical yield [μg])
Whole blood	200 μl (< 10 μg)	2 ml (< 80 μg)	4 ml (< 150 μg)
Cultured cell	$\sim 1 \times 10^6$ cells (< 12 μg)	$\sim 5 \times 10^6$ cells (< 60 μg)	$\sim 1 \times 10^7$ cells (< 120 μg)
Animal tissue	$\sim 25$ mg (< 10 μg)	$\sim 100$ mg (< 40 μg)	$\sim 250$ mg (< 120 μg)
Bacteria (Gram (-), (+))	$\sim 1 \times 10^9$ cells (< 15 μg)	$\sim 5 \times 10^9$ cells (< 80 μg)	$\sim 1 \times 10^{10}$ cells (< 150 μg)
Preparation time	< 5 min	< 10 min	< 15 min
Expected purity	$A_{260}/A_{280} > 1.8$		

\* Measurement values may vary depending on the sample type.

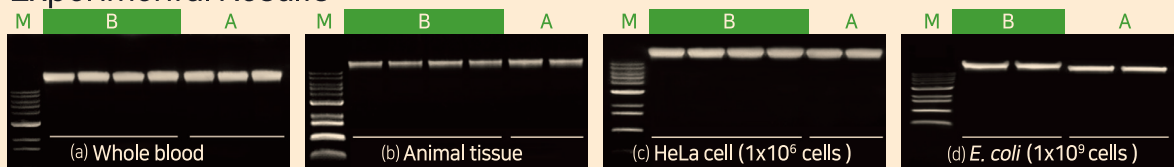
### Components

TL Buffer	15 ml × 1 ea
GB Buffer	15 ml × 1 ea
WM1 Buffer	30 ml × 1 ea
WB2 Buffer	10 ml × 1 ea
WE Buffer	40 ml × 1 ea
EA Buffer	25 ml × 1 ea
RNase A powder, lyophilized	24 mg × 1 ea
Proteinase K, lyophilized	25 mg × 1 ea
Poly(A), lyophilized	1 mg × 1 ea
Magnetic Nanobead	6 ml × 1 ea
1.5 ml Tube	50 ea × 1 pack
User Guide	1 ea

\* mini=50 rxn, midi=7 rxn, maxi=3 rxn



### Experimental Results



M: 1 kb DNA ladder (Cat. No. D-1040, Bioneer) B: EcoQprep™ Genomic DNA Kit A: Competitor A kit (column type)

Sample	EcoQprep™		Competitor A	
	Yield (μg)	Purity ( $A_{260}/A_{280}$ )	Yield (μg)	Purity ( $A_{260}/A_{280}$ )
Whole blood	6.45	1.85	5.53	1.85
Animal tissue	5.48	1.86	5.60	1.85
HeLa cell ( $1 \times 10^6$ cells)	24.1	1.92	23.3	2.00
<i>E. coli</i> ( $1 \times 10^9$ cells)	14.7	1.83	15.5	2.05

➤ Comparison of genomic DNA extracted using EcoQprep™ Genomic DNA Kit with competitors' kits (column type).

➤ High-quality gDNA from a variety of samples

Genomic DNA was extracted using EcoQprep™ Genomic DNA Kit and Competitor A kit (column type), analyzed by agarose gel electrophoresis.

(a) DNA was extracted from 200 μl samples of whole blood, and 4 μl aliquot was analyzed by gel electrophoresis.

(b) DNA was extracted from 15 mg samples of porcine skeletal muscle tissue, and 1 μl aliquot was analyzed by gel electrophoresis.

(c) DNA was extracted from  $1 \times 10^6$  cells of HeLa cell, and 1 μl aliquot was analyzed by gel electrophoresis.

(d) DNA was extracted from  $1 \times 10^9$  cells of *Escherichia coli* (DH5α), and 2 μl aliquot was analyzed by gel electrophoresis.

# EcoQprep™ Plant Genomic DNA Kit

- ✓ Extracts high-purity, high-yield genomic DNA from various plant samples, including leaves, stems, roots, and seeds.
- ✓ Provides an optimized lysis buffer for diverse plant seeds and tissue cells.
- ✓ Supports genomic DNA extraction even from small samples with fewer than  $1 \times 10^4$  cells.

## DNA

### Product Specifications/Details

Scale	Mini	Midi	Maxi
Plant tissue	~ 100 mg	~ 500 mg	~ 1 g
Seed	~ 50 mg	~ 250 mg	~ 500 mg
Elution volume	100 $\mu$ l	500 $\mu$ l	1 ml
Typical DNA yield*	5 - 15 $\mu$ g	15 - 80 $\mu$ g	30 - 150 $\mu$ g
Expected purity	$A_{260}/A_{280} > 1.8$		

\* Measurement values may vary depending on the sample type.

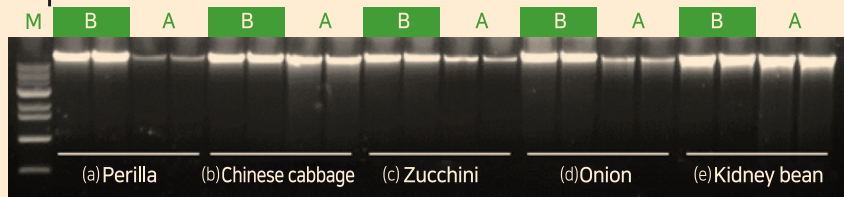
### Components

PL Buffer	20 ml $\times$ 1 ea
PC Buffer	15 ml $\times$ 1 ea
PWM1 Buffer	25 ml $\times$ 2 ea
WB2 Buffer	10 ml $\times$ 1 ea
WE Buffer	40 ml $\times$ 1 ea
EA Buffer	25 ml $\times$ 1 ea
RNase A powder, lyophilized	24 mg $\times$ 1 ea
Proteinase K, lyophilized	25 mg $\times$ 1 ea
Magnetic Nanobead	6 ml $\times$ 1 ea
1.5 ml Tube	50 mg $\times$ 1 pack
User Guide	1 ea



\* mini-50 rxn, midi-7 rxn, maxi-3 rxn

### Experimental Results



M: 1 kb DNA ladder (Cat. No. D-1040, Bioneer)

B: EcoQprep™ Plant Genomic DNA Kit

A: Competitor A kit (column type)

Scale	EcoQprep™		Competitor A	
	Yield ( $\mu$ g)	Purity ( $A_{260}/A_{280}$ )	Yield ( $\mu$ g)	Purity ( $A_{260}/A_{280}$ )
Perilla	7.1	1.80	3.5	1.85
Chinese cabbage	5.9	1.82	4.7	1.82
Zucchini	3.6	1.77	3.0	1.79
Onion	5.5	1.80	1.6	1.84
Kidney bean	7.7	1.73	6.6	1.80

➤ Comparison of genomic DNA from plant extracted with EcoQprep™ Plant Genomic DNA Kit with competitor's kit (column type).

➤ DNA extraction from various samples

Genomic DNA was extracted using EcoQprep™ Plant Genomic DNA Kit and Competitor A kit (column type), analyzed by agarose gel electrophoresis. Each 4  $\mu$ l of purified DNA was analyzed by gel electrophoresis. DNA yield and purity were measured using a Nanodrop, and the values presented in table are the averages.

(a) Perilla (*Perilla frutescens* var. *japonica* Regel) tissue 100 mg, (b) Chinese cabbage (*Brassica rapa* var. *glabra* Regel) tissue 100 mg, (c) Zucchini (*Cucurbita pepo*) tissue 100 mg, (d) Onion (*Allium cepa*) tissue 100 mg, (e) Kidney Bean (*Phaseolus vulgaris*) seed 50 mg.

EcoQprep™

## Kit

### Plasmid DNA

#### EcoQprep™ Plasmid Kit

Coming Soon

Cat. No. K-3700

Spec. 50 rxn

Cat. No. K-3700-1

Spec. 200 rxn

### Genomic DNA

#### EcoQprep™ Genomic DNA Kit

Cat. No. K-3701

Spec. 50 rxn

Cat. No. K-3701-1

Spec. 200 rxn

#### EcoQprep™ Plant Genomic DNA Kit

Cat. No. K-3702

Spec. 50 rxn

Cat. No. K-3702-1

Spec. 200 rxn

### Cell-free DNA

#### EcoQprep™ cfDNA Kit

Coming Soon

Cat. No. K-3704

Spec. 50 rxn

### Viral DNA/RNA

#### EcoQprep™ Viral DNA/RNA Kit

Coming Soon

Cat. No. K-3705

Spec. 50 rxn

Cat. No. K-3705-1

Spec. 200 rxn

### Total RNA

#### EcoQprep™ Universal RNA Kit

Cat. No. K-3706

Spec. 50 rxn

Cat. No. K-3706-1

Spec. 200 rxn

### PCR/Gel

#### EcoQprep™ PCR/Gel Kit

Coming Soon

Cat. No. K-3707

Spec. 50 rxn

Cat. No. K-3707-1

Spec. 200 rxn

## Magnetic Bead Separator

### Rack

#### EcoQprep™ Magnetic Separation Rack

Cat. No. TM-1012

Spec. 2 ml tube × 12 holes

Cat. No. TM-1021

Spec. 15 ml tube × 6 holes

Coming Soon

Cat. No. TM-1031

Spec. 50 ml tube × 3 holes

Coming Soon

