



대량 단백질 생산에 최적

Transfection 시약과 배지가 모두 포함된 All-in-One Kit

# CHOgro® Expression System (Code MIR 6260)

- 셋업이 간편: 대량 단백질 생산에 최적인 프로토콜 제공
- Cell clumping 없이 균일한 단백질 발현 및 높은 viability 실현
- Animal origin free, hydrolysate-free
- cGMP (국제제약품 품질 기준) 조건에서 생산

구성품	용량
TransIT-PRO® Transfection Reagent	1 mL
CHOgro® Expression Medium	10x 2
CHOgro® Complex Formation Solution	100 mL
Poloxamer 188	100 mL
L-Glutamine	100 mL

Media에 따른 cell density, viability 비교

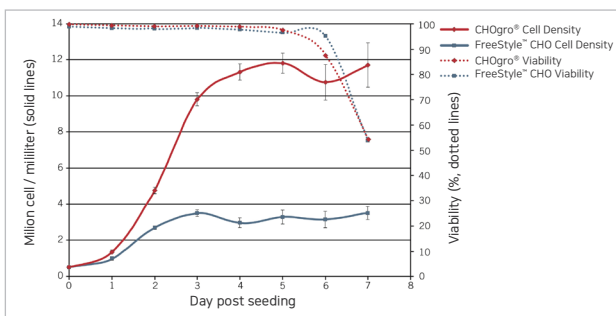


Figure 1. Suspension CHO cells grow to high density in the CHOgro® Expression Medium. Triplicate flasks of FreeStyle™ CHO-S cells were seeded in CHOgro® Expression Medium (red line) or FreeStyle™ CHO Expression Medium (blue line) at a cell density of  $0.5 \times 10^6$  cells/mL. Cell counts (solid line) and viability (dotted line) were measured daily using a Guava easyCyte™ 5HT flow cytometer.

Expression system에 따른 단백질 발현 비교

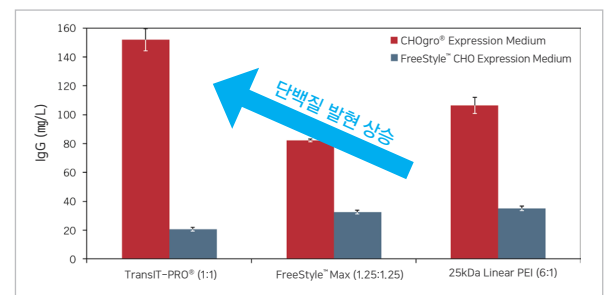


Figure 2. CHOgro® Expression Medium yields multi-fold increases in antibody titer. Human IgG1 was produced by transient transfection using TransIT-PRO® (1:1), FreeStyle™ MAX (1.25:1.25) or 25kDa linear PEI (6:1) transfection reagents according to the manufacturers' or published protocol (reagent:DNA ratio). FreeStyle™ CHO-S cells were transfected using 1 µg plasmid DNA per milliliter of culture and cell densities of  $2 \times 10^6$  cells/mL or  $1 \times 10^6$  cells/mL for the CHOgro® Expression Medium (red bars) or FreeStyle™ Expression Medium (blue bars). Antibody levels were also analyzed from day 6 clarified supernatants using a human IgG ELISA.

간편한 culture system 변경과 발현을 증가

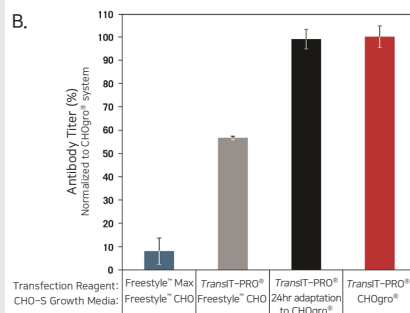
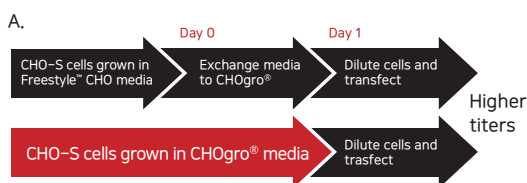


Figure 3. Media exchange leads to higher protein production. FreeStyle™ CHO-S cells were cultured in FreeStyle™ CHO Expression Medium or CHOgro® Expression Medium and 24 hours prior to transfection a subset of the cells grown in FreeStyle™ CHO Expression Medium were spun down and exchanged with 100% fresh CHOgro® Expression Medium. The cells were allowed to grow and adapt for 24 hours prior to transfection with FreeStyle™ CHO Expression Medium to CHOgro® Expression Medium (black arrow) or the normal CHOgro® Expression System (red arrow) (B) Day 6 supernatants were clarified and analyzed using a human IgG ELISA. Data is normalized to the complete CHOgro® Expression System (red bar).

# TransIT-PRO® Transfection Kit (Code MIR 5700)

- Suspension CHO와 293 cell 용 transfection reagent
- 다양한 CHO 배지 조성에서 호환성 우수
- 다양한 culture volume (4-400 ml)에 적용 가능

## TransIT-PRO® Transfection Kit 구성

구성품	용량
TransIT-PRO® Transfection Reagent	1 ml
PRO Boost Reagent	1.5 ml

## Transfection 후 시간경과에 따른 발현율 비교

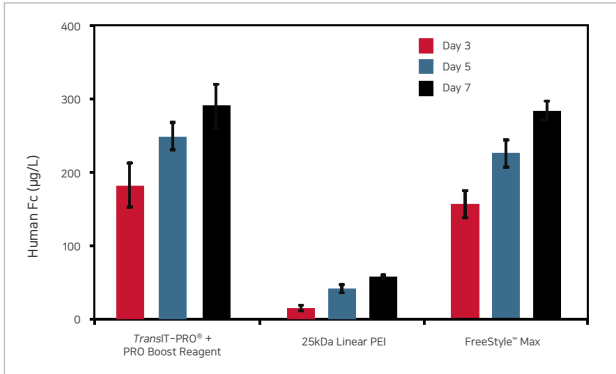


Figure 4. Achieve high antibody titers using the TransIT-PRO® Transfection Kit. Human IgG1 was produced by transient transfection using TransIT-PRO and PRO Boost Reagent, 25kDa linear PEI or FreeStyle™ Max transfection reagents according to the manufacturers or published protocol. Transfections were performed using 1µg plasmid DNA per milliliter of culture and  $0.5 \times 10^6$  cells/ml at the time of transfection. FreeStyle™ CHO-S cells were cultured in 20 ml of FreeStyle™ CHO Expression medium in 125 ml shake flasks. Day 3, 5 and 7 supernatants were clarified and analyzed using a human IgG-Fc sandwich ELISA.

## 고객이 직접 경험한 TransIT-PRO® 높은 발현

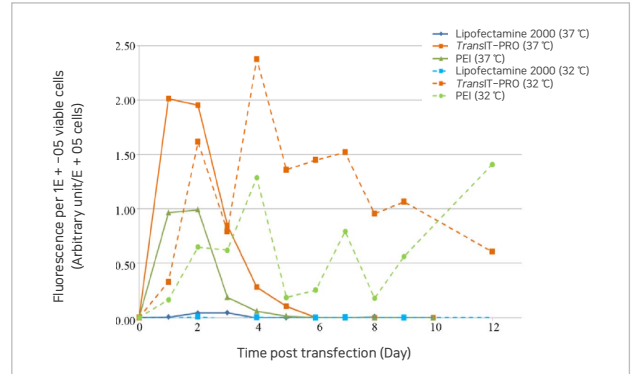


Figure 5. Evaluation of EGFP-C3 protein expression level upon transient transfection with different reagents. EGFP-C3 protein expression per viable cell at 37 °C & 32 °C.

[인용 논문. Evaluation of transfection methods for transient gene expression in Chinese hamster ovary cells. Sou S, et al. ABB, 2013 Dec. Vol. 4.]



내 Cell, Mouse가 아파~  
E.coli 증식시 오염된 Endotoxin 때문에...



## Endotoxin 제거를 통한 단백질 발현 향상

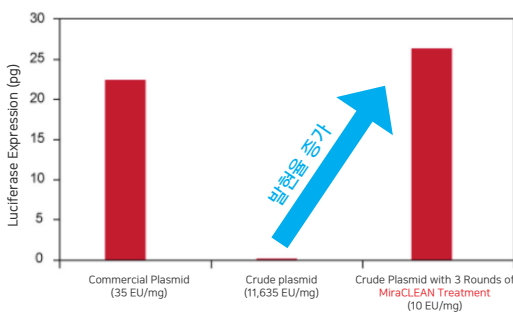
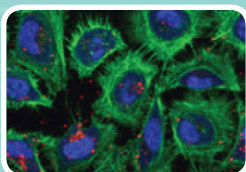


Figure 6. Plasmid DNA exhibits high transfection efficiency after treatment with the MiraCLEAN® Kit. COS-7 cells were transfected with 2 µg of plasmid DNA and 2 µl of the TransIT®-LT1 Reagent in 6-well plates. Cells were harvested at 24 hours post transfection and assayed for luciferase expression. EU=Endotoxin Units

## MiraCLEAN® Endotoxin Removal Kit (Code MIR 5910)

- Plasmid의 E.coli endotoxin 제거로 단백질 발현 향상
- 두 종의 reagent 첨가로 간편하게 제거
- in-vitro, in-vivo 모두 적용 가능 (in-vivo 시 면역반응 감소)



## Transfection이 잘 되었나?

- Label IT® Plasmid Delivery Control, Cy® 3 (Code MIR 7904)
- Label IT® Plasmid Delivery Control, Fluorescein (Code MIR 7906)