LipoMag Kit - Results

OZ Biosciences is delighted to announce the launching of new Magnetofection™ kit, ***LipoMag Kit***. It associates our most efficient lipid-based transfection reagent, ***DreamFect™ Gold*** with ***CombiMag***, the most versatile Magnetofection™ reagent. DreamFect™ Gold formulation is based on OZ Biosciences Triggered Endosomal Escape Technology (TEE-Technology). It was specifically developed to achieve high transfection efficiency (percentage of cells transfected) combined with superior transgene expression level due to its improved cytoplasmic release process and complete biodegradability. Lipofection is now associated with Magnetofection™ to reach even higher transfection efficiency especially in primary cells while reducing toxicity.

Main ***LipoMag Kit*** features are:

1. Highest efficiency without toxicity
2. Achieves superior transgene expression level than any other reagents
3. Enhances DreamFect™ Gold efficiency and outperform competitors
4. Biodegradable
5. Multipurpose (various types of nucleic acids)
6. Universal (cell lines and primary cells)
7. Simple, Ready-to-use and Rapid
8. Serum compatible

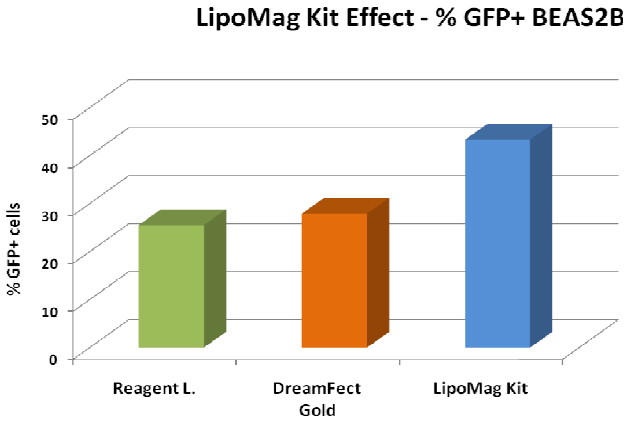
Nucleic acid types

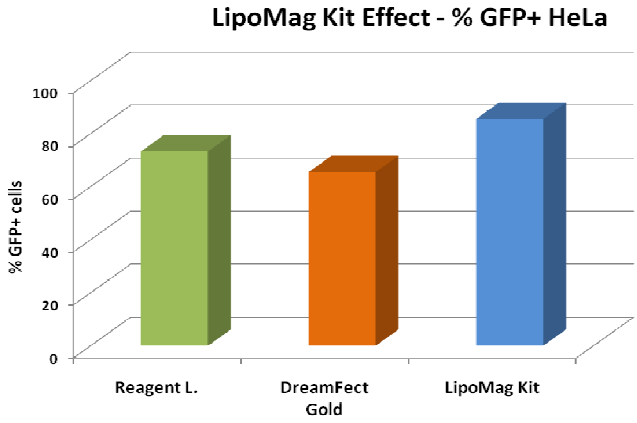
LipoMag Kit is suitable for all type of nucleic acids including: plasmid DNA, siRNA, oligonucleotides, linearized DNA, double stranded RNA, mRNA, shRNA.

Cell types

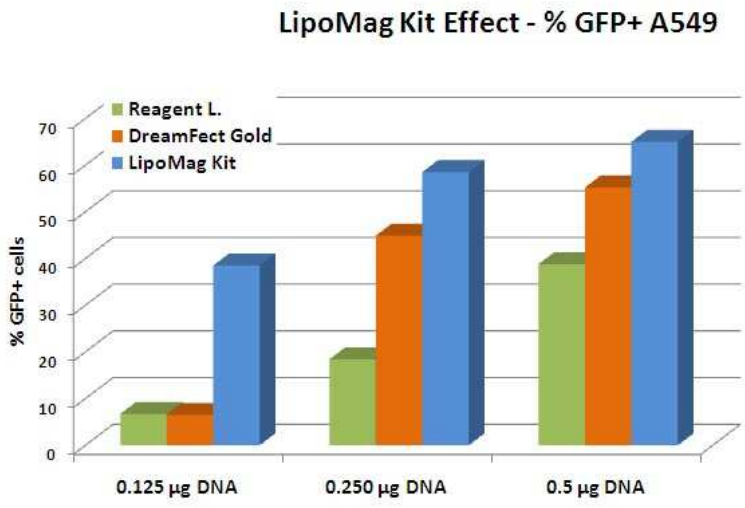
LipoMag Kit is suitable for numerous cell types. DreamFect™ Gold and CombiMag have been successfully tested on various cells. OZ Biosciences is maintaining an updated list of cells successfully tested that is available on the website: www.ozbiosciences.com. You can also submit your data to tech@ozbiosciences.com so we can update this list and give the scientific community all the support they need.

LipoMag Kit enhances transfection in cell lines in terms of GFP+ Cells



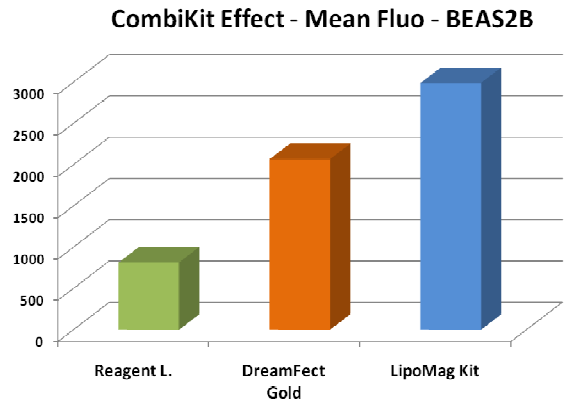


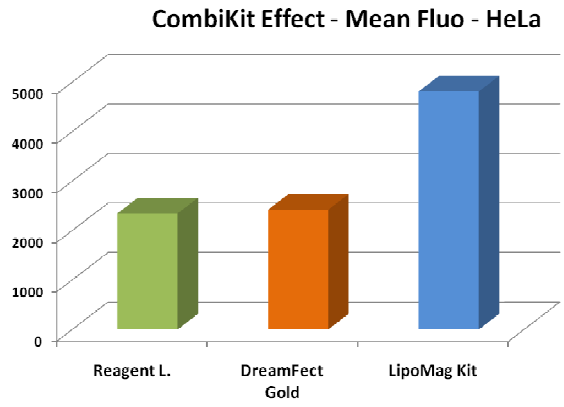
BEAS2B & HeLa cells (1x10^5 cells/ well) were transfected with Reagent L., DreamFect™ Gold or with ***LipoMag Kit*** in a 24-well plate using 0.5µg of GFP plasmid DNA [pVectOZ-GFP (cat # PL00120)]. For this kit: Dreamfect Gold ratio and CombiMag ratio were fixed respectively at 3µL and 1µL per µg of DNA per well. Reagent L and DreamFect™ Gold were used according to manufacturer instruction. GFP positive cells were monitored by Flow Cytometry 24H after transfection.



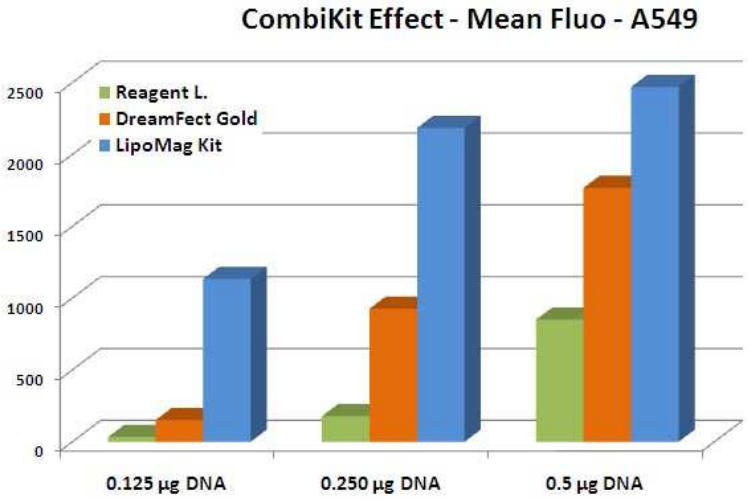
A549 cells (1x10^5 cells/well) were transfected with various amount of DNA in a 24-well plate. For ***LipoMag Kit***: DreamFect™ Gold ratio and CombiMag ratio were fixed respectively at 3µL and 1µL per µg of DNA per well. Reagent L and DreamFect™ Gold were used according to manufacturer instruction. GFP positive cells were monitored 24 hours post transfection by Flow Cytometry.

LipoMag Kit enhances transfection in cell lines in terms of GFP intensity





BEAS2B & HeLa cells (1x10^5 cells/ well) were transfected with Reagent L., DreamFect™ Gold or ***LipoMag Kit*** in a 24-well plate using 0.5µg of DNA. Reagents were used as previously explained. Mean of Fluorescence intensity was measured by cytofluorometry 24H after transfection.



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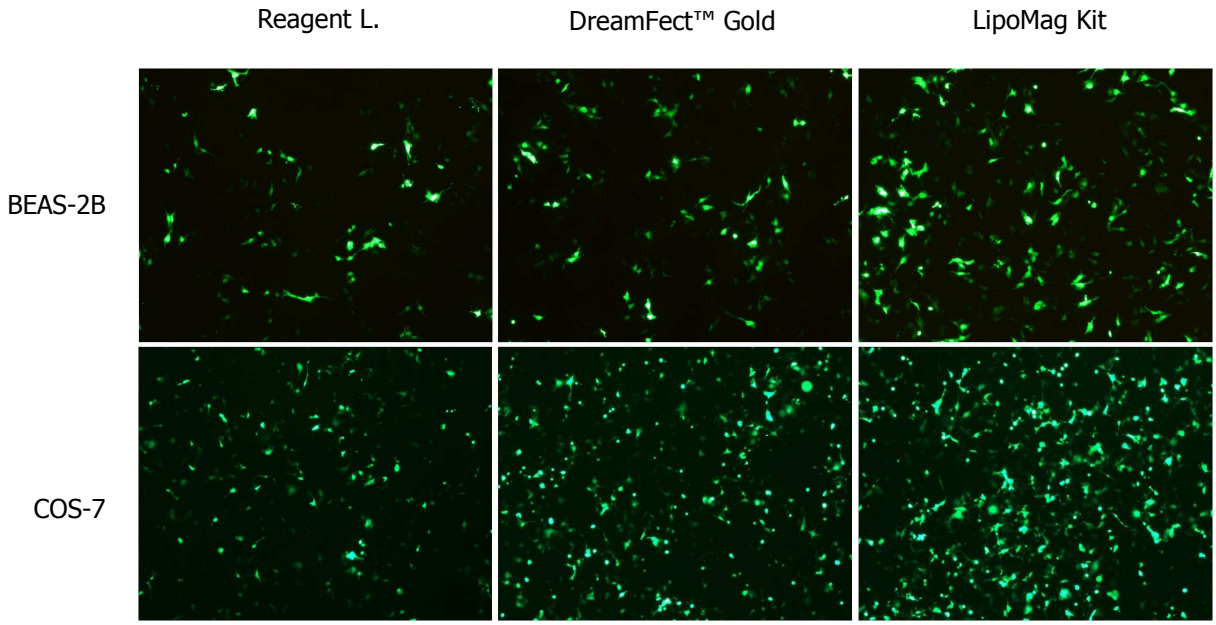
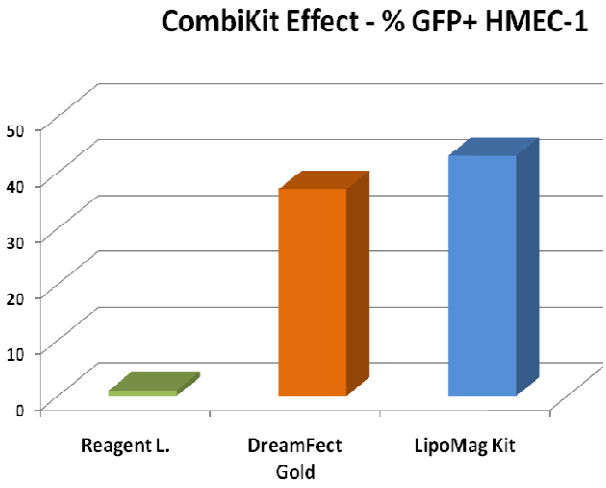
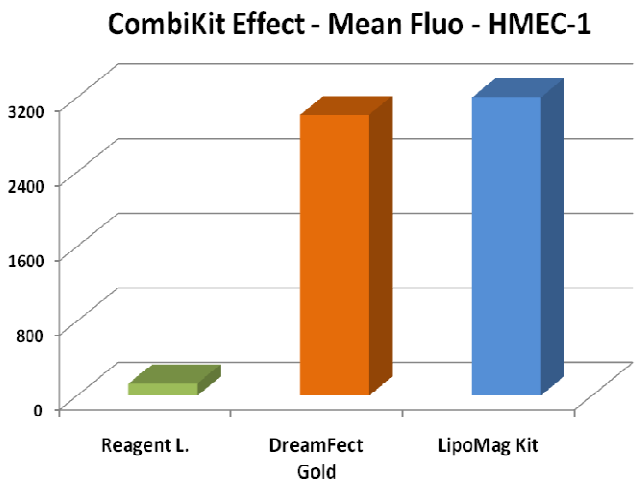


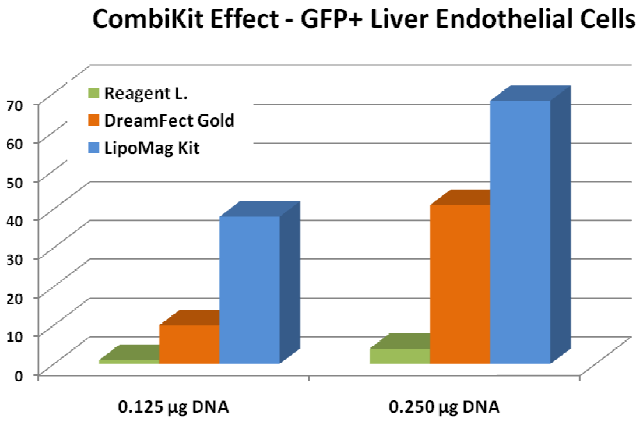
BEAS-2B and COS-7 cells were transfected with Reagent L., DreamFect™ Gold or with ***LipoMag Kit*** in a 24-well plate using 0.5µg of DNA. Reagents were used as previously explained. GFP expression was assessed under fluorescent microscope 24H after transfection.

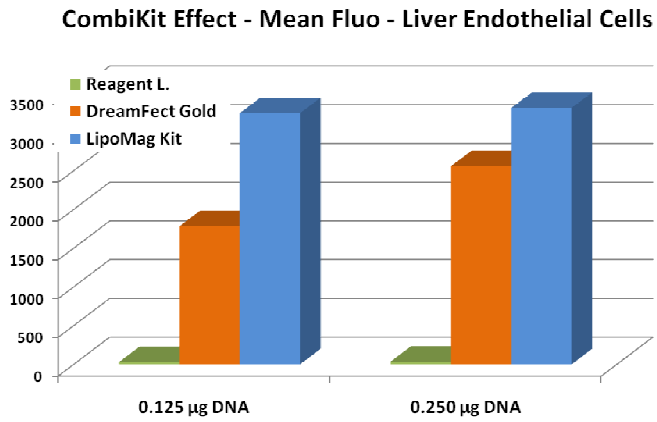
LipoMag Kit enhances transfection in Hard-to-Transfect cells

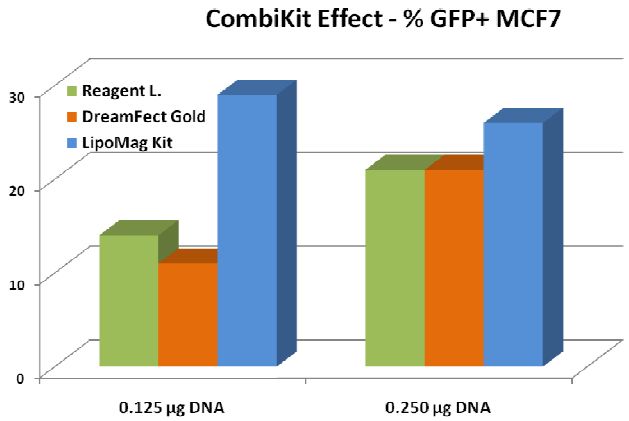


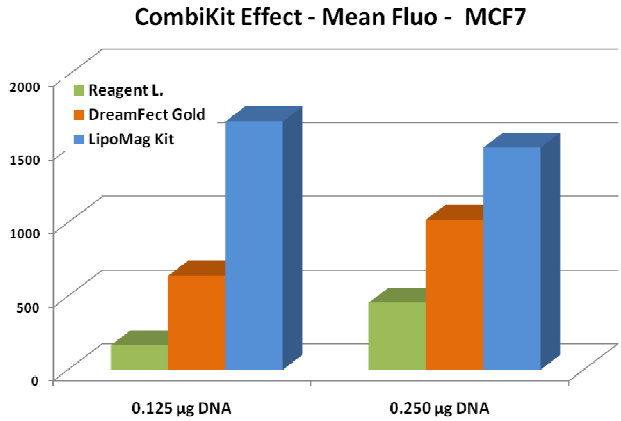


Human microvascular endothelial cell line-1 (HMEC-1) was transfected with Reagent L., DreamFect™ Gold or with ***LipoMag Kit*** in a 24-well plate using 0.5µg of DNA. Reagents were used as previously explained. 24 hours post transfection GFP positive cells were monitored by Flow Cytometry and mean of fluorescence intensity was measured by cytofluorometry.

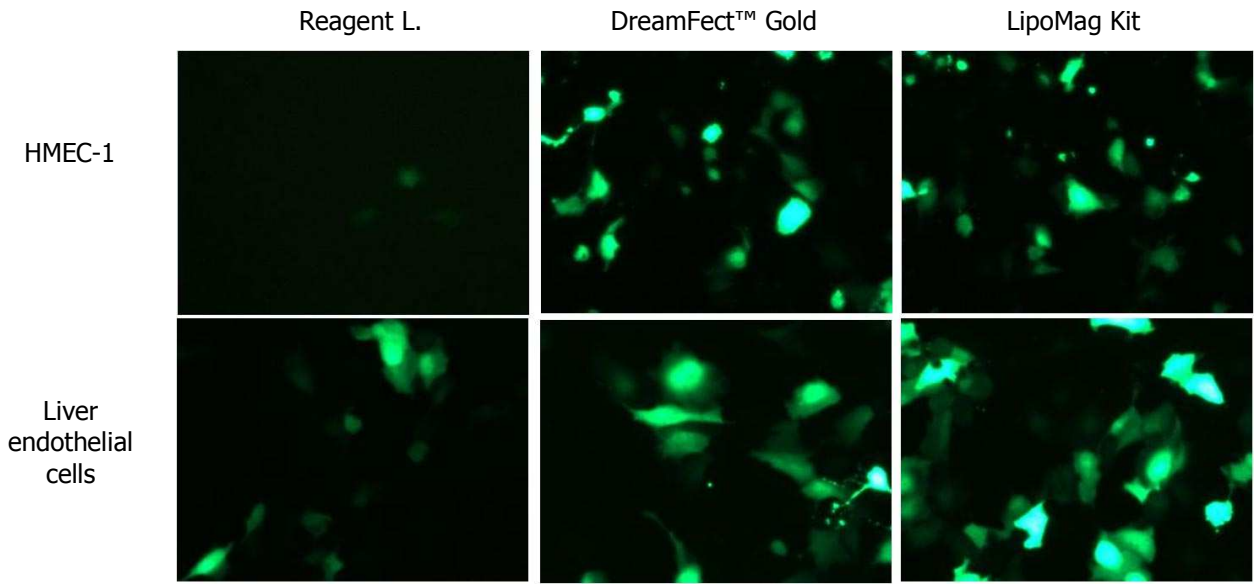






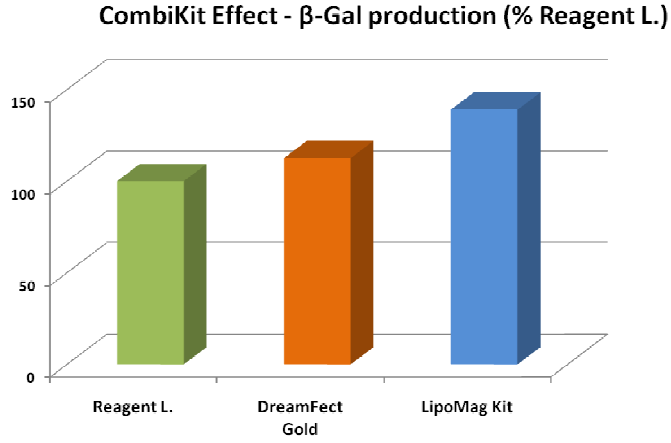


Liver endothelial cells and Breast cancer cell line (MCF-7) were transfected with Reagent L., DreamFect™ Gold, or ***LipoMag Kit*** using 0.125 µg or 0.250 µg of DNA. Reagents were used as previously explained. 24 hours post transfection GFP positive cells were monitored by Flow Cytometry and mean of fluorescence intensity was measured by cytofluorometry.

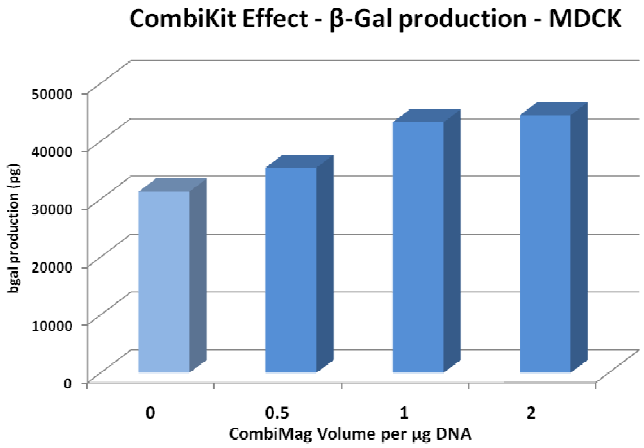


HMEC-1 and Liver endothelial cells were transfected with Reagent L., DreamFect™ Gold, or ***LipoMag Kit*** using 0.250 µg of DNA. Reagents were used as previously explained. GFP expression was assessed under fluorescent microscope 24H after transfection

Transgene expression enhancement with *LipoMag Kit*



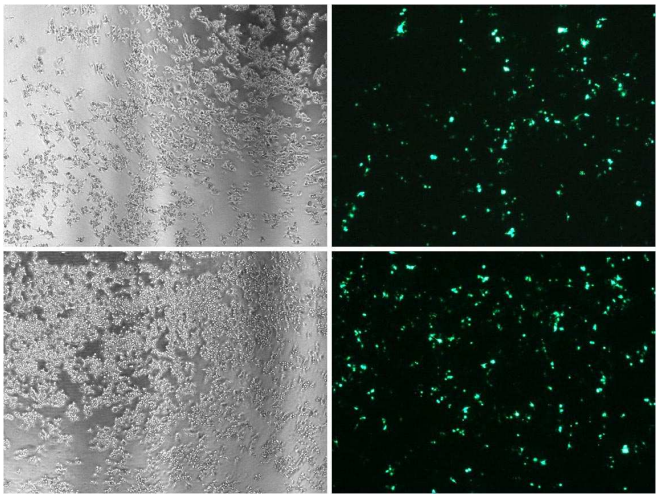
C6 Glioblastoma were transfected with Reagent L., DreamFect™ Gold or ***LipoMag Kit*** using 0.25 µg of DNA. Reagents were used as previously explained. Beta-galactosidase expression was measured with ONPG kit (cat # GO10001) 24h post-transfection. Results are show as relative expression of Beta-galactosidase.



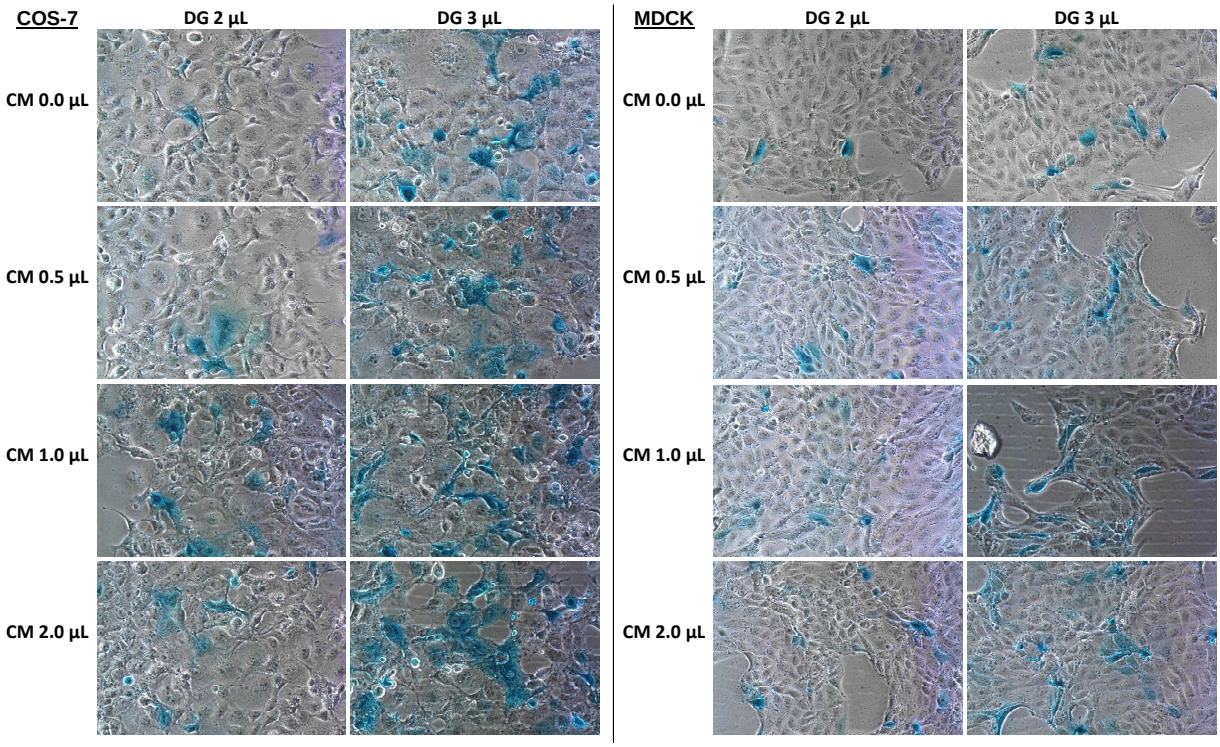
MDCK were transfected using 0.25 µg of DNA with ***LipoMag Kit*** at different ratios: 3 µL of DreamFect™ Gold per µg of DNA and then mixed with 0; 0.5; 1; 2 µL of Combimag per µg DNA. -Galactosidase expression was measured with ONPG Kit (cat # GO10001) 24h post-transfection.

CombiMag 1µL + DreamFect Gold **2µL**

CombiMag 1µL + DreamFect Gold **3µL**



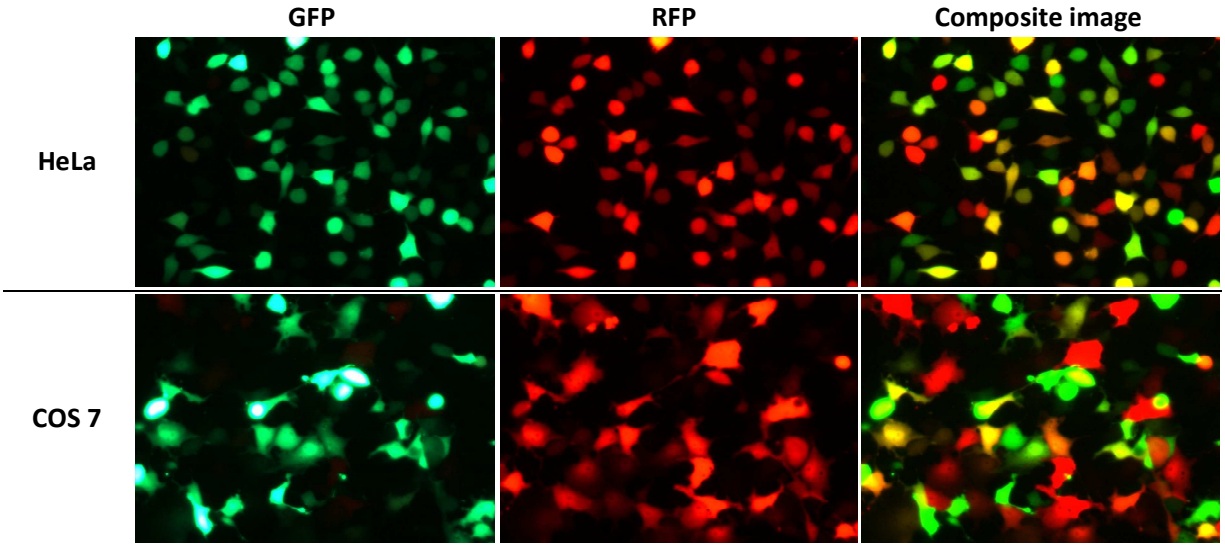
RAW macrophages were transfected using 0.25 µg of DNA with ***LipoMag Kit*** at different ratios: 2 µL or 3 µL of DreamFect™ Gold per µg of DNA and then mixed with 1 µL of CombiMag per µg of DNA. GFP expression was assessed under fluorescent microscope 24H after transfection.



COS-7 and MDCK cells were transfected using 0.25 µg of DNA with ***LipoMag Kit*** at different ratios: 2 µL or 3 µL of DreamFect™ Gold per µg of DNA and then mixed with 0; 0.5; 1; 2 µL of Combimag per µg DNA. Beta-Galactosidase expression was visualized with X-gal staining kit (Ref. #GX10003) 24 hours after transfection.

Co- and sequential transfections with *LipoMag Kit*

The association of Lipofection and Magnetofection™ allows combining transfections in order to 1) raise the number of transfected cells while performing sequential transfections (non transfected cells in the first round are now transfected) or to 2) perform co-transfection (DNA/DNA, DNA/siRNA...).



HeLa and COS 7 cells were first transfected with 0.25 µg of GFP expression plasmid mixed with ***LipoMag Kit*** (DreamFect™ Gold: 2 µL/µg DNA for HeLa and 3 µL/µg DNA for COS-7 – 1 µL CombiMag per µg DNA for both cell lines). 1 hour later, cells were sequentially transfected with RFP plasmid under the same conditions. Results were assessed by fluorescence microscopy 24 hours later.

Optimization of DNA/DreamFect™ Gold ratio

The general protocol is as simple as follow: Use 2, 3 or 4 µL of **DreamFect™ Gold** per µg of DNA depending on cell type and then mixed with 1 µL CombiMag per µg DNA.

However, optimal conditions may vary depending on the nucleic acid, cell types, size of cell culture dishes and presence or absence of serum. Therefore, the amounts and ratios of the individual components (DNA and DreamFect™ Gold) may have to be adjusted to achieve best results (see examples of results above). Consequently, we suggest that you optimized these important parameters.

1. The ratio of DreamFect™ Gold / DNA
2. The quantity of DNA
3. The CombiMag ratio (1 or 2 µL per µg DNA)
4. The cell number
5. The presence or absence of serum
6. The incubation time

Our team has developed many cell type specific protocols with optimized transfection conditions. Please contact our technical support service to obtain these protocols: tech@ozbiosciences.com

Bibliographic references

Please consult our list of references available on the website: www.ozbiosciences.com.