PEI Users: Tailor Your Workflow with CHOgro® Expression System to Save Time & Money

CHOgro® Expression System Outperforms Linear PEI

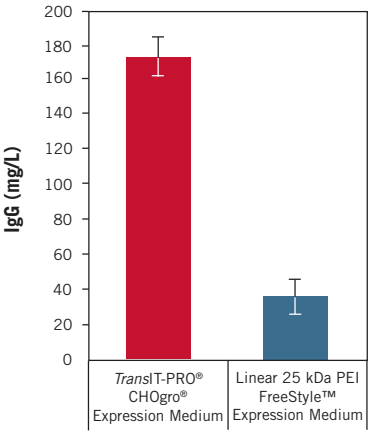

FIGURE 1. Human IgG was produced by transient transfection using *Trans*IT-PRO® (1:1) or 25 kDa linear PEI (6:1) in either the CHOgro® or FreeStyle™ Expression System. CHO-S cells were grown in designated medium and split to 30ml per 125ml shake flask (Thomson). Clarified supernatants were analyzed using a human IgG ELISA (ZeptoMetrix). Error bars represent the standard error of the mean of triplicate technical replicates.

Scenario Demonstrating Cost Savings Using PEI

If a researcher needed to produce 150 mg of an IgG protein, 4X more culture volume would be required if 25kDa linear PEI was used with the FreeStyle™ CHO Expression Medium compared to the CHOgro® Expression System. The cost comparison of 4 times the materials and 1.5x the labor costs leads to a 40% reduction in costs if the CHOgro® Expression System is utilized.

Materials needed for 1 L Transfection, 150 mg desired yield

Medium	CHOgro®	PEI w/ FreeStyle™ (Materials 4X, labor 1.5X)
1 L media	105.00	432.00
100 ml Complex Formation Media	54.00	216.00
1 mg DNA	100.00	400.00
Transfection Reagent		
*Trans*IT-PRO®	373.00	--
25 kDa linear PEI	--	5.76
Disposable 1 L Culture Flask	102.00	408.00
Time in hours ($150 per hour)	750.00	1125.00
TOTAL	$1,484.00	$2,586.76*

NOTE: PEI experiment would take up more incubator space due to more flasks.

*In this scenario, there is approximately a 40% higher cost associated with PEI transfection reagent.

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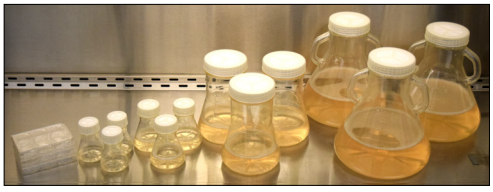

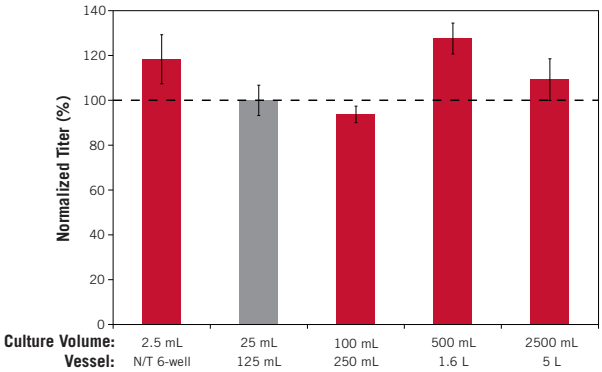

FIGURE 2. Human IgG1 was produced by transient transfection with the *Trans*IT-PRO® Transfection Reagent and 1 µg plasmid DNA per milliliter of culture at a 1:1 reagent:DNA ratio. Cells were transfected at a density of 2 x 10^6 cells/ml in CHOgro® Expression Medium on an orbital shaker at the following volumes/culture vessels: 2.5 ml/non-tissue culture treated 6-well dish, 25 ml/125 ml Thomson flask, 100 ml/250 ml Thomson flask, 1000 ml/1.6 L Thomson flask, 2.5 L/5 L Thomson flask. At 24 hours post-transfection all cultures were moved to 32° C for the remainder of the experiment. Antibody levels were also analyzed from day seven clarified supernatants using a human IgG ELISA (Zeptometrix). All values are normalized to the 25ml volume sample and error bars represent the standard error of the mean of triplicate technical replicates.

*Trans*IT-PRO® Transfection Reagent

High Efficiency Transfection

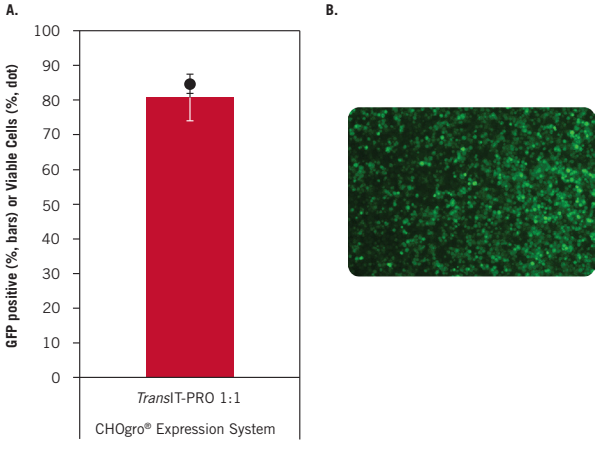

FIGURE 3. GFP was expressed in CHO-S cells by transient transfection using the *Trans*IT-PRO® Transfection Reagent (1:1). (A) GFP efficiency and cell viability (propidium iodide) were measured 48 hours post-transfection using a Guava easyCyte™ 5HT flow cytometer (EMD Millipore). (B) Images were captured using a Zeiss Axiovert inverted fluorescence microscope.