

# AccuPrep®

## Spin Column Type Nucleic Acid Preparation

The isolation and the purification of nucleic acid from biological samples are routine tasks in molecular biology. The method of isolation and purification must be selected wisely depending upon the specific application.

The type of extraction and purification kit is selected depending upon:

- **Type of nucleic acid** - Plasmid DNA, Genomic DNA, Total RNA, Viral RNA
- **Sample source** - mammalian, lower eukaryotes, prokaryotes, plants, or viruses
- **Sample type** - whole organism, tissue, cultured cells, blood, stool, etc.
- **Quality required** - yield, purity, purification time, and cost of isolation
- **Post isolation application** - PCR, cloning, labeling, phosphorylation, blotting, RT/PCR, cDNA synthesis, RNase protect assays, etc.



Bioneer's nucleic acid isolation and purification kits are classified into three distinct series of products.

| Categories   | Products   |   |
|--|--|---|
| <b>Single Spin Column Types</b><br>In the Single Spin Column Types, a spin-column type tube and chaotropic salts are used to bind nucleic acids to a silica based membrane filter. Contaminants are removed during subsequent washing steps and highly-purified nucleic acid is eluted with a low-salt buffer.<br>The Single Spin Column Types have simple protocols, use no harmful organic solvents, and require no ethanol precipitation. | K-3111<br>K-3122<br>K-3131<br>K-3030<br>K-3032<br>K-3031<br>K-3036<br>K-3033<br>K-3034<br>K-3035 | AccuPrep® Nano-Plus Plasmid Mini Extraction Kit<br>AccuPrep® Nano-Plus Plasmid Midi Extraction Kit<br>AccuPrep® Nano-Plus Plasmid Maxi Extraction Kit<br>AccuPrep® Plasmid Extraction Kit<br>AccuPrep® Genomic DNA Extraction Kit<br>AccuPrep® GMO DNA Extraction Kit<br>AccuPrep® Stool DNA Extraction Kit<br>AccuPrep® Viral RNA Extraction Kit<br>AccuPrep® PCR Purification Kit<br>AccuPrep® Gel Purification Kit |
| <b>96-Well Plate Types</b><br>Based on the simple AccuPrep® protocol, the 96-Well Plate Types of products are designed to isolate high-purity nucleic acid from 1 up to 96 samples simultaneously using the BioVac™ 96 Vacuum Manifold.<br>The extracted DNA can be used in subsequent applications without any additional purification.   | K-3030-2<br>K-3032-2<br>K-3034-2<br>A-9030   | AccuPrep® Plasmid Extraction Kit for 96 well vacuum block<br>AccuPrep® Genomic DNA Extraction Kit for 96 well vacuum block<br>AccuPrep® PCR Purification Kit for 96 well vacuum block<br>BioVac™ 96 Vacuum Manifold   |
| <b>Solution Types</b><br>The Solution Types are solution-based product that optimizes traditional nucleic acid extraction methods for maximum speed and convenience.<br>AccuZol™ have an optimized buffer system for a specific type of nucleic acid source allowing for maximum removal of contaminants and minimal loss of yield.  | K-3090   | AccuZol™ Total RNA Extraction Solution  |

# Selection Chart

| Nucleic Acid | Product   | Product Type          | Source   | Yield                                  | Experiment Time              |
|--------------|---|-----------------------|--|--|------------------------------|
| Plasmid DNA  | AccuPrep® Nano-Plus Plasmid Mini Extraction Kit               | Spin Column           | Bacterial Cultures   | Up to 20 µg                            | < 10 minutes                 |
|              | AccuPrep® Nano-Plus Plasmid Midi Extraction Kit               | Spin Column Pump Type | Bacterial Cultures   | Up to 75 - 100 µg<br>Up to 75 -100 µg  | < 40 minutes<br>< 30 minutes |
|              | AccuPrep® Nano-Plus Plasmid Maxi Extraction Kit               | Spin Column Pump Type | Bacterial cultures   | Up to 300 -500 µg<br>Up to 300 -500 µg | < 55 minutes<br>< 45 minutes |
|              | AccuPrep® Plasmid Mini DNA Extraction Kit                     | Spin Column           | Bacterial cultures   | Up to 20 µg                            | < 30 minutes                 |
|              | AccuPrep® Plasmid DNA Extraction Kit for 96 well vacuum block | 96-Well Plate         | Bacterial Cultures   | Up to 12 µg                            | < 40 minutes                 |
| Genomic DNA  | AccuPrep® Genomic DNA Extraction Kit                          | Spin Column           | Cultured cells, lymphocytes, mammalian tissue, and whole human blood         | Up to 20 µg                            | < 30 min.                    |
|              | AccuPrep® GMO DNA Extraction Kit                              | Spin Column           | Agricultural products (beans, corn, rice, tofu, and bead sprouts)            | 20 - 40 µg                             | < 50 min.                    |
|              | AccuPrep® Stool DNA Extraction Kit                            | Spin Column           | Fresh or frozen stool and other samples with large amounts of PCR inhibitors | 2 - 5 µg                               | < 50 min.                    |
|              | AccuPrep® Genomic DNA Extraction Kit for 96 well vacuum Block | 96-Well Plate         | Cultured cells, lymphocytes, mammalian tissue, and whole human blood         | Variable*                              | < 40 min.                    |
| RNA          | AccuZol™ Total RNA Extraction Solution                        | Solution Based        | Animal tissue, cultured cell, bacterial cell, plant tissue, and blood        | Variable*                              | = 1hr                        |
| Clean Up     | AccuPrep® PCR Purification Kit                                | Spin Column           | PCR Products and labeled, modified, or digested DNA                          | > 90%                                  | < 5 minutes                  |
|              | AccuPrep® Gel Purification Kit                                | Spin Column           | DNA in agarose gels, PCR products, and enzyme reaction mixtures              | > 70%                                  | < 15 minutes                 |
|              | AccuPrep® PCR Purification Kit for 96 well vacuum block       | 96-Well Plate         | PCR products and labeled, modified or digested DNA                           | 70 - 95%                               | < 25minutes                  |

\* Yield will vary according to sample type.

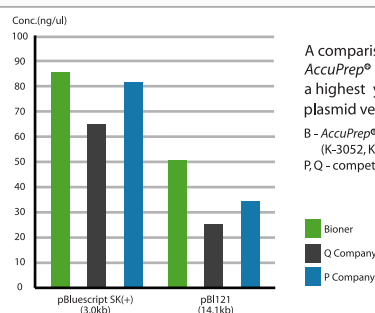
## Featured Products

### Nano-Plus Plasmid Mini Extraction Kit

Nano-Plus Plasmid Mini Extraction Kit  
Extraction of high-purity plasmid DNA from bacterial cultures such as *E.coli*  
A<sub>260</sub> /A<sub>280</sub> ratio greater than 2.0 with at least 1.8. Yields of up to 20 µg of DNA can be acquired per 4ml of cultured cells.

Protocol <10 minutes

- Applications - sub-cloning, sequencing, transformation, transfection, and In-vitro transcription/ translation



A comparison of yield with various purification systems. AccuPrep® Nano-Plus Plasmid Mini Extraction Kit gives a highest yield for both high and low copy number plasmid vector.

B - AccuPrep® Nano-Plus Plasmid Mini Extraction Kit (K-3052, K-3052-1)  
P, Q - competitors.

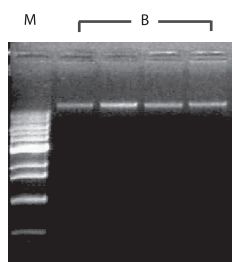
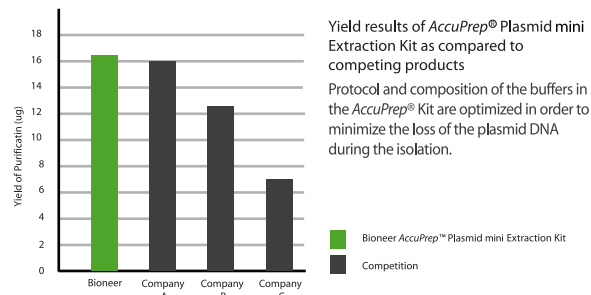
■ Bioner  
■ Q Company  
■ P Company

## Plasmid mini Extraction Kit

Extraction of high-purity plasmid DNA from bacterial cultures such as *E.coli*.  $A_{260}/A_{280}$  ratio greater than 2.0 with at least 1.8. Yields of up to 20 µg of DNA can be acquired per 4 ml of cultured cells.

Protocol < 30 minutes

- Applications - PCR, cloning, sequencing, *in vitro* transcription, and labeling



Gel electrophoresis of whole blood genomic DNA purified with AccuPrep® Genomic DNA Extraction Kit

Lane M : 1 kb DNA Ladder  
Lane B : AccuPrep® Genomic DNA Extraction Kit

## Genomic DNA Extraction Kit

Extraction of total genomic DNA from whole blood, lymphocytes, mammalian tissue and cultured cells. Average yield of 6 µg of total genomic DNA from 200 µl of whole human blood and up to 20 µg from  $5 \times 10^6$  lymphocytes, 25~ 50 mg mammalian tissue, or  $10^4 \sim 10^8$  cultured cells.

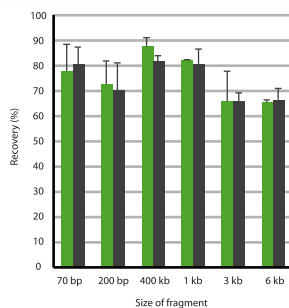
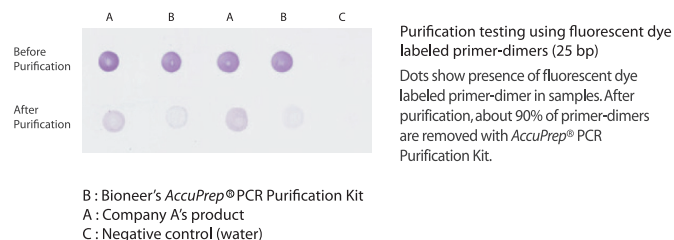
Protocol < 30 minutes

- Applications - PCR, Southern Blotting, and different forensic applications

## PCR Purification Kit

Rapid purification of DNA fragments (dsDNA and ssDNA) from PCR products and other enzymatic reactions. Purification of up to 10 µg of DNA fragment from PCR and other enzymatic products within 5 minutes. Yield > 90%. Size range is 100 bp - 10 kb, so common 20 - 40 mer oligonucleotides are easily removed.

- Applications - Cloning and sequencing



Recovery efficiency comparison of AccuPrep® and a competitor's product. The graph shows recovery efficiency of purified DNA from agarose gel.

## Gel Purification Kit

Rapid purification of DNA fragments or plasmid DNA from low-melting, TAE and TBE agarose gels, PCR products and enzymatic reaction mixtures. Fragments 70 bp – 10 kb can be isolated in less than 15 mins with yields greater than 70%.

- Applications - Labeling, sequencing, cloning, and PCR

## High Throughput Options

### AccuPrep® Plasmid Extraction Kit for 96 well vacuum block

High throughput extraction of plasmid DNA from 96 different bacterial culture samples. Average  $A_{260}/A_{280}$  ratio greater than 1.7. Maximum yield of 12 µg.

Protocol < 40 minutes

### AccuPrep® PCR Purification Kit for 96 well vacuum block

High throughput purification kit that can purify product from 96 PCR reactions. Yields of 70 – 95% obtained in < 25 minutes

### AccuPrep® Genomic DNA Extraction Kit for 96 well vacuum block

Simultaneous extraction of genomic DNA from 96 samples of cultured cells, whole blood, buffy coat, lymphocytes, plasma, serum, and other biological fluids. Yield is sample dependant. Protocol < 40 minutes

### BioVac™ 96 Vacuum Manifold

Designed for use with the Bioneer 96-Well Plate Types handles 96 samples simultaneously for high throughput extraction

## Trademark

'AccuPrep®' and 'AccuZol™' are registered trademarks.

## Ordering Information

| Products  | Cat. no. |
|---|----------|
| <i>AccuPrep®</i> Nano-Plus Plasmid Mini Extraction Kit, 200 reactions                   | K-3111   |
| <i>AccuPrep®</i> Nano-Plus Plasmid Mini Extraction Kit, 50 reactions                    | K-3112   |
| <i>AccuPrep®</i> Nano-Plus Plasmid Midi Extraction Kit, 25 reactions                    | K-3122   |
| <i>AccuPrep®</i> Nano-Plus Plasmid Maxi Extraction Kit, 25 reactions                    | K-3131   |
| <i>AccuPrep®</i> Nano-Plus Plasmid Maxi Extraction Kit, 10 reactions                    | K-3132   |
| <i>AccuPrep®</i> Plasmid Extraction Kit, 200 extractions                                | K-3030   |
| <i>AccuPrep®</i> Genomic DNA Extraction Kit, 100 extractions                            | K-3032   |
| <i>AccuPrep®</i> GMO DNA Extraction Kit, 100 extractions                                | K-3031   |
| <i>AccuPrep®</i> Stool DNA Extraction Kit, 100 extractions                              | K-3036   |
| <i>AccuPrep®</i> Viral RNA Extraction Kit, 100 extractions                              | K-3033   |
| <i>AccuPrep®</i> PCR Purification Kit, 200 purifications                                | K-3034   |
| <i>AccuPrep®</i> PCR Purification Kit, 50 purifications                                 | K-3034-1 |
| <i>AccuPrep®</i> Gel Purification Kit, 200 purifications                                | K-3035   |
| <i>AccuPrep®</i> Gel Purification Kit, 50 purifications                                 | K-3035-1 |
| <i>AccuPrep®</i> Plasmid DNA Extraction Kit for 96 well vacuum Block, 96-well plate x 2 | K-3030-2 |
| <i>AccuPrep®</i> Genomic DNA Extraction Kit for 96 well vacuum Block, 96-well plate x 2 | K-3032-2 |
| <i>AccuPrep®</i> PCR Purification Kit for 96 well vacuum Block, 96-well plate x 2       | K-3034-2 |
| Related Products  | Cat. no. |
| <i>MagListo™</i> 5M Cell Total RNA Extraction Kit, 100 rxn in mini                      | K-3611   |
| <i>MagListo™</i> 5M Tissue Total RNA Extraction Kit, 100 rxn in mini                    | K-3613   |
| <i>MagListo™</i> 5M Plasmid DNA Extraction Kit, 100 rxn in mini                         | K-3601   |
| <i>MagListo™</i> 5M Genomic DNA Extraction Kit, 100 rxn in mini                         | K-3603   |
| <i>MagListo™</i> 5M Plant Genomic DNA Extraction Kit, 100 rxn in mini                   | K-3605   |
| <i>MagListo™</i> 5M Forensic Genomic DNA Extraction Kit, 100 rxn in mini                | K-3615   |
| <i>MagListo™</i> 5M Gel Extraction Kit, 100 rxn in mini                                 | K-3607   |
| <i>MagListo™</i> 5M PCR Purification Kit, 100 rxn in mini                               | K-3609   |
| <i>MagListo™</i> His-tagged Protein Purification Kit                                    | K-7200   |
| <i>MagListo™</i> Protein G Kit  | K-7210   |
| <i>MagListo™</i> Protein A Kit  | K-7220   |
| <i>AccuZol™</i> Total RNA Extraction Solution, 100 extractions                          | K-3090   |
| <i>BioVac™</i> 96 Vacuum Manifold   | A-9030   |

## Contact Us

### Bioneer Corporation

8-11 Munpyeongseo-ro, Daedeok-gu  
Daejeon, 34302, Republic of Korea  
Tel: +82-42-930-8777 (Korea: 1588-9788)  
Fax: +82-42-930-8688  
E-mail: sales@bioneer.com

### Bioneer Inc.

1301 Marina Village PKWY, Suite 110  
Alameda, CA 94501, USA  
Toll Free: +1-877-264-4300  
Fax: +1-510-865-0350  
E-mail: order.usa@bioneer.us.com

### Bioneer R&D Center

Korea Bio Park BLDG #B-702  
700 Daewangpangyo-ro, Bundang-gu, Seongnam-si  
Gyeonggi-do, 13488, Republic of Korea  
Tel: +82-31-628-0500  
Fax: +82-31-628-0555