

ABM Inc. Recombinant iPSC Proteins

One of the major goals of iPSCs research is for disease modeling and novel therapeutic development. Insertion of any genetic materials into the newly generated iPSCs other than iPSC transcription factors is a grave concern for accurate disease modeling and therapeutic development. Protein-based human iPSCs technology is the ultimate choice for iPSCs that does not require the destruction of ex utero embryos and completely eliminates possible genome mutations and insertions associated with DNA transfection or viral transduction.

Protein Lysates

Reports from two independent laboratories clearly demonstrated the feasibility of iPSC generation with crude recombinant protein lysates (Kim, *et al.*, 2009; Zhou, *et al.*, 2009). The following human iPSC reprogramming factors are produced by transfection in 293 cells with poly-Arginine protein penetrating domain (PPD) at the C-terminal end of each protein that allows protein transduction of any cell type efficiently.

Purified Proteins

Though crude reprogramming protein lysates was shown to be successful in iPSC generation, the efficiency is extremely low. Purified iPSC from a mammalian expression system would be the ideal choice. However, this has proven to be extremely challenging. After vigorous trials and errors, scientists at ABM is able to purify all human iPSC proteins from human cells with proven functionality. All iPSC proteins are expressed from 293 cells fused with His tag at N-terminal for purification and poly-Arginine (PPD) at C-terminal for cell transduction.

Ordering Information

Product Name	Catalog No.	Description	Packaging Size
iPSC Protein Lysate Set (with GPF control)	000028/32P	human/mouse Yamanaka (OSKMG)	5 X 500µl (1mg/ml)
	000026/30P	human/mouse Thomson (OSNLG)	
iPSC Purified Protein Set (with GPF control)	000027/31P	human/mouse Yamanaka (OSKMG)	5 X 50µg (250µg/ml)
	000025/29P	human/mouse Thomson (OSNLG)	
iPSC KLF4 Protein	000002/14P	human/mouse KLF4 – lysate	500µl (1mg/ml)
	000001/13P	human/mouse KLF4 – purified	50µg (250µg/ml)
iPSC MYC Protein	000006/18P	human/mouse MYC – lysate	500µl (1mg/ml)
	000005/17P	human/mouse MYC – purified	50µg (250µg/ml)
iPSC OCT4 Protein	0000010/22P	human/mouse OCT4 – lysate	500µl (1mg/ml)
	000009/21P	human/mouse OCT4 – purified	50µg (250µg/ml)
iPSC SOX2 Protein	000012/24P	human/mouse SOX2 – lysate	500µl (1mg/ml)
	000011/23P	human/mouse SOX2 – purified	50µg (250µg/ml)
iPSC LIN28 Protein	000004/16P	human/mouse LIN28 – lysate	500µl (1mg/ml)
	000003/15P	human/mouse LIN28 – purified	50µg (250µg/ml)
iPSC NANOG Protein	000008/20P	human/mouse NANOG – lysate	500µl (1mg/ml)
	000007/19P	human/mouse NANOG – purified	50µg (250µg/ml)
iPSC GFP Protein	000034P	GFP for human & mouse – lysate	500µl (1mg/ml)
	000033P	GFP for human & mouse – purified	50µg (250µg/ml)

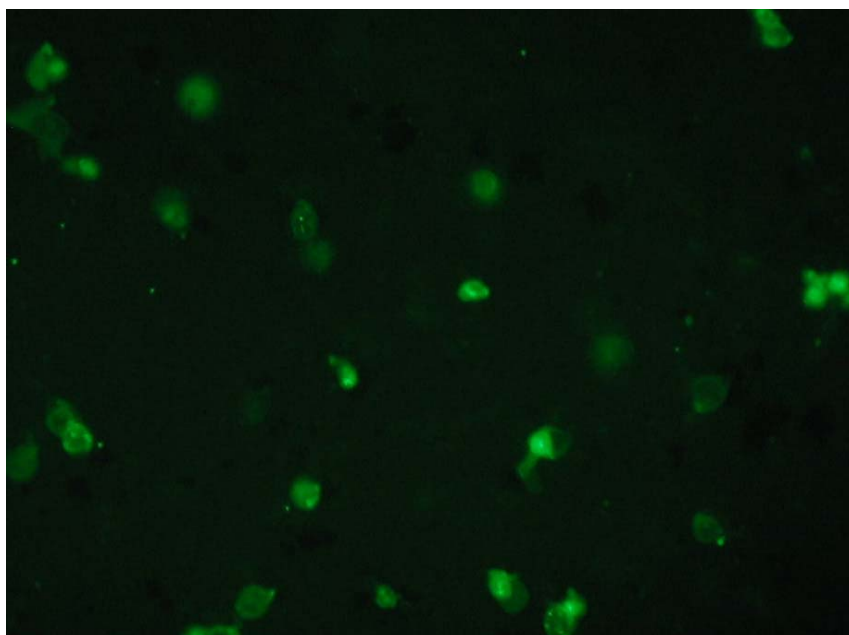
ABM Inc. Proteinfectin™

One of key challenges in protein-based iPSC generation is the low efficiency of protein transduction of target cells. Though a number of protein translocation domains including TAT, poly Arg, and others have been shown to be useful in protein transduction, but the efficiency is still relatively low. To this end, ABM has developed optimized protein transfection reagents that can enhance protein transduction efficiency by up to 70%.

ABM's Proteinfectin™ Transfection Reagent comprises of lipid formulations which will mediate the transport of intact functional proteins across the cell membrane via non-covalent complexes. Proteinfectin™ Transfection Reagent can co-deliver multiple proteins ranging from small peptides to large proteins greater than 550kDa. High delivery efficiency have been observed when delivering diverse proteins (ie. active enzymes and antibodies) with the help of Proteinfectin™ into a variety of cell types including primary cells. This transfection reagent is perfect for any of your protein transfection needs.

Applications

Delivery of diverse functionally active proteins and peptides into cultured eukaryotic cells, study protein interactions in living cells, screening peptide libraries, and protein half-life studies.



Transfection of 293 cells with purified GFP protein
Cells were transfected with Proteinfectin™ and imaged after 3 hours of incubation.

Ordering Information

Product Name	Catalog No.	Description	Packaging Size
Proteinfectin™	G288	Protein transfection reagent (lipid formulation)	250µl