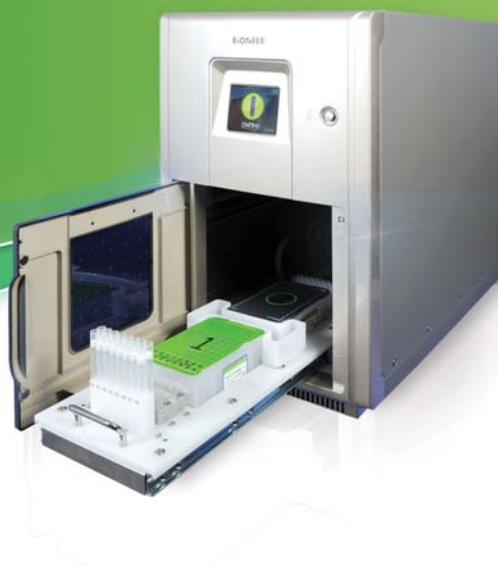


# *ExiProgen*<sup>™</sup> Protein Synthesis RNA/DNA Prep System

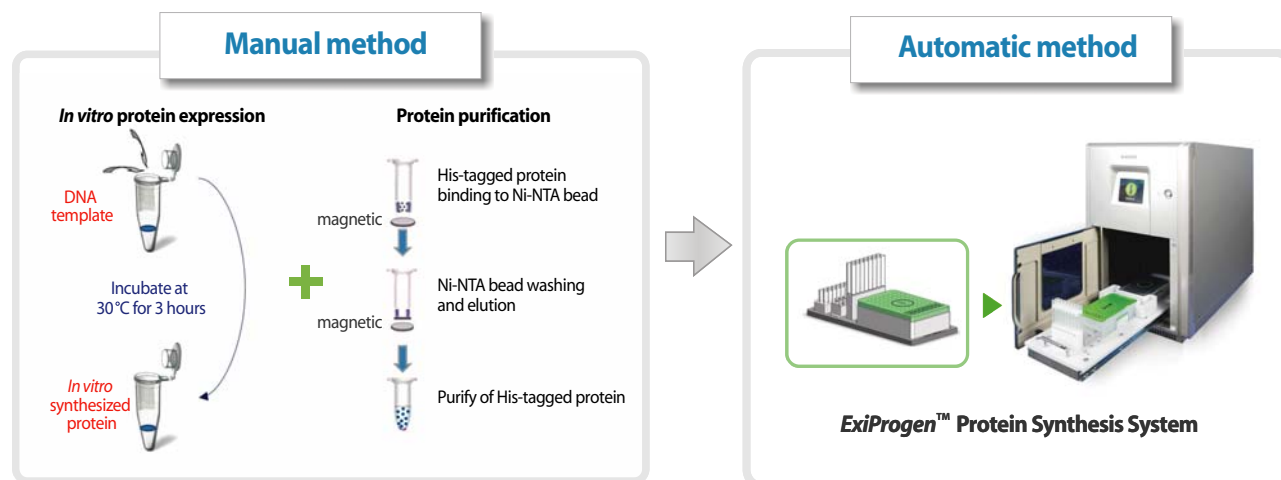
Introducing the world's first automated protein synthesis and  
RNA/DNA purification system!



**BIONEER**  
Innovation • Value • Discovery

# ExiProgen™ - Automated Protein Synthesis/Purification System ●●●

Bioneer's ExiProgen™ is the world's first automated protein synthesis and RNA/DNA purification system. Proteins can be expressed *in vitro* and affinity purified (using His-tag purification) for proteins up to 117 kD in size. Up to 16 different types of highly pure proteins can be obtained each from 6~10 µg of DNA. (Figure 1) Because the entire process is automated, you will obtain reliable and reproducible results run after run.



**Figure 1. Principle of protein synthesis with ExiProgen™**

Left panel: Manual method of protein expression/purification - sequential and tedious

Right panel: Automated method of protein expression/purification - simply add DNA and press start!

## Features and Benefits

- **Fully automatic: DNA-in-Protein-out**  
Pipette 6~10 µg of DNA into the kit and load into ExiProgen™ for high-purity proteins within 6 hours.
- **Parallel Process**  
Synthesize and purify 1 to 16 unique proteins simultaneously.
- **High performance**  
The system enables synthesis of proteins that are toxic to *in vivo* expression systems.
- **High purity and High yield**  
Each well will yield up to 100 µg protein that is over 90% pure.
- **Reproducibility**  
Since you only need to add template DNA to obtain your protein, reproducibility is maximized.

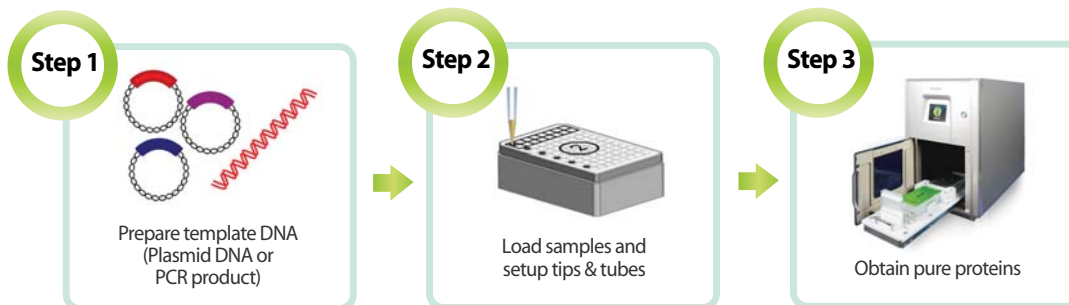
## Template DNA

The template DNA for protein synthesis can be in plasmid or PCR product form. Bioneer offers our pBIVT expression vector, or our ProXpress PCR template kit for the generation of template DNA. Bioneer's Gene Synthesis Service will provide template DNA that is optimized for expression with ExiProgen™ kits. For maximum protein synthesis, we recommend you choose our **ExiProgen™ Gene Synthesis Service**. Please visit our homepage ([www.bioneer.com](http://www.bioneer.com)) for more information.

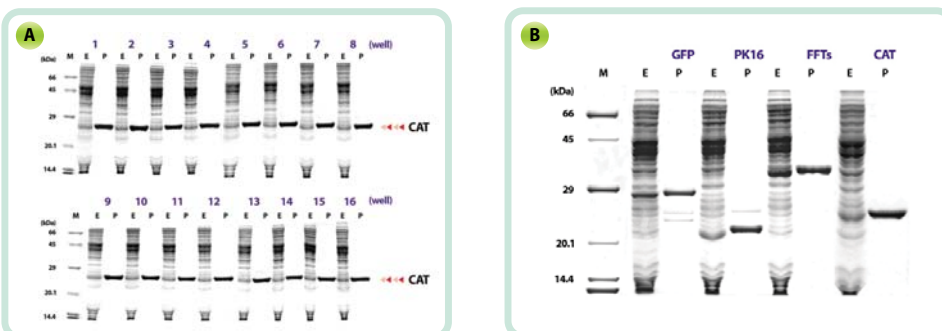
## Experimental Data

### • Experimental Procedure

- Template DNA: 6-10 µg / 40 µl
- ExiProgen protocol number: 902
- Total reaction time: <6 hr
- Total yield: ~100 µg/reaction



### • Experimental Results



This data illustrates that the ExiProgen™ can express and purify up to 16 proteins per run with consistently high purity over 90%.

Panel A: Protein synthesis data of CAT (Chloramphenicol Acetyl Transferase)

Lane 1-16: Number of wells, Lane M: AccuLadder™ Protein Size Marker (Low), Lane E: Expression sample, Lane P: Purification sample

Panel B: Protein synthesis data of various proteins

Top of the lane: Protein type, Lane M: AccuLadder™ Protein Size Marker (Low), Lane E: Expression sample, Lane P: Purification sample

## Ordering Information

| Product                                                                       | Cat. No. | Price       |
|-------------------------------------------------------------------------------|----------|-------------|
| ExiProgen™                                                                    | A-5041   | \$18,750.00 |
| ExiProgen™ EC1 Protein Synthesis Kit, 16 reactions*                           | K-7300   | \$708.00    |
| ExiProgen™ EC1 Protein Synthesis Kit, 32 reactions*                           | K-7301   | \$1,188.00  |
| ExiProgen™ EC1 Protein Synthesis Kit, 96 reactions*                           | K-7302   | \$2,940.00  |
| pBIVT vector set-1, 5 µg each                                                 | K-7350   | \$240.00    |
| ExiProgen™ ProXpress PCR Template Kit (N-term, His-tag), 20 ml/rxn, 96 tubes  | K-7000   | \$299.00    |
| ExiProgen™ ProXpress PCR Template Kit (N-term, His-tag), 20 ml/rxn, 480 tubes | K-7001   | \$1,196.00  |
| ExiProgen™ ProXpress PCR Template Kit (C-term, His-tag), 20 ml/rxn, 96 tubes  | K-7002   | \$299.00    |
| ExiProgen™ ProXpress PCR Template Kit (C-term, His-tag), 20 ml/rxn, 480 tubes | K-7003   | \$1,196.00  |
| Gene Synthesis Service                                                        | S-2041   | Inquire     |

\* A subset of pET vectors such as pET15b, pET22b, pET23a, and pET28a have been used successfully, but should be tested for each protein.

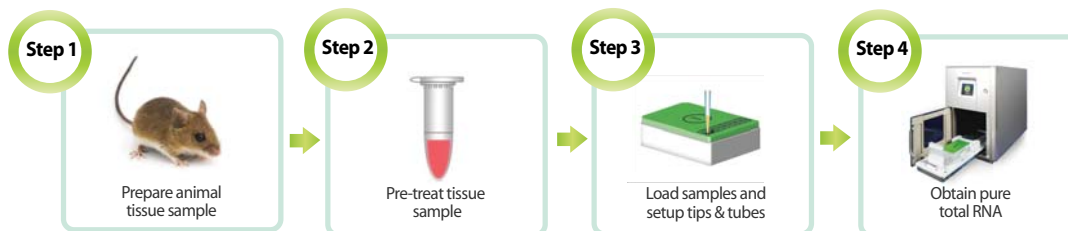
# ExiProgen™ - Automated RNA Extraction System ●●●

## Features and Benefits

- All reagents necessary for total RNA extraction are contained within the pre-filled Buffer Cartridges.
- Additional user convenience is provided with RNase-free disposable filter tips and elution tubes, which are all provided within the kit packaging.
- Total RNA can be extracted from a minimum of 1 to a maximum of 16 samples simultaneously.
- Silica magnetic particles developed in-house with Bioneer technology (Korea Patent No. 10-1053023) for unparalleled performance.
- Excellent reproducibility by using an automated extraction system (ExiProgen™).

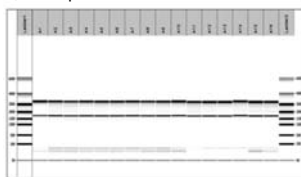
## 1. Total RNA Extraction from Animal tissue

### • Experimental Procedure

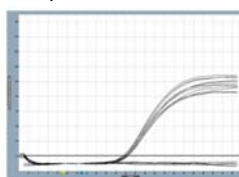


### • Experimental Results

#### a) Electrophoresis result



#### b) Real time RT-PCR result

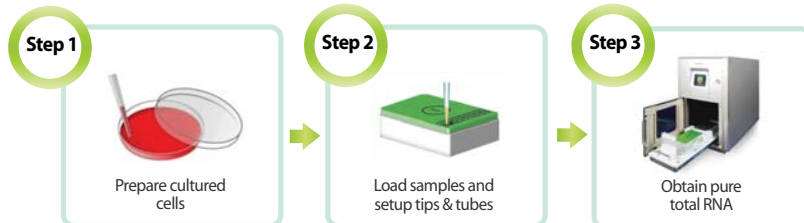


**a)** Electrophoresis result using LabChip® GX (Caliper Life science) with extracted total RNAs from rat liver samples. Average yield is up to 25 µg and RQS (RNA Quality Score) is over 9.5.

**b)** Real time RT-PCR results using Exicycler™ 96 Real-Time Quantitative PCR System (A-2060).

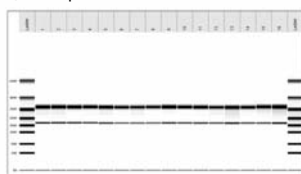
## 2. Total RNA Extraction from Cultured cells

### • Experimental Procedure

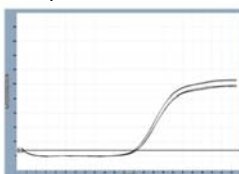


### • Experimental Results

#### a) Electrophoresis result



#### b) Real time RT-PCR result



**a)** Electrophoresis result using LabChip® GX (Caliper Life science) with extracted total RNAs from *HeLa* cell ( $1 \times 10^6$  cells) samples. Average yield is up to 10 µg and RQS (RNA Quality Score) is over 9.5.

**b)** Real time RT-PCR results using Exicycler™ 96 Real-Time Quantitative PCR System (A-2060).

## Ordering Information

| Product                                     | Cat. No. | Price    |
|---------------------------------------------|----------|----------|
| ExiPrep™ Tissue total RNA Kit, 96 reactions | K-3325   | \$385.00 |
| ExiPrep™ Cell total RNA Kit, 96 reactions   | K-3335   | \$385.00 |

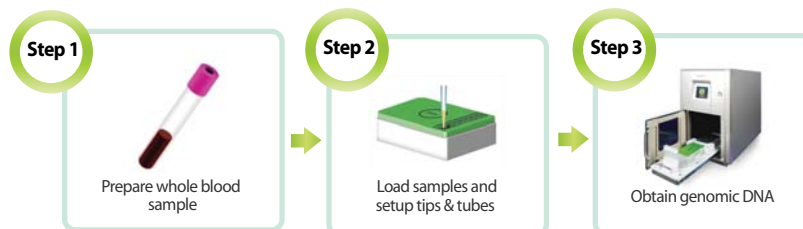
# ExiProgen™ - Automated DNA Extraction System ●●●

## Features and Benefits

- All reagents and enzymes necessary for genomic DNA extraction are contained within the pre-filled Buffer Cartridges.
- The DNase-free disposable filter tips, elution tubes and other consumables are contained within the kit packaging for added convenience.
- Genomic DNA can be extracted from 1 to up to 16 samples simultaneously.
- Silica magnetic particles developed in-house with Bioneer technology (Korea Patent No. 10-1053023) for unparalleled performance.
- Excellent reproducibility by using an automated extraction system (ExiProgen™).

## 1. Genomic DNA Extraction from Whole blood

### • Experimental Procedure

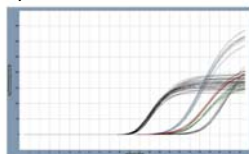


### • Experimental Results

#### a) Electrophoresis result



#### b) Real time RT-PCR result

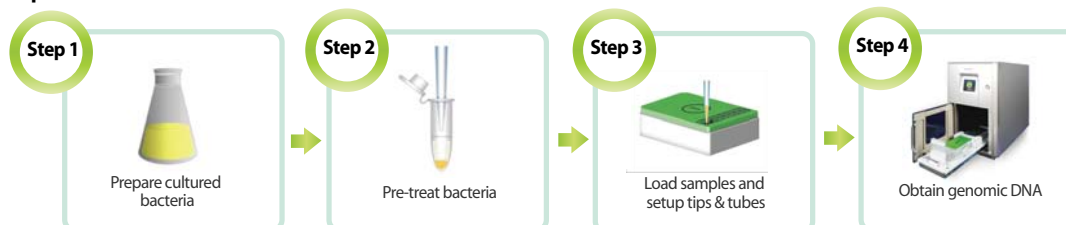


a) Electrophoresis result using 1% agarose gel with extracted genomic DNAs from 200  $\mu$ l of whole bloods. Odd number is extracted samples from whole blood and even number is extracted samples from D.W only. Average yield is up to 3 - 5  $\mu$ g and purity ( $A_{260/280}$ ) is over 1.8.

b) Real time PCR results using *Exicycler*™ 96 Real-Time Quantitative PCR System (A-2060).

## 2. Genomic DNA Extraction from Bacterial cells

### • Experimental Procedure

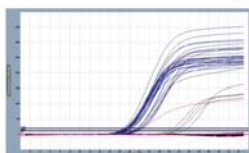


### • Experimental Results

#### a) Electrophoresis result



#### b) Real time RT-PCR result



a) Electrophoresis result using 1% agarose gel with extracted genomic DNAs from *E.coli* cells ( $1 \times 10^9$  cells). Odd number is extracted samples from *E.coli* cells and even number is extracted samples from D.W only. Average yield is up to 10  $\mu$ g and purity ( $A_{260/280}$ ) is over 1.8.

b) Real time PCR results using *Exicycler*™ 96 Real-Time Quantitative PCR System (A-2060).

## Ordering Information

| Product                                         | Cat. No. | Price    |
|-------------------------------------------------|----------|----------|
| ExiPrep™ Blood Genomic DNA Kit, 96 reactions    | K-3215   | \$264.00 |
| ExiPrep™ Tissue Genomic DNA Kit, 96 reactions   | K-3225   | \$264.00 |
| ExiPrep™ Bacteria Genomic DNA Kit, 96 reactions | K-3245   | \$264.00 |

| Product                                      | Cat. No.  | Price    |
|----------------------------------------------|-----------|----------|
| ExiPrep™ Plant Genomic DNA Kit, 96 reactions | K-3255    | \$264.00 |
| ExiPrep™ Beef Genomic DNA Kit, 96 reactions  | K-3200-CB | \$264.00 |
| ExiPrep™ Rice Genomic DNA Kit, 96 reactions  | K-3200-CR | \$264.00 |

# ExiProgen™ - Automated Protein Synthesis and Nucleic Acid Extraction System ●●●



- The world's first system capable of expressing and purifying protein and extracting nucleic acids.
- Obtain up to 100 µg of over 90% pure protein within 6 hours.
- Accelerate protein experiments by expressing and purifying up to 16 proteins simultaneously.
- The pre-installed protocols are optimized for protein expression and purification or nucleic acid extraction, for top-notch reproducibility.
- The compact footprint allows installation almost anywhere in the lab.
- The temperature-controlled heating block allows optimum reaction conditions for every type of experiment.
- The cooling block allows stable storage of the purified protein.

## Patents

1. Korea patent no.10-2011-0041126    2. PCT application no. PCT/KR2011/003245

## Specification

|                                |                                                                                    |
|--------------------------------|------------------------------------------------------------------------------------|
| Dimensions (W X H X D)         | 320 mm x 500 mm x 535 mm                                                           |
| Weight                         | 27 kg                                                                              |
| Temperature range              | 15-30 °C                                                                           |
| Humidity range                 | 20 - 80%, no condensation                                                          |
| Operating system               | Built-in                                                                           |
| User interface                 | 320 x 240 touch screen graphic LCD                                                 |
| Input voltage                  | 100 - 240 VAC                                                                      |
| Frequency                      | 50 / 60 Hz                                                                         |
| UV sterilization               | 5 minute cycle, 48.96 mJ/cm energy max 2                                           |
| Power supply                   | 24 VDC, 7.5 A(180 W)                                                               |
| Communications                 | TCP/IP                                                                             |
| Heating block                  | 30 - 90 °C                                                                         |
| Cooling block                  | 4 - 10 °C                                                                          |
| Max. number of samples per run | 1-16 samples per run                                                               |
| Reaction time                  | Protein expression & purification: ~ 6 hr/ Nucleic acid extraction: ~ 1 hr 30 min. |

## Contact Us

### Bioneer Corporation

8-11 Munpyeongseoro  
Daedeok-gu, Daejeon, 306-220,  
South Korea  
Tel: (Korea) 1588-9788  
(International) +82-42-930-8777  
Fax: +82-42-930-8600  
E-mail: sales@bioneer.com

### Bioneer, Inc.

1000 Atlantic Avenue  
Alameda, CA 94501 USA  
Toll free: 1-877-264-4300  
Fax: 1-510-865-0350  
E-mail: order.usa@bioneer.us.com

### Bioneer Trade (Shanghai) Co., Ltd

403 Room, Building 88, no.887  
Zuchongzhi Road, Zhangjiang High Tech Park,  
PuDong New District, Shanghai 201203, China  
Tel: +86-21-5080-0969  
Fax: +86-21-5080-1620  
E-mail: salescn@bioneer.com

### Seoul Office

2nd fl. Sansu B/D, #66, Gangnam-daero  
30-gil, Seocho-gu, Seoul, 137-130  
South Korea  
Tel: +82-2-598-1094  
Fax: +82-2-598-1096

© 2012 Bioneer Corporation. ExiProgen™ and ExiPrep™ are trademarks of Bioneer Corporation.

**BIONEER**  
www.bioneer.com