

advanced, flexible, proven, patented*
cell-free translation

PURESYSTEM

from The Post Genome Research Institute

* Patent Number
US : 7,118,883
EU : EP131907B1



- **PURESYSTEM** kits pre-configured for producing
unmodified proteins
folded proteins
S-S bonded proteins
or
- **PURESYSTEM** ▪ kits for translation research.
- Translated proteins are tag free.
- Highly defined recombinant HIS-tagged translation components for easy protein purification and precision reaction controllability.
- Simple three hour protocol.



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PURESYSTEM classic II

PURESYSTEM is a proprietary protein synthesis and purification technology of Post Genome Institute Co., Ltd (PGI). This is a novel reconstituted cell-free protein synthesis system which consists of purified components necessary for transcription, translation and energy regeneration. In **PURESYSTEM**, all protein factors for transcription and translation are tagged with hexahistidine: 3 initiation factors (IF1, IF2, IF3), 3 elongation factors (EF-G, EF-Tu, EF-Ts), 3 release factors (RF1, RF2, RF3), ribosome recycling factor, 20 aminoacyl-tRNA synthetases, methionyl-tRNA transformylase and T7 RNA polymerase. The reagents also contain *E. coli* ribosome, amino acids, NTPs, *E. coli* tRNA and the energy regeneration system, so the target protein can be synthesized just by addition of the template DNA to the reaction.

PURESYSTEM classic II is the basic/standard kit among all **PURESYSTEM** kits.

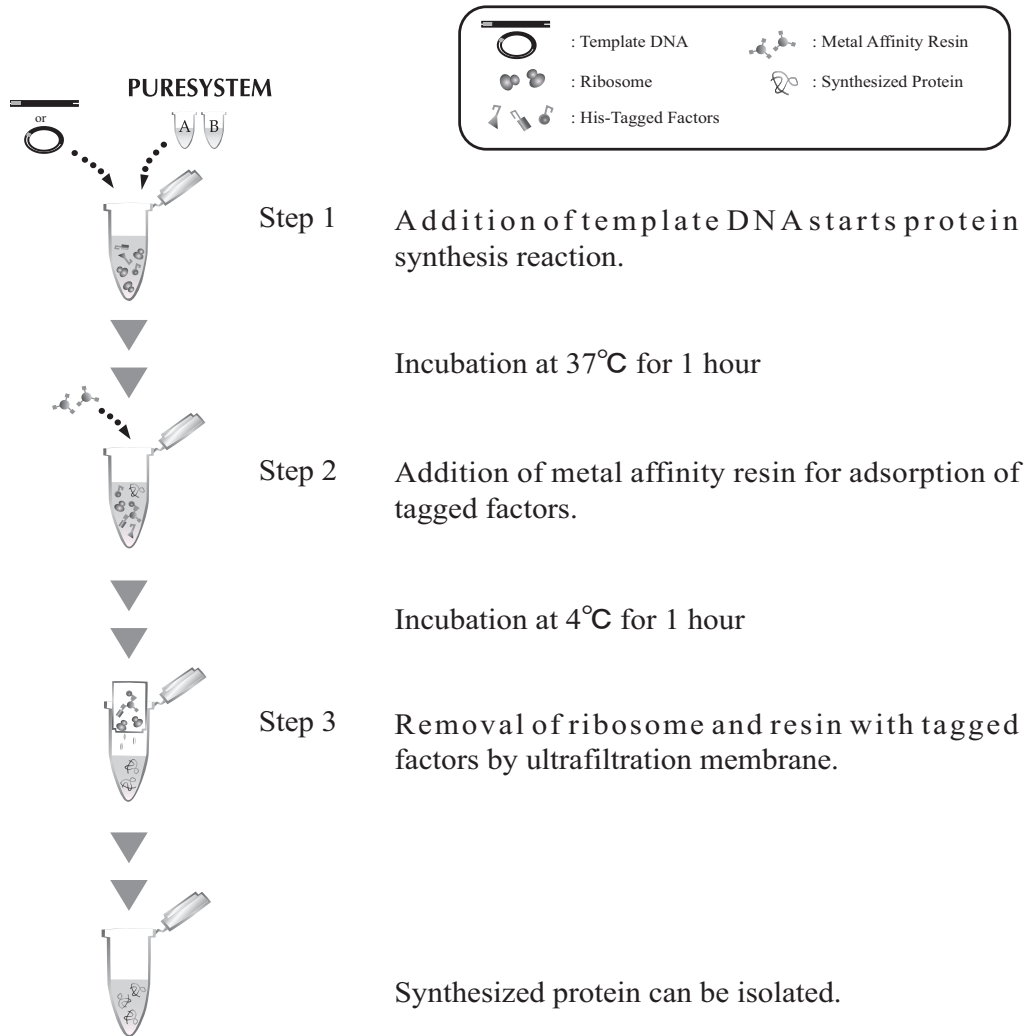


Figure : Schematic diagram of protein synthesis and purification by **PURESYSTEM**

- PURESYSTEM classic II 96 (50 ul × 96) code: PGM-PURE2048C**
- PURESYSTEM classic II standard (1 ul × 3) code: PGM-PURE2030C**
- PURESYSTEM classic II mini (50 ul × 8) code: PGM-PURE2004C**



PURESYSTEM S-S

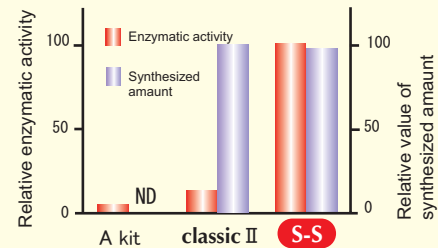
For synthesis of disulfide-bonded proteins

PURESYSTEM S-S is the novel cell-free translation kit for proteins that require formation of disulfide bond(s).

- No special equipments and reagents required.
- Cell-free translation is ready-to-start, by simply mixing the two liquid components.
- No addition of unstable microsomes are necessary.
- Easy to verify translational efficiency and disulfide bond(s) formation using alkaline phosphatase as a control (optional)



Synthesis of Alkaline phosphatase and its activity



Alkaline phosphatase synthesized with **PURESYSTEM S-S** had the enzymatic activity. (ND:Not Determined)

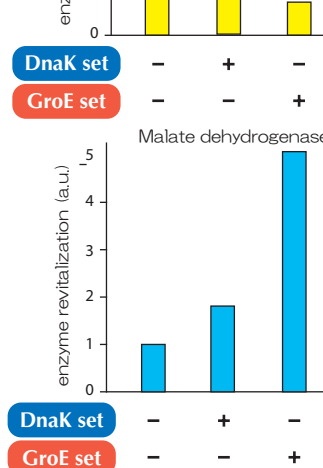
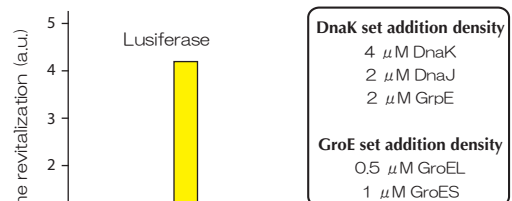
- PURESYSTEM S-S 96 (50 ul × 96)** code : PGM-PURE3048S
- PURESYSTEM S-S standard (1 ul × 3)** code : PGM-PURE3030S
- PURESYSTEM S-S mini (50 ul × 8)** code : PGM-PURE3004S

PURESYSTEM CHAPERONE

Easily removable chaperone for cell-free protein synthesis kits

This product has been designed for helping production of an active form of protein with the **PURESYSTEM** and other technologies. Using this chaperone series with **PURESYSTEM** is ideal, since other **PURESYSTEM** components as well as chaperons in this product can be easily removed for purification of a protein.

DnaK set includes purified *E.coli* DnaK, DnaJ and GrpE.
GroE set includes purified *E.coli* GroEL and GroES.
Because DnaK, DnaJ, GrpE and GroES contain a histidine tag at C-terminus, these chaperons can be removed by metal-affinity resin after synthesis.
GroEL can also be removed by ultrafiltration as the same method of removing ribosomes in **PURESYSTEM**.
This product is also applicable for other cell-free protein synthesis and refolding of denatured proteins.



When luciferase was synthesized in the presence of the DnaK set, the enzyme activity of synthesized luciferase was larger than others. In contrast, in the case of malate dehydrogenase (MDH), addition of the GroE set increased the enzyme activity of MDH.
Thus, suitable chaperones depend on each synthesizing protein of interest.

- PURESYSTEM CHAPERONE DnaK set** code: PGM-PCDS01
- PURESYSTEM CHAPERONE GroE set** code: PGM-PCGS01

PURESYSTEM Δ Series

PURESYSTEM kit with one or two components removed

Delta series are the products in which one or two components are removed from PURESYSTEM.

The components which are removed are also available as PURESYSTEM Suppli.

PURESYSTEM delta series are unique in the point that these are made by utilizing one of the PURESYSTEM characteristics.

This is possible because PURESYSTEM is a flexible system reconstituted with components which are easy to be changed.

Components in PURESYSTEM

His-Tagged Transcription /Translation Factors

T7 RNA Polymerase

Initiation Factors (IF1 , IF2 , IF3)

Elongation Factors (EF-Tu , EF-Ts , EF-G)

Release Factors (RF1 , RF2 , RF3)

Ribosome Recycling Factor

20 Aminoacyl tRNA synthetases

Methionyl tRNA transformylase

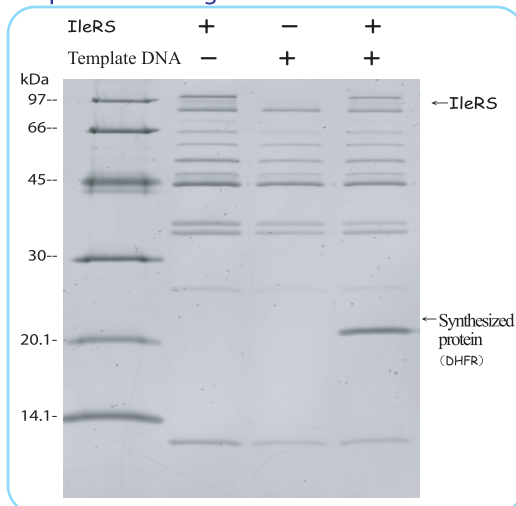
E. coli Ribosome

E. coli tRNA

Energy Regeneration System

NTPs , Amino Acids , Salts , Buffer

Experiment using PURESYSTEM Δ IleRS



Protein synthesis using PURESYSTEM Δ IleRS

When the aminoacyl enzyme(IleRS) was removed from the PURESYSTEM reaction mixture, synthesis of protein was not observed. Protein synthesis was recovered when IleRS was added.

Using PURESYSTEM delta series can show the activity or the roll of each factor relating to protein synthesis.

PURESYSTEM Δ 1 RF1 (50 ul \times 8)

PURESYSTEM Δ 1 RF2 (50 ul \times 8)

PURESYSTEM Δ 1 RF3 (50 ul \times 8)

PURESYSTEM Δ 1 RRF (50 ul \times 8)

PURESYSTEM Δ 1 EFG (50 ul \times 8)

PURESYSTEM Δ 1 T7RNA polymerase (50 ul \times 8)

PURESYSTEM Δ 1 Ribosome (50 ul \times 8)

PURESYSTEM Δ 1 PheRS (50 ul \times 8)

PURESYSTEM Δ 1 IleRS (50 ul \times 8)

code: PGM-PDS101

code: PGM-PDS102

code: PGM-PDS103

code: PGM-PDS104

code: PGM-PDS105

code: PGM-PDS107

code: PGM-PDS108

code: PGM-PDS109

code: PGM-PDS110

PURESYSTEM Δ 1 AlaRS (50 ul \times 8)

PURESYSTEM Δ 1 TrpRS (50 ul \times 8)

PURESYSTEM Δ 1 tRNA (50 ul \times 8)

PURESYSTEM Δ 1 Arg (50 ul \times 8)

PURESYSTEM Δ 1 Met (50 ul \times 8)

PURESYSTEM Δ 1 Trp (50 ul \times 8)

PURESYSTEM Δ 2 RF1, RF2 (50 ul \times 8)

PURESYSTEM Δ 2 tRNA, RF2 (50 ul \times 8)

PURESYSTEM Suppli (50 ul \times 8)

code: PGM-PDS111

code: PGM-PDS112

code: PGM-PDS113

code: PGM-PDS114

code: PGM-PDS115

code: PGM-PDS117

code: PGM-PDS201

code: PGM-PDS202

code: PGM-PSP1

Distributor



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FAX : +81-3-5632-9618

PURESYSTEM Price List

	Cat#	Description	Quantity	Price
PURESYSTEM classic II	PGM-PURE2048C	PURESYSTEM classic II 96	1kit	¥283700 \$2702 €2183
	PGM-PURE2030C	PURESYSTEM classic II standard	1kit	¥143300 \$1365 €1103
	PGM-PURE2004C	PURESYSTEM classic II mini	1kit	¥36300 \$346 €280
PURESYSTEM S-S	PGM-PURE3048S	PURESYSTEM S-S 96	1kit	¥356400 \$3395 €2742
	PGM-PURE3030S	PURESYSTEM S-S standard	1kit	¥187000 \$1781 €1439
	PGM-PURE3004S	PURESYSTEM S-S mini	1kit	¥49000 \$467 €377
PURESYSTEM CHAPERONE	PGM-PCDS01	PURESYSTEM CHAPERONE DnaK set	1kit	¥46700 \$445 €360
	PGM-PCGS01	PURESYSTEM CHAPERONE GroE set	1kit	¥29500 \$281 €227
PURESYSTEM Δ Series	PGM-PDS101	PURESYSTEM Δ 1 RF1	400ul	¥229500 \$2186 €1766
	PGM-PDS102	PURESYSTEM Δ 1 RF2	400ul	¥229500 \$2186 €1766
	PGM-PDS103	PURESYSTEM Δ 1 RF3	400ul	¥229500 \$2186 €1766
	PGM-PDS104	PURESYSTEM Δ 1 RRF	400ul	¥229500 \$2186 €1766
	PGM-PDS105	PURESYSTEM Δ 1 EFG	400ul	¥229500 \$2186 €1766
	PGM-PDS107	PURESYSTEM Δ 1 T7RNA polymerase	400ul	¥229500 \$2186 €1766
	PGM-PDS108	PURESYSTEM Δ 1 Ribosome	400ul	¥229500 \$2186 €1766
	PGM-PDS109	PURESYSTEM Δ 1 PheRS	400ul	¥229500 \$2186 €1766
	PGM-PDS110	PURESYSTEM Δ 1 IleRS	400ul	¥229500 \$2186 €1766
	PGM-PDS111	PURESYSTEM Δ 1 AlaRS	400ul	¥229500 \$2186 €1766
	PGM-PDS112	PURESYSTEM Δ 1 TrpRS	400ul	¥229500 \$2186 €1766
	PGM-PDS113	PURESYSTEM Δ 1 tRNA	400ul	¥229500 \$2186 €1766
	PGM-PDS114	PURESYSTEM Δ 1 Arg	400ul	¥229500 \$2186 €1766
	PGM-PDS115	PURESYSTEM Δ 1 Met	400ul	¥229500 \$2186 €1766
PGM-PDS117	PURESYSTEM Δ 1 Trp	400ul	¥229500 \$2186 €1766	



PURESYSTEM Δ Series	PGM-PDS201	PURESYSTEM Δ 2 RF1,RF2	400ul	¥306800 \$2922 €2360
	PGM-PDS202	PURESYSTEM Δ 2 tRNA.RF2	400ul	¥306800 \$2922 €2360
	PGM-PSP1-PDS101	PURESYSTEM Suppli RF1	400ul	¥31000 \$296 €239
	PGM-PSP1-PDS102	PURESYSTEM Suppli RF2	400ul	¥31000 \$296 €239
	PGM-PSP1-PDS103	PURESYSTEM Suppli RF3	400ul	¥31000 \$296 €239
	PGM-PSP1-PDS104	PURESYSTEM Suppli RRF	400ul	¥31000 \$296 €239
	PGM-PSP1-PDS105	PURESYSTEM Suppli EFG	400ul	¥31000 \$296 €239
	PGM-PSP1-PDS107	PURESYSTEM Suppli T7RNA Polymerase	400ul	¥31000 \$296 €239
	PGM-PSP1-PDS108	PURESYSTEM Suppli Ribosom	400ul	¥154600 \$1473 €1190
	PGM-PSP1-PDS109	PURESYSTEM Suppli PheRS	400ul	¥31000 \$296 €239
	PGM-PSP1-PDS110	PURESYSTEM Suppli IleRS	400ul	¥31000 \$296 €239
	PGM-PSP1-PDS111	PURESYSTEM Suppli AlaRS	400ul	¥31000 \$296 €239
	PGM-PSP1-PDS112	PURESYSTEM Suppli TrpRS	400ul	¥31000 \$296 €239
	PGM-PSP1-PDS113	PURESYSTEM Suppli tRNA	400ul	¥31000 \$296 €239
	PGM-PSP1-PDS114	PURESYSTEM Suppli Arg	400ul	¥31000 \$296 €239
	PGM-PSP1-PDS115	PURESYSTEM Suppli Met	400ul	¥31000 \$296 €239
	PGM-PSP1-PDS117	PURESYSTEM Suppli Trp	400ul	¥31000 \$296 €239
OTHER	PGM-PUREAP01	AP Template & Substrate	1kit	¥356400 \$3395 €2742
	PGM-PURE4004D	PURESYSTEM Duo	1kit	¥56000 \$534 €431
	PGM-PUREV001	PURESYSTEM Vector: pURE1	10ul	¥24600 \$235 €190
	PGM-PUREV002	PURESYSTEM Vector: pURE2	10ul	¥24600 \$235 €190
	PGM-PUREV003	PURESYSTEM Vector: pURE3	10ul	¥24600 \$235 €190
	PGM-PUREV004	PURESYSTEM Vector: pURE4	10ul	¥24600 \$235 €190
	PGM-PURER001	Universal Primer	500ul	¥7900 \$76 €61



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