S30 T7 High-Yield Protein Expression System

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1. Product Format and Applications

S30 T7 High-Yield Protein Expression System

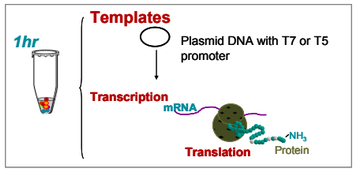
Applications:
- High protein yields (up to 500 µg/mL) in 1hr
  - Circular DNA templates with T7 or T5 promoter
  - Comparable to other leading brands
- Protein expression/functional screening
  - Pre-screening of constructs before *E. coli* cell-based production
  - Detection
    - Coomassie® Blue Stained SDS PAGE
    - FluoroTect™Green$_{Lys}$ *in vitro* Translation Labeling System
    - Transcend™Colorimetric Non-Radioactive Translation Detection System
    - HaloTag® labeling

Format:
- 24 x 50µL rxns
- 8 x 50µL rxns

2. Kit Components and Reaction Set-up

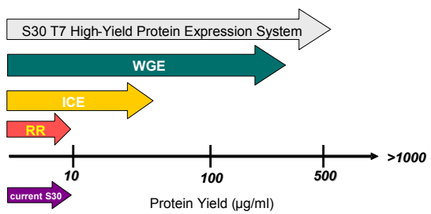
	Component	Function
1	S30 lysate for T7 circular	• Transcriptional • Translational machinery
2	S30-Premix +	• mRNA and protein building blocks • Energy source
3	Nuclease free H2O	
4	Positive control DNA	Positive control

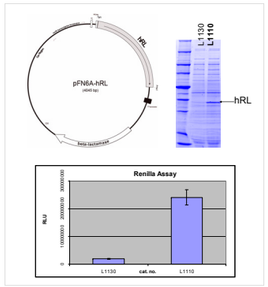
- User only need to supply circular DNA template
- Protein synthesis in 1hr at 37ºC



3. Higher Protein Yield Than Our Existing Kits

High Protein Yield in 1 hour of cell-free reaction





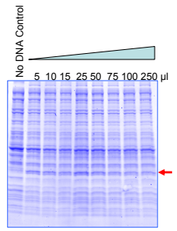
4. Compatible with A Wide Range of Vectors

Compatible with T7 as well as strong promoters such as T5 vectors for E. coli protein expression.

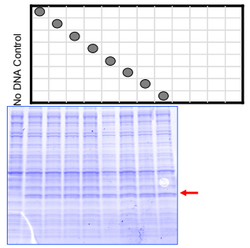
Vectors Tested	Elements	Proteins Tested	Promega
pFN6A/K	T7/g10s	ffLuc, HT2, hRL, mgGFP, cPKA, β-gal,procaspase-3	Y
pFN18K	T7/g10s	cPKA, ffLuc, hRL, Id	Y
pIVEX	T7/g10f	EF-Tu	Y
pIX	T7/g10f	GFP	Y
pExp5	T7/g10f	CALM3	Y
pET32a	T7/lacO	Thioredoxin	Y
pET43a	T7/lacO	NusA	Y
pET3a	T7/g10f	hRL, ffLuc	Y
pET15b	T7/lacO	hRL, ffLuc	Y
pQE30	T5	hRL	Y

5. Scalability And Applicability to High-throughput formats

Consistent yield from 5 µl to 250 µl reactions



Consistent result with 5 µl reactions in 96 well PCR plate



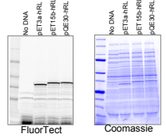
6. Compatibility with PureYield Mini DNA Purification System

DNA Prep by PureYield Mini from 1ml of cell culture

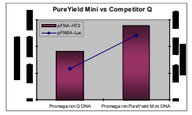
DNA yield enough for 4-10x50µl S30 T7 High-Yield Protein Expression reactions

Protein expression in 1hr
With 0.5-1µg DNA/50µl reaction volume

High level protein expression with DNA prepared by PureYield Mini

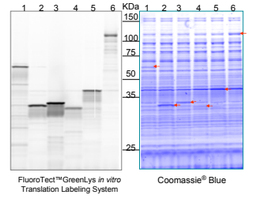


Comparable functional protein production using PureYield Mini as compared to Competitor DNA preps



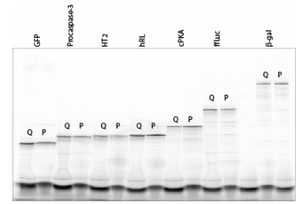
7. FluorTect™ Labeling and Detection

Full length protein production as detected by FluoroTect™ and Coomassie staining following SDS PAGE

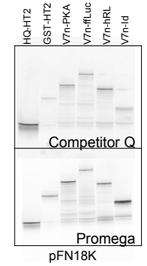


pFN6A:
1. ffLuc
2. hRL
3. HT2
4. Procaspase-3
5. cPKA
6. β-gal

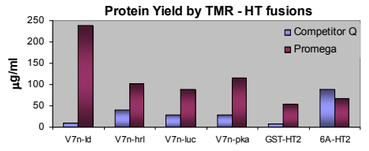
Comparable labeling efficiency of FluoroTect™ in our system as compared to in Competitor Q



8. HaloTag® 7 Labeling and Detection



Full length HaloTag® 7 fusion proteins can be expressed in S30 T7 High-Yield Protein Expression System and can be detected and quantified by TAMRA labeling.



9. Summary

S30 T7 High-Yield Protein Expression System provides the following benefits:

1. **Compatible with a wide range of *E. coli* expression plasmids with T7 or T5 promoters**
2. **Fast and convenient protein synthesis**
3. **High protein yield - up to 500µg/ml in 1 hour of reaction**
   - More protein for downstream analysis
4. **Compatible with our PureYield Mini DNA purification system**
5. **Amenable to HTS applications – can be scaled down to 5µl of reaction volume**
6. **Compatible with FluoroTect™, Transcend™ and HaloTag® labeling technologies**