Stemgent® Stemfect™
RNA Transfection Kit

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.

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, hiPSC1, Jurkat T-cells, human fibroblasts, HUVECs, HASMC smooth muscle cells2, HEK293 cells, RPE retinal cells3, MDDC dendritic cells4, MCF7 breast cancer cells5, HeLa cells5, porcine fibroblasts6, and rat primary and human iPS-derived cardiomyocytes7
• 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 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.

FIGURE 2. Delivery of mir-1 precursor to human fibroblasts, showing knock down of downstream 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.
Stemgent® Stemfect™ RNA Transfection Kit and Related Products

<table>
<thead>
<tr>
<th>PRODUCT NAME</th>
<th>QUANTITY</th>
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<tbody>
<tr>
<td>Stemgent mRNA Reprogramming Kit</td>
<td>1 Kit</td>
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<tr>
<td>Stemgent microRNA Booster Kit</td>
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<tr>
<td>NutriStem™ XF/FF Culture Medium</td>
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<td>Pluriton™ Reprogramming Medium</td>
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<td>StainAlive™ TRA-1-60 (Dylight™ 488), mouse anti-human</td>
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<td>GFP-srRNA</td>
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**mRNAs for differentiation**
- Gata4 mRNA, Human: 20 μg, 05-0033
- Met2C mRNA, Human: 20 μg, 05-0034
- Myf5 mRNA, Human: 20 μg, 05-0031
- MyoD mRNA, Human: 20 μg, 05-0029
- Myog mRNA, Human: 20 μg, 05-0032
- Tbx5 mRNA, Human: 20 μg, 05-0035

**Stemgent® Stemolecules™ Small Molecules**

**References**

2. Arnold JD; Mountain DJ; 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)
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)
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)

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