

# Easy Self-Induction Medium



Technical Manual No. TM0236

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## I. DESCRIPTION

GenScript Easy Self-Induction Medium is for high-yield expression of recombinant proteins in T7-regulated *E. coli* expression system without IPTG induction. Using this medium, you do not need to monitor cell optical density (OD) and optimize IPTG induction conditions. Furthermore, your protein yield will be increased at least 3 folds compared to that obtained by traditional LB+IPTG method. The Easy Self-Induction Medium is a complete medium without adding any other supplements except antibiotics; it is supplied as a pre-sterilized ready-to-use liquid.

## II. APPLICATION

For recombinant protein expression in bacterial expression system.

## III. APPLICATION EXAMPLE

The Easy Self-Induction Medium was applied to induce a recombinant protein with M.W of 94 kD, and protein induction in LB + IPTG was used as standard control (Fig.1). From the result we know that the protein yield derived from Easy Self-Induction Medium is much higher than that obtained from LB + IPTG.

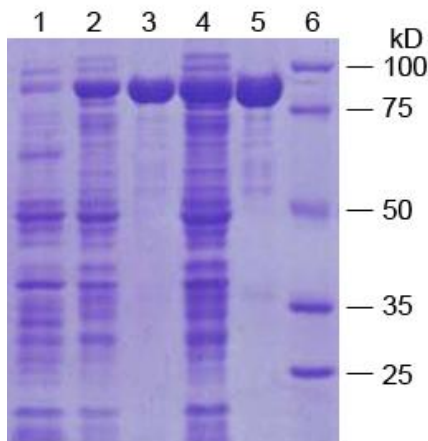


Fig. 1. Protein expression in Easy Self-Induction Medium compared to that from LB + IPTG.

Lane 1: NC, un-induced protein  
Lane 2: protein induction with LB + IPTG  
Lane 3: purified protein from LB + IPTG  
Lane 4: protein induction with Easy Self-Induction Medium  
Lane 5: purified protein from Easy Self-Induction Medium  
Lane 6: Smart Protein Marker (GenScript, M00104)

## IV. STORAGE

Store at room temperature until opened; store at 4°C once opened.

## V. GENERAL PROTOCOL USING EASY SELF-INDUCTION MEDIUM

1. Add appropriate volume of Easy Self-Induction Medium to sterile tubes or flasks.



2. Add the appropriate amount of antibiotics (same concentration as for LB medium) to the medium.
3. For expression culture below 100 ml, inoculate the medium directly with a single *E. coli* bacterial colony or glycerol stock. For expression volume above 100 ml, inoculate the medium with bacteria culture (grown overnight), the optimal volume of overnight grown culture is 5% (v/v) of the final culture volume.
4. Incubate at 37°C for 16-20 hours with the shaker set at 300 rpm. If the culture temperature is lower than 37°C, the longer induction time will be needed.

### VI. NOTE

1. **Bacterial strains and expression vectors.** *E. coli* expression strains should contain functional *lacY* and *lacZ* operons such as BL21 (DE3). Any IPTG-inducible bacterial expression vectors with *lac*-based promoter can be used with Easy Self-Induction Medium.
2. **Induction time.** Cells can be grown at temperatures between 16°C to 37°C, the induction time of 16 to 20 hours is appropriate for culture growing from 30 to 37°C. However, 24 to 36 hours are needed for cells growing at 16°C.
3. **Cell mass and protein yield.** Cell mass and protein yield from this medium is usually more than 3 folds than that from traditional LB media. To ensure efficient and complete lysis of bacteria, you should optimize lysis conditions accordingly.

### VII. ORDER INFORMATION

Easy Self-Induction Medium Cat. No.: M00104

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**For Research Use Only.**

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