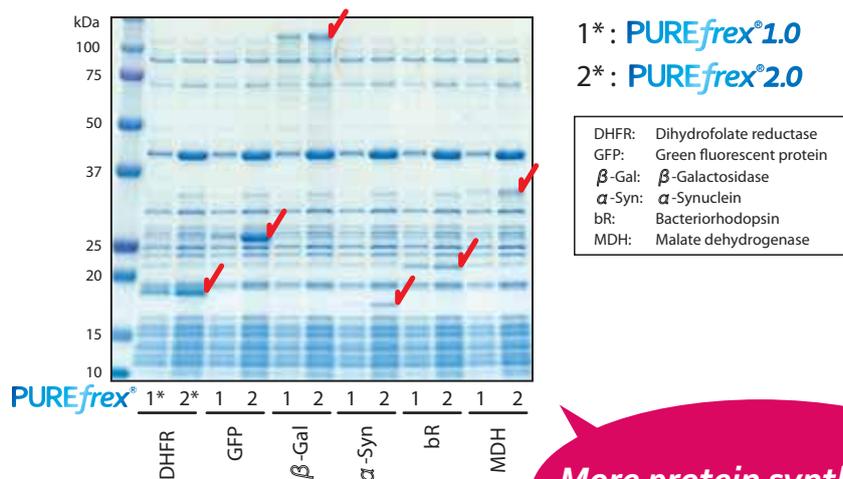


Reconstituted cell-free protein synthesis kit

PUREfreflex[®] 2.0

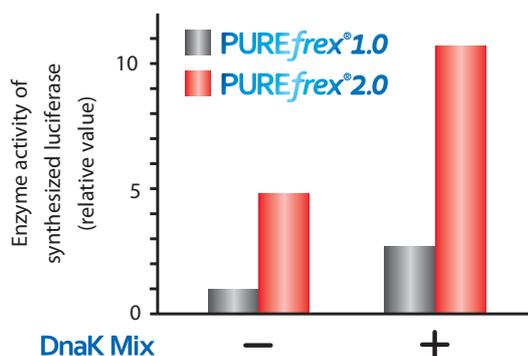
10 TIMES more protein synthesized
 Improved protein synthesis efficiency
 Reduced risk of contamination

Example: Comparison of PUREfreflex[®] 1.0 and 2.0



More protein synthesized with PUREfreflex[®] 2.0

Increased quantity of synthesized active protein with molecular chaperones!



What is PUREfrex®?

PUREfrex® is a **reconstituted cell-free protein synthesis kit** consisting of only purified factors, enabling adjustment of the composition of the reaction mixture. The target protein is synthesized by adding the template DNA (or mRNA) to the reaction mixture. Preparation method of components of the kit, such as ribosomes, tRNAs and proteins, have been improved to raise the purity of the reagent itself. As a result, contaminants such as RNase, β -galactosidase and lipopolysaccharides from E.coli are reduced. In PUREfrex®, all proteins are untagged for purification or detection, enabling the synthesized target protein to be purified by any kind of tag.

Add the DS supplement depending on your protein's properties!

Protein to synthesize

Intracellular proteins or peptides which DON T form disulfide bonds

Extracellular proteins or peptides which form disulfide bonds

PUREfrex® (GFK-PF201-0.25-EX) only

PUREfrex® (GFK-PF201-0.25-EX)
+ DS supplement (GFK-PF005-0.5-EX)

Reasoning

PUREfrex® (GFK-PF201-0.25-EX) includes reducing agent (DTT), so the protein is synthesized under a **reduced** environment

DS supplement (GFK-PF005-0.5-EX) includes oxidized glutathione so the protein is synthesized under an **oxidized** environment

PUREfrex® 2.0 Kit Components

| Component | Description | Content | Storage Temperature |
|--------------|---|------------------|---------------------|
| Solution I | Amino acids, NTPs, tRNAs and substrates for enzymes | 125 μ L | -20 |
| Solution II | Proteins in 30% glycerol buffer | 12.5 μ L | -20 or -80 *1 |
| Solution III | Ribosomes (20 μ M) | 12.5 μ L x 2 | -80 *1 |
| DHFR DNA *2 | PCR product (20 ng/ μ L) containing a gene encoding E.coli DHFR | 10 μ L | -20 |

*1 For storage at -80 °C, the remaining solution should be frozen rapidly in liquid nitrogen or dry ice/ethanol. Aliquot if necessary and avoid freeze-thaw cycles as much as possible.

*2 As a positive control for the protein synthesis reaction, 1.0 μ L of DHFR DNA should be added to 20 μ L of reaction. The nucleic acid sequence of DHFR DNA is on our website.

References

1. Shimizu et al. (2001) Nat. Biotechnol., vol. 19, p. 751
2. Shimizu et al. (2005) Methods, vol. 36, p. 299
3. Fujiwara et al. (2013) Nucleic Acids Res., 41, 7176-7183.
4. Endoh et al. (2013) Methods 64, 73-78.

Ordering Information

| Product Name | Cat. No. | Quantity | Description |
|---------------|---------------------|----------------------------------|--|
| PUREfrex® 2.0 | GFK-PF201-0.25-EX | 1 Kit (250 μ L Reaction) | Regular kit for the protein synthesis |
| PUREfrex® 2.0 | GFK-PF201-0.25-5-EX | 1 Kit (5 x 250 μ L Reaction) | |
| DS supplement | GFK-PF005-0.5-EX | 1 Kit (500 μ L Reaction) | Supplement for disulfide bonds formation |
| GroE Mix | GFK-PF004-0.5-EX | 1 Kit (500 μ L Reaction) | Supplement for aggregate-prone proteins |
| DnaK Mix | GFK-PF003-0.5-EX | 1 Kit (500 μ L Reaction) | |

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