

Bioneer

Healthier Future for
Humanity with
Genomic Technology

ExiProgen™

Fully Automated Protein Synthesis and Nucleic Acid Extraction System



World's First, Fully Automated System for Protein Synthesis and Nucleic Acid Extraction

- ExiProgen™ (Instrument)
- Function I : Automatic Protein Synthesis
- Function II : Automatic Protein Purification
- Function III : Automatic Nucleic Acid Extraction
- Ordering Information

ExiProgen™ (Instrument)

**ExiProgen™ handles all the jobs
from DNA to protein!**

Automatic
Nucleic Acid
Extractor

Automatic
Protein
Synthesizer

Automatic
Protein
Purifier

**Features and Benefits**

- World's First, Fully Automated System for Protein Synthesis and Nucleic Acid Extraction
- 16 simultaneous reactions of protein synthesis and nucleic acid extraction
- Optimized protocols for each experiment provide reproducible results
- Temperature Controlled Block allows 4 to 90°C temperature change
- Magnet Block enables high-purity, high-efficiency protein purification and nucleic acid extraction
- Contamination Shield prevents well-to-well cross contamination caused by pipetting
- Touch screen maximizes user convenience through easy operation as well as real-time confirmation of experiment progress
- Automatic UV lamp sterilizes the inside of the instrument both before and after the experiment

Patents

- KR 10-2011-0041126, 10-2012-0090149, 10-2012-0138335, 10-2013-0152613
- PCT/KR2011/003245, PCT/KR2013/011022

Specification

Dimensions (W x H x D)	320 mm x 500 mm x 535 mm
Weight	27 kg
Usage environment	temperature 15-30°C / humidity 20-80%, no condensation
User interface	320 x 240 touch screen graphic LCD, 18bit color
Voltage	100 – 240 VAC, 50 / 60 Hz
Network	TCP/IP protocol
Magnet & Heating Block	30-90 °C
Temperature Controlled Block	4-90 °C

Function I : Automatic Protein Synthesis

ExiProgen™ protein synthesis kits perform cell-free protein synthesis in a reaction tube from template DNA such as T7 expression vector inserted with target gene and 6X His-tag sequences.

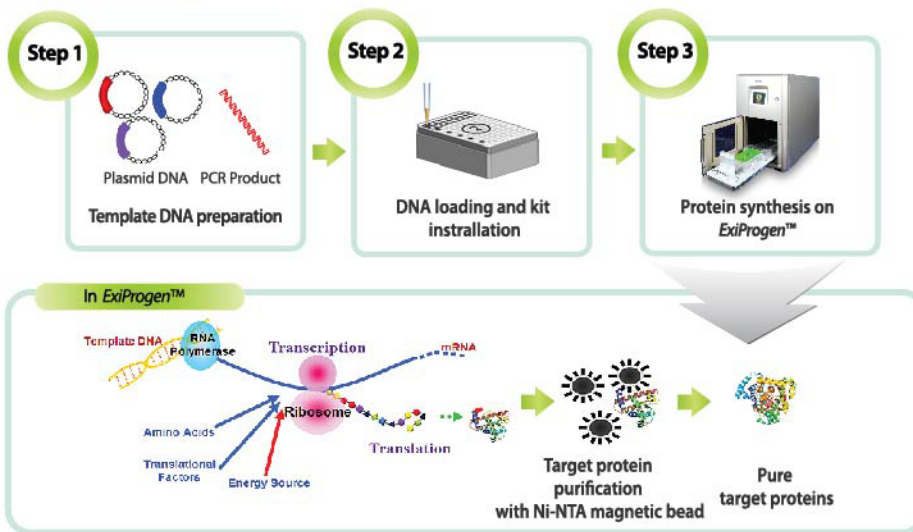
ExiProgen™ kits for protein synthesis

Target	Available kit
His-tagged protein	ExiProgen™ EC Protein Synthesis Kit
Small scale	ExiProgen™ EC-Maxi Protein Synthesis Kit
Large scale	ExiProgen™ EC-Tagfree Protein Synthesis Kit
Natural protein	ExiProgen™ EC-Disulfide Protein Synthesis Kit
Disulfide bonded protein	

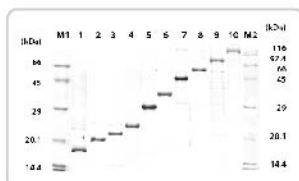
Features and Benefits

- Install an ExiProgen™ kit with template DNA into the instrument, and you can get a purified target protein
- Synthesize enzymes, growth hormones, antibodies, and even toxic proteins using ExiProgen™
- Synthesize various size, 8-to-16 different proteins simultaneously
- You can obtain 10~120 kDa proteins from plasmid DNA as template DNA and 10~60 kDa from PCR product
- Provide a reproducible results by minimizing human intervention
- Reduce variation between reactions

Procedure



Experimental Data

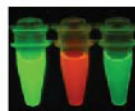


SDS-PAGE data of various proteins synthesized from plasmid DNA.

M1: AccuLadder™ Protein Size Marker (Low),
1: CalmL3 (17.5 kDa), 2: RNase H (20 kDa),
3: DUSP 3 (22 kDa), 4: CAT (24 kDa), 5: AcGFP (29 kDa),
6: EF-Ts (34 kDa), 7: VF (45 kDa), 8: Poly A polymerase (50 kDa),
9: MMLV RTase (75 kDa), 10: BM3 (117 kDa),
M2: AccuLadder™ Protein Size Marker (Broad)

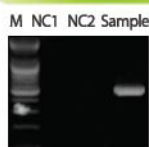
Fluorescent Proteins

SfGFP RFP AcGFP



Detection of fluorescence emitted from fluorescent proteins. Fluorescence from protein elution samples detected with UV illuminator.

MMLV Reverse Transcriptase



Amplification of GAPDH(500 bp) of Human total RNA with MMLV RTase was synthesized with ExiProgen™.
M: 100 bp DNA Ladder,
NC1: Negative Control 1 (No-RNA),
NC2: Negative Control 2 (No-enzyme),
Sample: 10 ng Human total RNA from HeLa cell.

Function II : Automatic Protein Purification

ExiProgen™ protein purification kits contains patented, Ni-NTA-coated silica magnetic beads, which purify target proteins containing His-tag from cell culture or cell lysate.

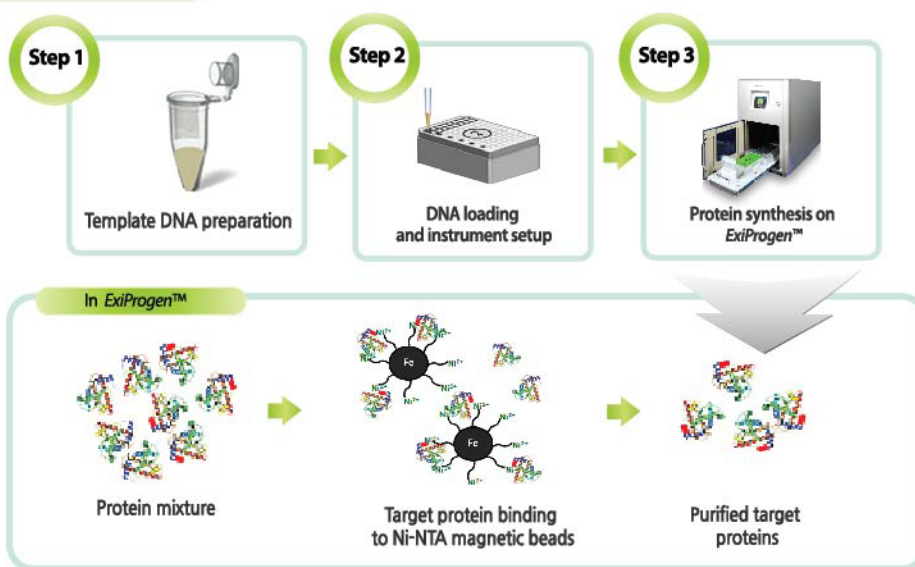
ExiProgen™ kits for protein purification

Sample type	Available kit
Bacteria sample	ExiProgen™ His-tagged Protein Purification Kit
<i>In vitro</i> expression sample	
Eukaryotic sample	ExiProgen™ Cell-Based Protein Purification Kit

Features and Benefits

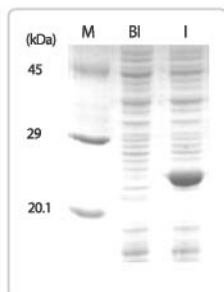
- Purify recombinant proteins expressed *in vivo* or *in vitro*
- Supplied pre-filled cartridge for protein purification. Just prepare cell lysate or cell-free expressed protein sample
- Provide 8 to 16 different proteins simultaneously purified in high purity of more than 90%

Procedure



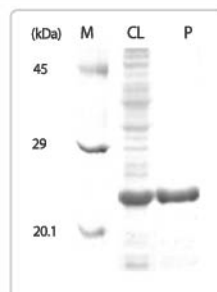
Experimental Data

Preparation of expressed target proteins



Recombinant *E. coli* cell with expressed of DUSP3
M: AccuLadder™ Protein Size Marker (Low),
BI: Pre-induction sample,
I: Post-induction sample.

Protein purification with ExiProgen™



Purification of DUSP3 with ExiProgen™
M: AccuLadder™ Protein Size Marker (Low),
CL: Sample of recombinant cell lysate,
P: Sample of purification.

Function III : Automatic Nucleic Acid Extraction

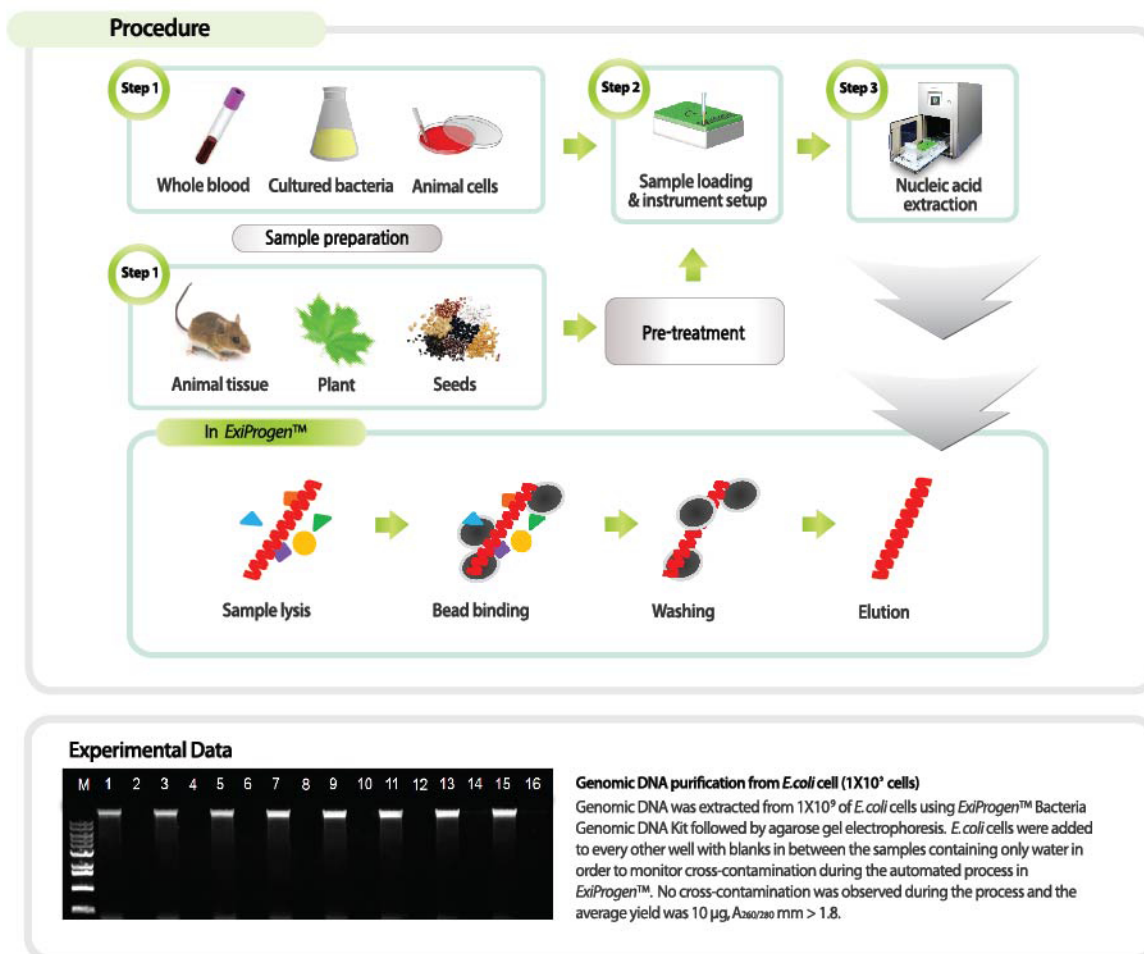
ExiProgen™ nucleic acid extraction kits extract nucleic acids using patented silica magnetic beads only by three steps: sample preparation, sample injection and instrument setup, and nucleic acid extraction.

ExiProgen™ kits for nucleic acid extraction

Target	Sample type	Available kit
Genomic DNA	Whole blood, Tissue, Bacteria	ExiProgen™ Blood/Tissue/Plant/Bacteria Genomic DNA Kit
Fragment DNA	Plasmid DNA, PCR product, Gel	ExiProgen™ Semi-Auto/Full-Auto Plasmid DNA Kit
		ExiProgen™ PCR Purification Kit
		ExiProgen™ Gel Extraction Kit
Total RNA	Animal tissue, Plant	ExiProgen™ Tissue/Plant total RNA Kit
Virus DNA/RNA	Serum, Plasma, Cell-free body fluid	ExiProgen™ Viral DNA/RNA Kit

Features and Benefits

- Supplied with pre-filled cartridges containing all the necessary enzymes and reagents for nucleic acid extraction
- Extracts nucleic acids from 1 to 16 samples simultaneously
- Provide reproducible results with ExiProgen™
- Optimized buffers and pretreatment protocols for various samples
- Optimized buffers for a broad range of DNA fragment sizes



Ordering information

Instrument	Cat. no.	Size
ExiProgen™	A-5041	
Protein Synthesis & Purification Kits	Cat. no.	Size
ExiProgen™ EC Protein Synthesis Kit	K-7300, 7301, 7302	16, 32, 96 reactions
ExiProgen™ EC-Maxi Protein Synthesis Kit	K-7310	8 reactions
ExiProgen™ EC-Tagfree Protein Synthesis Kit	K-7320	8 reactions
ExiProgen™ EC-Disulfide Protein Synthesis Kit	K-7330	8 reactions
ExiProgen™ His-tagged Protein Purification Kit	K-7220, K-7221	16, 32 reactions
ExiProgen™ Cell-Based Protein Purification Kit	K-7230	16 reactions
Nucleic acid Extraction Kits	Cat. no.	Size
ExiProgen™ Blood Genomic DNA Kit	K-4311	96 reactions
ExiProgen™ Tissue Genomic DNA Kit	K-4312	96 reactions
ExiProgen™ Bacteria Genomic DNA Kit	K-4314	96 reactions
ExiProgen™ Plant Genomic DNA Kit	K-4315	96 reactions
ExiProgen™ Tissue total RNA Kit	K-4342	96 reactions
ExiProgen™ Plant total RNA Kit	K-4344	96 reactions
ExiProgen™ Viral DNA/RNA Kit	K-4371	96 reactions
ExiProgen™ Gel Extraction Kit	K-4391	96 reactions
ExiProgen™ PCR Purification Kit	K-4392	96 reactions
ExiProgen™ Semi-Auto Plasmid DNA Kit	K-4381	48 reactions
ExiProgen™ Full-Auto Plasmid DNA Kit	K-4382	48 reactions
Related Products & Services	Cat. no.	Size
ExiProgen™ ProXpress PCR Template Kit	K-7400, 7401	16, 32 reactions
pBIVT vector set-1	K-7350	Each 5 µg
AccuRapid™ Cell-Free Protein Expression Kit	K-7250	45 µl x 24 reactions
AccuRapid™ Midi Protein Expression Kit	K-7260	1 ml x 5 reactions
AccuRapid™ Maxi Protein Expression Kit	K-7270	10 ml x 1 reaction
AccuRapid™ Protein Synthesis Kit	K-7280	5 reactions
AccuPrep® PCR Purification Kit	K-3034-1, 3034	50, 200 reactions
AccuPrep® Gel Purification Kit	K-3035-1, 3035	50, 200 reactions
AccuPrep® Nano-Plus Plasmid Mini Extraction Kit	K-3112, 3111	50, 200 reactions
AccuPrep® Nano-Plus Plasmid Midi Extraction Kit	K-3122	25 reactions
AccuPrep® Nano-Plus Plasmid Maxi Extraction Kit	K-3132, 3131	10, 25 reactions
AccuPrep® Plasmid Mini Extraction Kit	K-3030-1, 3030	50, 200 reactions
AccuLadder™ 100 bp DNA Ladder	D-1030	250 µl (135 ng/µl)
AccuLadder™ 1kb DNA Ladder	D-1040	500 µl (130 ng/µl)
AccuLadder™ Protein Size Marker (Low)	D-2020	500 µl
AccuLadder™ Protein Size Marker (Broad)	D-2010	500 µl
Gene Synthesis Service	S-2041	—
Protein Expression & Synthesis Service	—	—
Gene to Protein Service	—	—

Contact Us

Bioneer Corporation

8-11, Munpyeongseo-ro
Daedeok-gu, Daejeon 306-220
Republic of 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

806 Room, Building 2, No.500 Jiayun Road,
ZhouPu Town, PuDong New District, Shanghai,
China
Tel: +86-21-5080-0969
Fax: +86-21-5080-1620
E-mail: salescn@bioneer.com

Bioneer R&D Center

B-702, Korea Bio Park Bldg.,
700, Daewangpangyo-ro, Bundang-gu,
Seongnam-si, Gyeonggi-do,
463-400, Republic of Korea
Tel: +82-31-628-0500
Fax: +82-31-628-0555