Stemgent® Stemfect™

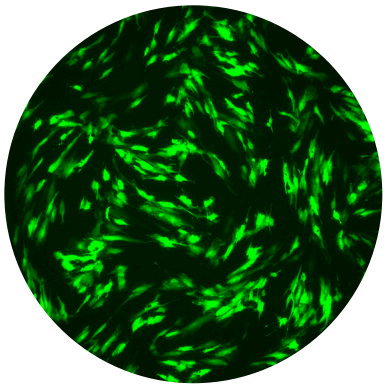
RNA Transfection Kit

stemgent
A REPROCELL BRAND

High efficiency transfection kit for transfection of multiple RNA species into a wide range of cell types with low toxicity

Overview

Stemgent's Stemfect RNA Transfection Kit (00-0069) is a cost-effective, versatile, proprietary mixture of lipid components specifically designed for high efficiency *in vitro* RNA transfection of mRNA, siRNA, miRNA, and self-replicative RNA into a broad range of cell types with high viability.



Stemfect enables transfection of >10K nt RNA's.

Key Benefits

- **Enables RNA transfection of multiple cell types with one easy-to-use kit**
  – Transfection demonstrated on a wide range of cell types, including hESC, hiPSC[1], Jurkat T-cells, human fibroblasts, HUVECs, HASMC smooth muscle cells[2], HEK293 cells, RPE retinal cells[3], MDDC dendritic cells[4], MCF7 breast cancer cells[5], HeLa cells[5], porcine fibroblasts[6], and rat primary and human iPS-derived cardiomyocytes[7]
  – High viability of >95% after transfection
- **Delivers multiple RNA species with high efficiency of ≥90%**
  – Functionally validated for in vitro delivery of siRNA, microRNA, mRNA, and srRNA
- **Application validated for use in gene delivery, gene knockdown, cellular reprogramming, and RNA-induced differentiation**
- **Easy-to-use protocol**

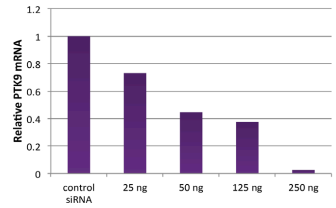


FIGURE 2. Delivery of mir-1 precursor to human fibroblasts, showing knock down of down-stream effector PTK9.

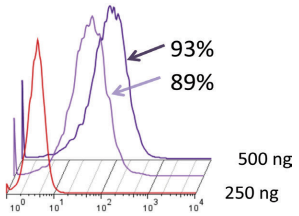


FIGURE 3. BJ human fibroblasts transfected with FAM labeled siRNA.

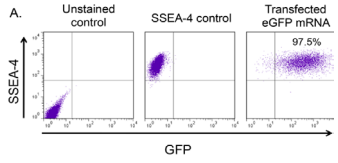
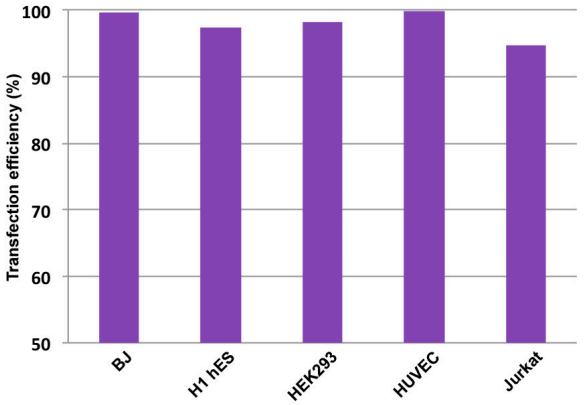


FIGURE 4. Transfection Efficiency for hES Cells. Human embryonic stem (hES) cells remain undifferentiated after transfection. H1 hES cells cultured in NutriStem™ XF/FF Culture Medium were transfected with eGFP mRNA using Stemgent's Stemfect RNA Transfection Kit. Greater than 95% of cells maintained pluripotency marker expression, SSEA-4, 24 hours post-transfection.



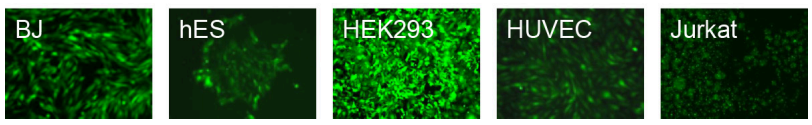


FIGURE 1. Stemfect RNA Transfection Kit provides high efficiency mRNA transfection across a range of cell types. AJ human fibroblasts, H1 hES cells, 293 cells, HUVEC and Jurkat cells were transfected with eGFP mRNA and assayed for transfection efficiency at 18 hours post-transfection.

stemgent
A REPROCELL BRAND

Product Ordering Information

Product Name	Quantity	Cat. No.
Stemgent® Stemfect™ RNA Transfection Kit and Related Products:		
Stemfect RNA Transfection Kit Kit contents: • RNA Transfection Reagent: 750 µL • RNA Transfection Buffer: 30 mL	1 kit	00-0069

Quality Control: RNA Transfection Reagent has been characterized by mass spectrometry and NMR. StemAb RNA Transfection Kit is functionally tested for transfection efficiency on human fibroblast cells using eGFP mRNA.

Notice To Purchaser: This product is intended for research purposes only. It may not be used for (i.) any human or veterinary use, including without limitation therapeutic and prophylactic use, including without limitation drug delivery and nucleic acid delivery, (ii.) any clinical use, including without limitation diagnostic and prognostic use, (iii.) screening of chemical and/or biological compounds for the identification of pharmaceutically active agents (including but not limited to screening of small molecules), target validation, preclinical testing services, drug development, (iv.) any use in delivery of mRNA, saRNA, siRNA, ssRNA, miRNA and/or combinations thereof for the manufacture of recombinant therapeutic proteins, therapeutic antibodies and vaccines, (v.) any use in delivery to and/or modification of cells that are intended for clinical, diagnostic or medicinal use, including without limitation, cell-based therapy, or (vi.) any commercial purposes, including without limitation the performance of contract research or provision of services to a third party and the manufacture of products for general sale. Any use of this product for any of the above mentioned purposes requires a license from the Massachusetts Institute of Technology.

References

1. Katayama S; Shimoda K; Takenaga Y. “Loss of ADAR1 in human iPS cells promotes caspase3-mediated apoptotic cell death.” *Genes to Cells* 20:675 (2015)
2. Arnold JD; Mountain DJH; Freeman BM; Kirkpatrick SS; Stevens SL; Goldman MH; Grandas OH. “Smooth muscle cell polymeric transfection agent is an efficient alternative to traditional methods of experimental gene therapy.” *J Surg Res* 177:178 (2012)
3. Hansson ML; Albert S; Somermeyer LG; Peco R; Mejia-Ramirez E; Montserrat N; Belmonte JCI. “Efficient delivery and functional expression of transfected modified mRNA in human embryonic stem cell-derived retinal pigment epithelial cells.” *J Biol Chem* 290:5661 (2015)
4. Yen B; Mulder LCF; Martinez S; Basler CF. “Molecular basis for ebolavirus VP35 suppression of human dendritic cell maturation.” *J Virol* 88:12500 (2014)
5. Endo K; Hayashi K; Saito H. “High-resolution identification and separation of living cell types by multiple microRNA-responsive synthetic mRNAs.” *Scientific Reports* 6:21991 (2016)
6. Nestle-Nguyen D. “Genome editing for the generation of immunodeficient pigs.” Ph.D. Thesis, Technische Universität München, May 2015.
7. Kontorovich AR; Eltoukhy AA; Turnbull IC; Cashman TJ; Rao SK; Anderson DG; Hajjar RJ; Costa KD. “Abstract 256: mRNA-based nanoparticles are highly effective agents for cardiac gene therapy.” *Circulation Res* 113:A256 (2013)