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AccuPrep®

Spin Column Type
Nucleic Acid Preparation

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BIONEER
Innovation • Value • Discovery

Prepare High Purity, High Yield Nucleic Acid
with AccuPrep® Kit!

AccuPrep® series are Bioneer's most popular nucleic acid extraction product which uses a single spin column or 96-well plate with glass micro fiber filters. Bioneer provides various products for high-purity and high-yield genomic DNA, plasmid DNA, RNA or fragment DNA.

Selection Chart

Nucleic Acid	Sample	Product Type	Product	Yield	Experiment Time
Genomic DNA	Cultured animal cells Lymphocytes Mammalian tissue Whole human blood and bacterial cultures	Spin Column	*AccuPrep®* Genomic DNA Extraction Kit	Up to 20 μg	< 30 min
	Plant tissues	Spin Column	*AccuPrep®* Plant Genomic DNA Extraction Kit	Variable*	< 50 min
	Fresh or frozen stool Samples with large amounts of PCR inhibitors	Spin Column	*AccuPrep®* Stool DNA Extraction Kit	2 - 5 μg	< 50 min
	Cultured animal cells Lymphocytes Mammalian tissue Whole human blood and bacterial cultures	96-Well Plate	*AccuPrep®* Genomic DNA Extraction Kit for 96 well vacuum Block	Variable*	< 40 min
Plasmid DNA	Bacterial cultures	Spin Column	*AccuPrep®* Nano-Plus Plasmid Mini Extraction Kit	Up to 30 μg	< 10 min
		Spin Column	*AccuPrep®* Nano-Plus Plasmid Midi Extraction Kit	Up to 75 - 100 μg	< 40 min
		Pump			< 30 min
		Spin Column	*AccuPrep®* Nano-Plus Plasmid Maxi Extraction Kit	Up to 300 - 500 μg	< 60 min
		Pump			< 45 min
		Spin Column	*AccuPrep®* Plasmid Mini Extraction Kit	Up to 20 μg	< 20 min
		96-Well Plate	*AccuPrep®* Plasmid Mini Extraction Kit for 96 well vacuum Block	Up to 10 μg	< 40 min
Fragment DNA	PCR products DNA fragments in agarose gel slice Labeled, modified or digested DNA	Spin Column	*AccuPrep®* PCR/Gel DNA Purification Kit	70 - 90% recovery	< 30 min
	PCR products Labeled, modified or digested DNA	96-Well Plate	*AccuPrep®* PCR Purification Kit for 96 well vacuum Block	70 - 90% recovery	< 25 min
RNA	Cultured animal cells Mammalian tissue Plant tissue	Spin Column	*AccuPrep®* Universal RNA Extraction Kit	Variable*	< 20 min
	Bacteria culture (gram-negative, gram-positive)	Spin Column	*AccuPrep®* Bacterial RNA Extraction Kit	Variable*	< 40 min
	Viral RNA in body fluid (blood, plasma, serum and urine)	Spin Column	*AccuPrep®* Viral RNA Extraction Kit	Variable*	< 30 min

* Yield will vary according to sample type.

DNA Extraction

Genomic DNA Extraction Kit

AccuPrep® Genomic DNA Extraction Kit can rapidly and conveniently extract genomic DNA from blood, lymphocyte, buffy coat, animal tissue and cultured cell. This process does not require phenol/chloroform extraction, alcohol precipitation, nor other burdensome steps. The isolated DNA is ready to use in various applications.

	Conc. (ng/μl)	$A_{260/280}$
Bioneer	57.2	1.86
	55.7	1.88
Company Q	57.5	1.86
	59.7	1.81

*Elution Volume : 100 μl

Figure 1. Genomic DNA extracted by *AccuPrep*® Genomic DNA Extraction Kit
gDNA extraction from 30 mg of bovine tissue
M: 1 kb ladder (D-1040, Bioneer)

Plant Genomic DNA Extraction Kit

AccuPrep® Plant Genomic DNA Extraction Kit extracts DNA from plant samples including leaf and seeds. The kit includes all reagents required for extraction, and uses a column type extraction system to allow rapid, convenient extraction of higher-quality DNA.

	Conc. (ng/μl)	$A_{260/280}$
Bioneer	36.4	1.67
	27.8	1.76
Company Q	26.4	1.74
	34.4	1.67

*Elution Volume : 100 μl

Figure 2. Genomic DNA extracted by *AccuPrep*® Plant Genomic DNA Extraction Kit
gDNA extraction from 100 mg of *Brassica oleracea var. italica*
M: 1 kb ladder (D-1040, Bioneer)

Stool DNA Extraction Kit

AccuPrep® Stool DNA Extraction Kit extracts DNA from stool or other samples containing large amounts of material that can inhibit PCR. Using the spin-column method, contaminants and enzyme inhibitors such as heparin, bilirubin bile salts are eliminated and high-purity DNA is obtained.

Figure 3. Stool genomic DNA extracted by *AccuPrep*® Stool DNA Extraction Kit (A), PCR results of *H. pylori* DNA extracted by *AccuPrep*® Stool DNA Extraction Kit (B)
(A) M: 1 kb ladder (D-1040, Bioneer), Lane 1-3: 100 ng of Intact DNA (left) and *Hind* III enzyme digested DNA (right)
(B) M: 100 bp ladder (D-1030, Bioneer), Lane 1-4: PCR results for *H. pylori*

Specification & Application

Product	Genomic DNA Kit				Plant Genomic DNA Kit			Stool DNA Kit
Sample	Whole blood	Buffy coat	Cultured cells	Mammalian tissue	Soybean	Maize	Potato	Stool
Expected yield	3-6 μg	15-20 μg	15-20 μg	10-15 μg	2-5 μg	1-4 μg	1-4 μg	2-5 μg
Prep. time	< 30 min				< 50 min			< 50 min
Application	Gene cloning, PCR, Real-time PCR, Southern blotting, and SNP genotyping							

Nano-Plus Plasmid Extraction Kit

AccuPrep® Nano-Plus Plasmid Extraction Kit extracts high quality plasmid DNA from cultured bacterial cells. The kit reduces plasmid DNA prep time from the usual 30 minutes to 10 minutes. The overall principle utilizes a modified alkaline lysis protocol that is enhanced by patented Bioneer's Nano-Technology.

Plasmid Mini Extraction Kit

AccuPrep® Plasmid Extraction Kit extracts high-purity plasmid DNA rapidly from bacterial cultures such as *E. coli.* Extraction is carried out in three simple steps of binding/washing/elution. Dangerous organic solvents are avoided for the safe and convenient extraction of plasmid DNA.

	Conc. (ng/μl)	$A_{260/280}$
Bioneer	477.3	1.89
	465.7	1.89
Company Q	409.9	1.86
	406.7	1.88

*Elution Volume : 100 μl

Figure 4. Plasmid DNA extracted by *AccuPrep*® Plasmid Extraction Kit

Extraction of pGEM®-T easy vector from 3.6 x 10^9 *E. coli* DH5α cells

M: 1 kb ladder (D-1040, Bioneer)

PCR/Gel DNA Purification Kit

AccuPrep® PCR/Gel Purification Kit purifies DNA fragment from PCR or other enzymatic products as well as agarose gel. 50 bp-20 kb size of fragment DNA can be purified with 70-90% recovery, and common 20-40 mer short oligonucleotides are easily removed.

Specification & Application

Product	Nano-Plus Plasmid Extraction Kit			Plasmid Mini Extraction Kit	PCR/Gel DNA Purification Kit
	Mini	Midi	Maxi		
Expected yield	Up to 30 μg	Up to 75-100 μg	Up to 300-500 μg	Up to 20 μg	Variable
Prep. time	< 10 min	< 40 min	< 60 min	< 20 min	< 30 min
Application	Sub-cloning, sequencing, transformation, transfection, and *in-vitro* transcription/translation				Sub-cloning, sequencing, labeling, and DNA concentration

RNA Extraction

Universal RNA Extraction Kit

AccuPrep® Universal RNA Extraction Kit extracts high-quality RNA from various type of samples such as cultured animal cell, animal tissue and plant tissue by common extraction kit.

	Conc. (ng/μl)	$A_{260/280}$
Bioneer	277.0	2.12
	183.8	2.11
Company Q	229.6	2.07
	147.7	2.07

*Elution Volume : 100 μl

Figure 1. Cultured cell RNA extracted by *AccuPrep*® Universal RNA Extraction Kit
RNA extraction from 1×10^6 of HeLa cell.
DNase was not treated.

	Conc. (ng/μl)	$A_{260/280}$
Bioneer	748.2	2.13
	701	2.14
Company Q	642.4	2.09
	730.5	2.06

*Elution Volume : 100 μl

Figure 2. Plant RNA extracted by *AccuPrep*® Universal RNA Extraction Kit
RNA extraction from 100 mg of *Brassica oleracea var. italica*. DNase was not treated.

	Conc. (ng/μl)	$A_{260/280}$
Bioneer	2397.2	2.19
	1662.8	2.18
Company Q	914.1	2.17
	904.3	2.14

*Elution Volume : 100 μl

Figure 3. Animal tissue RNA extracted by *AccuPrep*® Universal RNA Extraction Kit
RNA extraction from 20 mg of *Mus musculus* liver.
DNase was not treated.

Viral RNA Extraction Kit

AccuPrep® Viral RNA Extraction Kit extracts viral RNA from cell-free samples as serum, plasma, CSF, urine, etc. This kit can be used for extracting RNA from a variety of RNA virus, but not all viruses can be utilized as a source. Also, as it is difficult to extract only RNA from samples containing both DNA and RNA, a cell-free sample must be used in order to prevent DNA contamination.

Figure 4. The RT-PCR results of HCV-specific RNA obtained from HCV-positive serum by using *AccuPrep*® Viral RNA Extraction Kit

M: 100 bp ladder (D-1030, Bioneer),
Lane1, 2: 216 bp HCV product

Bacterial RNA Extraction Kit

AccuPrep® Bacterial RNA Extraction Kit enables rapid and convenient extraction of RNA from gram-positive and gram-negative bacteria. Proteins and other contaminants are effectively removed through silica-based spin columns and optimized buffers. This process is ideal since no organic solvents are used. Using *AccuPrep*® Bacterial RNA Extraction Kit, you can extract stable RNA without degradation.

	Conc. (ng/μl)	$A_{260/280}$
Bioneer	73.4	2.06
	69.6	2.04
Company Q	91.2	2.01
	78.3	2.01

Figure 5. Gram-negative bacterial RNA extraction using *AccuPrep*® Bacterial RNA Extraction Kit
RNA extraction from 1×10^8 cells of *E.coli*.
DNase was not treated.

	Conc. (ng/μl)	$A_{260/280}$
Bioneer	58.1	2.07
	62.8	2.06
Company Q	48.4	2.03
	51.6	2.03

Figure 6. Gram-positive bacteria RNA extraction using *AccuPrep*® Bacterial RNA Extraction Kit
RNA extraction from 1×10^8 cells of *Bacillus Subtillis*.
DNase was not treated.

Specification & Application

Product	Universal RNA Extraction Kit	Bacterial RNA Extraction Kit	Viral RNA Extraction Kit
Sample	Cultured animal cells, mammalian tissue, plant tissue	Bacteria culture (gram-negative, gram-positive)	Viral RNA in body fluid (blood, plasma, serum and urine)
Expected yield	Variable	Variable	Variable
Prep. time	< 20 min	< 40 min	< 30 min
Application	RT-PCR, RT-qPCR, cDNA synthesis, northern/dot/slot blot analysis, microarray, and RNA-seq		RT-PCR, RT-qPCR, cDNA synthesis, poly A+ RNA selection, northern/dot/slot blot analysis, and pathogen detection

Ordering Information

Cat. no.	Products
K-3111/K-3112	*AccuPrep*® Nano-Plus Plasmid Mini Extraction Kit, 200 reactions/50 reactions
K-3122	*AccuPrep*® Nano-Plus Plasmid Midi Extraction Kit, 25 reactions
K-3131/K-3132	*AccuPrep*® Nano-Plus Plasmid Maxi Extraction Kit, 25 reactions/10 reactions
K-3030/K-3030-1	*AccuPrep*® Plasmid Mini Extraction Kit, 200 reactions/50 reactions
K-3032	*AccuPrep*® Genomic DNA Extraction Kit, 100 reactions
K-3031	*AccuPrep*® Plant Genomic DNA Extraction Kit, 100 reactions
K-3036	*AccuPrep*® Stool DNA Extraction Kit, 100 reactions
K-3140/K-3141	*AccuPrep*® Universal RNA Extraction Kit, 100 reactions/50 reactions
K-3142/K-3143	*AccuPrep*® Bacterial RNA Extraction Kit, 100 reactions/50 reactions
K-3033	*AccuPrep*® Viral RNA Extraction Kit, 100 reactions
K-3037/K-3038	*AccuPrep*® PCR/Gel DNA Purification Kit, 200 reactions/50 reactions
K-3030-2	*AccuPrep*® Plasmid DNA Extraction Kit for 96 well vacuum Block, 96-well plate x 2
K-3032-2	*AccuPrep*® Genomic DNA Extraction Kit for 96 well vacuum Block, 96-well plate x 2
K-3034-2	*AccuPrep*® PCR Purification Kit for 96 well vacuum Block, 96-well plate x 2

Cat. no.	Related Products
A-9030	*BioVac*™ 96 Vacuum Manifold

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