

## DreamFect™ Gold Transfection Reagent - Results

OZ Biosciences is delighted to announce the launching of a new lipid-based transfection reagent, **DreamFect™ Gold**. This 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) combine with superior transgene expression level due to its improved cytoplasmic release process and complete biodegradability. In this way, DreamFect Gold is the ideal transfection reagent in a wide variety of cells.

Main **DreamFect™ Gold** features are:

1. Highly efficient & Biodegradable
2. Achieve superior transgene expression level than any other reagents
3. Multipurpose (various types of nucleic acids)
4. Universal (cell lines and primary cells)
5. Simple, Ready-to-use and Rapid
6. Serum compatible

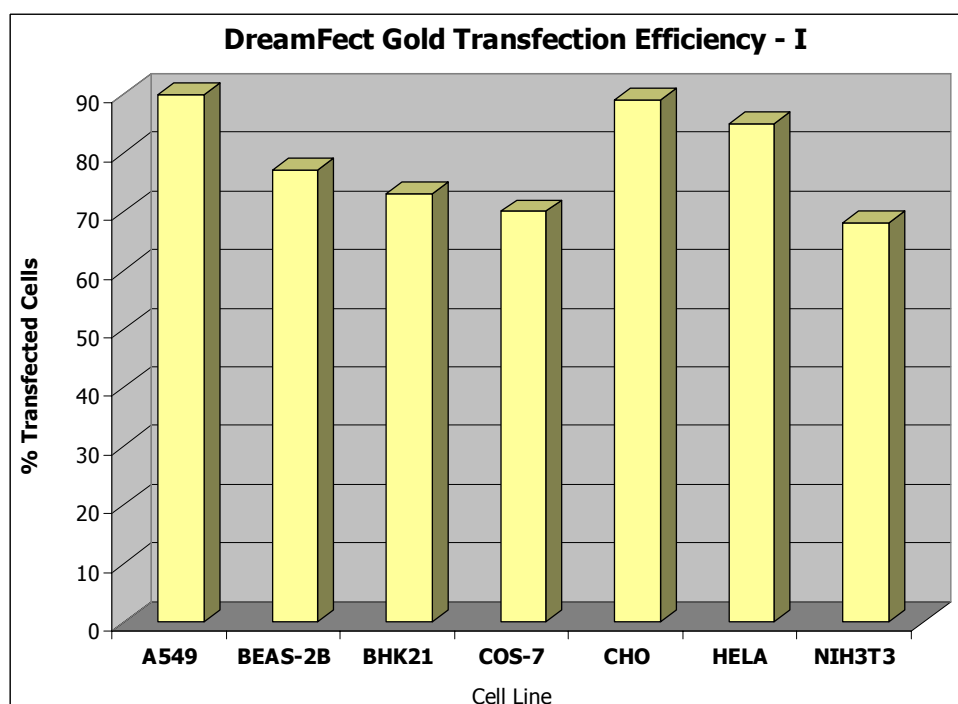
### Nucleic acid types

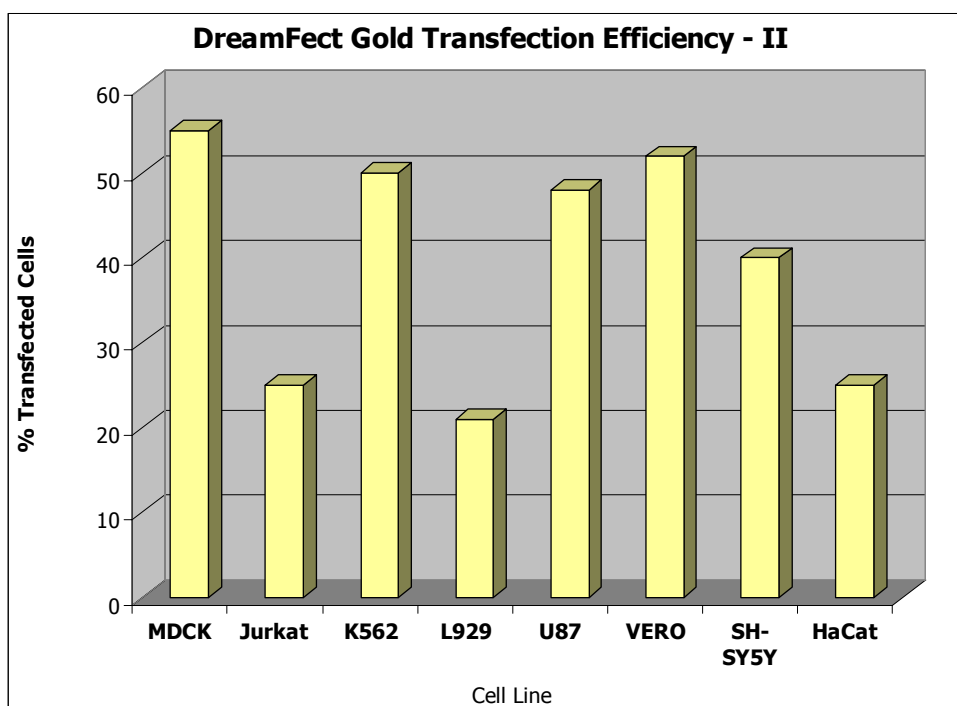
**DreamFect™ Gold** Transfection Reagent is suitable for all type of nucleic acids including: plasmid DNA, siRNA, oligonucleotides, linearized DNA, double stranded RNA, mRNA, shRNA.

### Cell types

**DreamFect™ Gold** is suitable for numerous cells. This reagent has been successfully tested on several cell lines (see Table 1, page 2). If a particular cell type is not listed, this does not imply that **DreamFect™ Gold** is not going to work. OZ Biosciences is maintaining an updated list of cells successfully tested that is available on the website: [www.ozbiosciences.com](http://www.ozbiosciences.com). You can also submit your data to [tech@ozbiosciences.com](mailto:tech@ozbiosciences.com) so we can update this list and give you all the support you need.

### DreamFect™ Gold transfection efficiency on various cell lines





Several cell lines ( $1 \times 10^5$  cells/ well) were transfected with 1  $\mu$ g of pEGFP plasmid DNA per well in a 24-well plate. Transfections were performed with 4  $\mu$ L per well of DreamFect Gold transfection reagent. Percentage of transfected cells were measured 24h post transfection by cytofluorimetry.

**Table 1:** Example of cells successfully transfected with *DreamFect™ Gold* Transfection Reagent.

<b>Cell Lines</b>	<b>Cell Type</b>	<b>Species</b>	<b>% transfected cells</b>	<b>Transgene expression level</b>
293, 293T	Kidney	Human	85-95 %	+++
3T6	Embryonic Fibroblasts	Mouse	N.D.	N.D.
A549	Non-small cell lung carcinoma	Human	80-90 %	+++
B16-F10	Melanoma	Mouse	N.D.	N.D.
BEAS-2B	Bronchial Epithelial	Human	65-75 %	++
BHK-21	Kidney	Hamster	65-75 %	++
CHO, CHO-K1	Ovary (epithelial like)	Chinese Hamster	80-90 %	+++
COS-1 , COS-7	Kidney	Green Monkey	65-75 %	+++
CV-1	Fibroblast-like (Kidney)	Monkey	N.D.	N.D.
H441	Lung epithelial	Human	30%	N.D.
HaCat	Keratinocyte	Human	15-25 %	+
HEK293	Kidney	Human	85-95 %	+++
HeLa, HeLa-S3	Cervix carcinoma	Human	80-90 %	+++
Jurkat *	Acute T cell lymphocyte	Human	20-30 %	+
K562*	Myelogenous leukemia	Human	45-55 %	++
L929	Fibrosarcoma cells	Mouse	20-25 %	+
MCF-7	Breast adenocarcinoma	Human	30-35 %	N.D.
MDCK	Kidney	Dog	55-65 %	++
N2A	Neuroblastoma	Mouse	70-80 %	+++
NIH-3T3	Fibroblasts	Mouse	60-90 %	++
PC-12	Pheochromocytoma (Adrenal)	Rat	N.D.	N.D.
RAW	Macrophage	Mouse	10-20 %	+
SH-SY5Y	Neuroblastoma	Human	35-45 %	+
U87	Glioma	Human	40-50 %	++
Vero	Kidney	Green Monkey	50-55 %	+++

Primary Cells	Species	% transfected cells	Transgene expression level
Glioma	Human	N.D.	N.D.
Hippocampal Neurons	Rat	N.D.	N.D.

\* Suspension cells

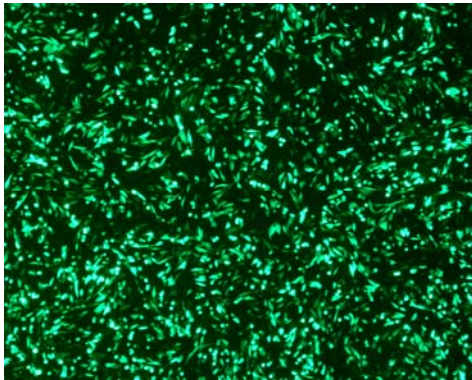
ND: Not determined

+++ : ≥ 40 ng transgene expression level in a well of 96-well plate

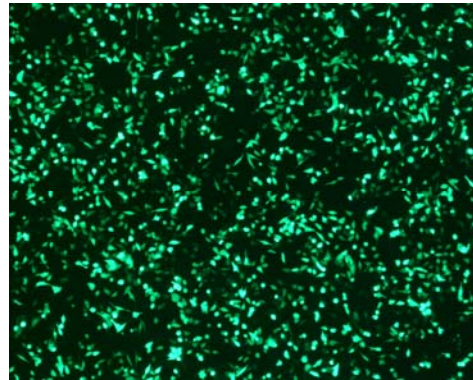
++ : 20 to 40 ng transgene expression level in a well of 96-well plate

+ : ≤ 20 ng transgene expression level in a well of 96-well plate

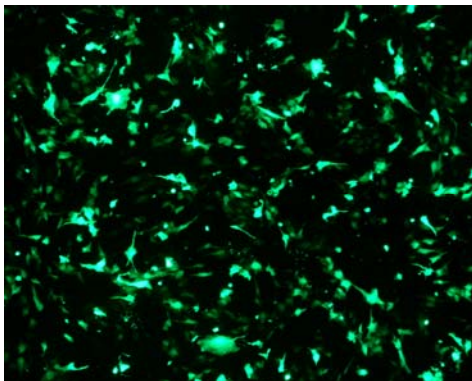
***GFP expression in different cells transfected with DreamFect™ Gold***



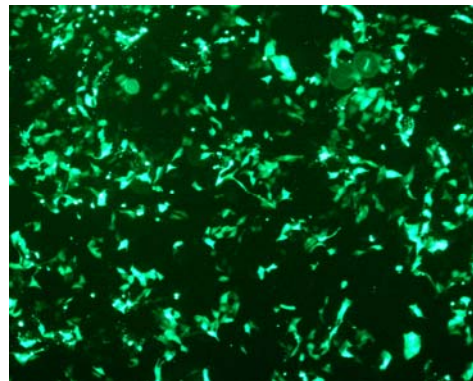
**CHO-K1**



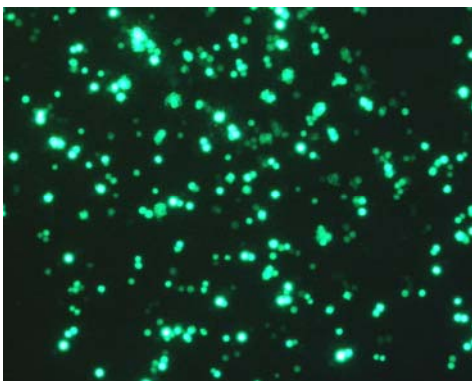
**HeLa-S3**



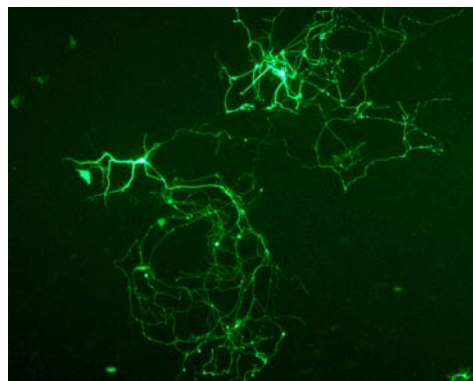
**BEAS-2B**



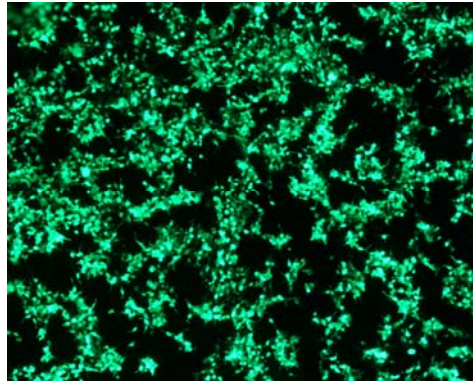
**MDCK**



**Jurkat**



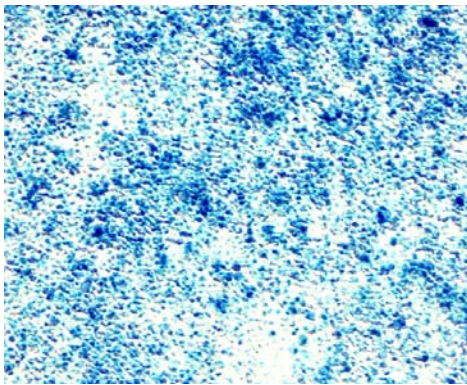
**Primary Hippocampal Neurons**



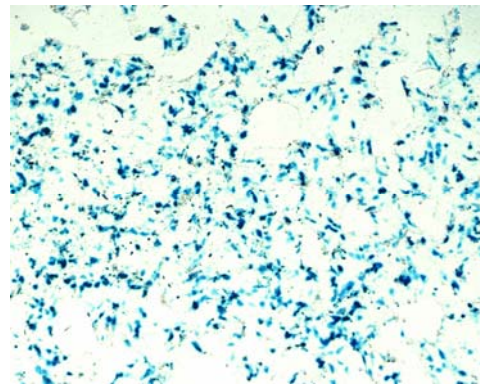
**HEK293**

Several cell lines ( $1 \times 10^5$  cells/ well) were transfected with 1  $\mu$ g of pEGFP plasmid DNA and 4  $\mu$ L of DreamFect Gold reagent per well in a 24-well plate. EGFP expression was monitored 24 h after transfection by fluorescence microscopy except for Neurons which were analyzed 72h post-transfection.

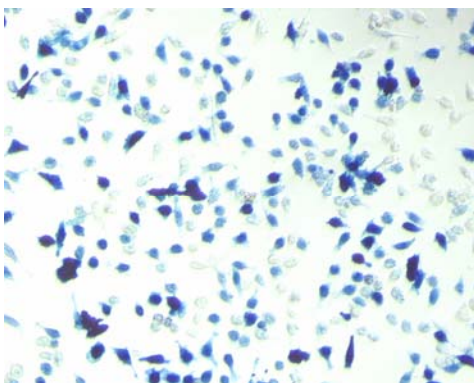
***$\beta$ -Galactosidase expression in different cell lines transfected with DreamFect™ Gold***



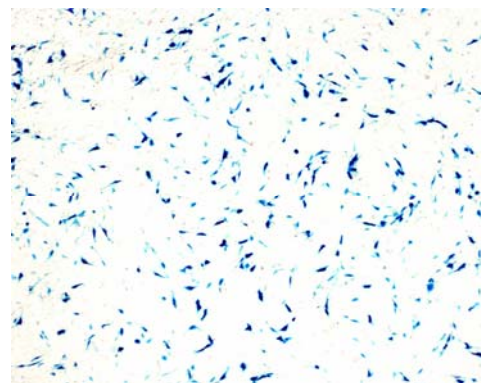
**BHK-21**



**MDCK**



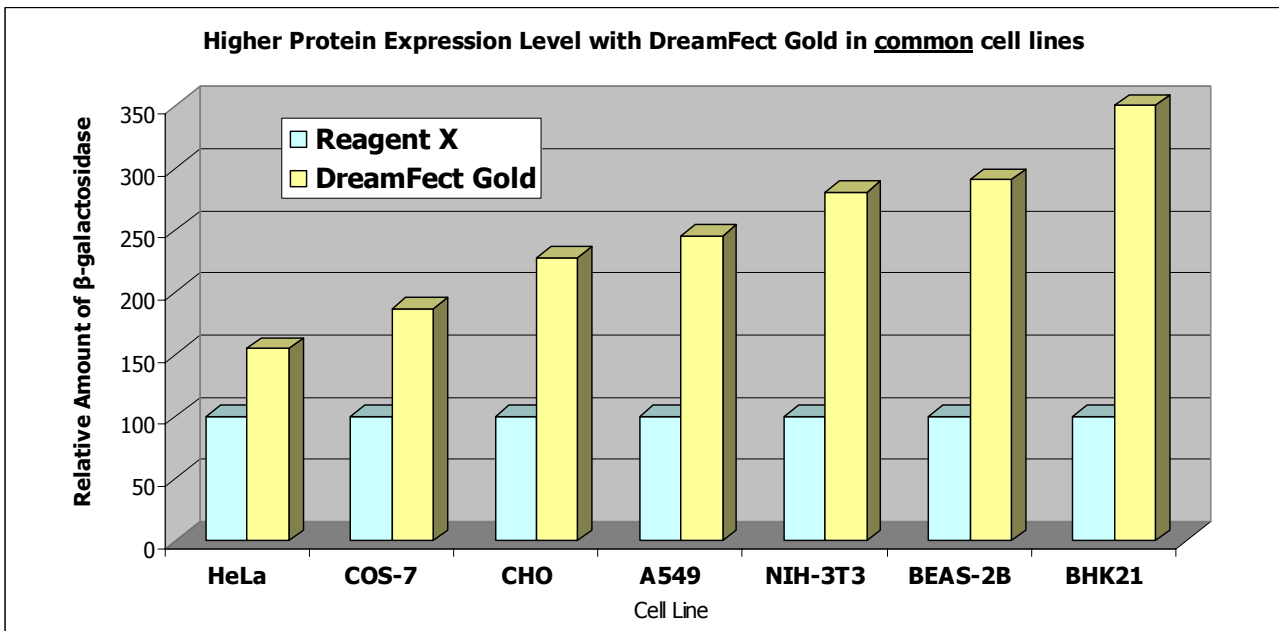
**HeLa-S3**



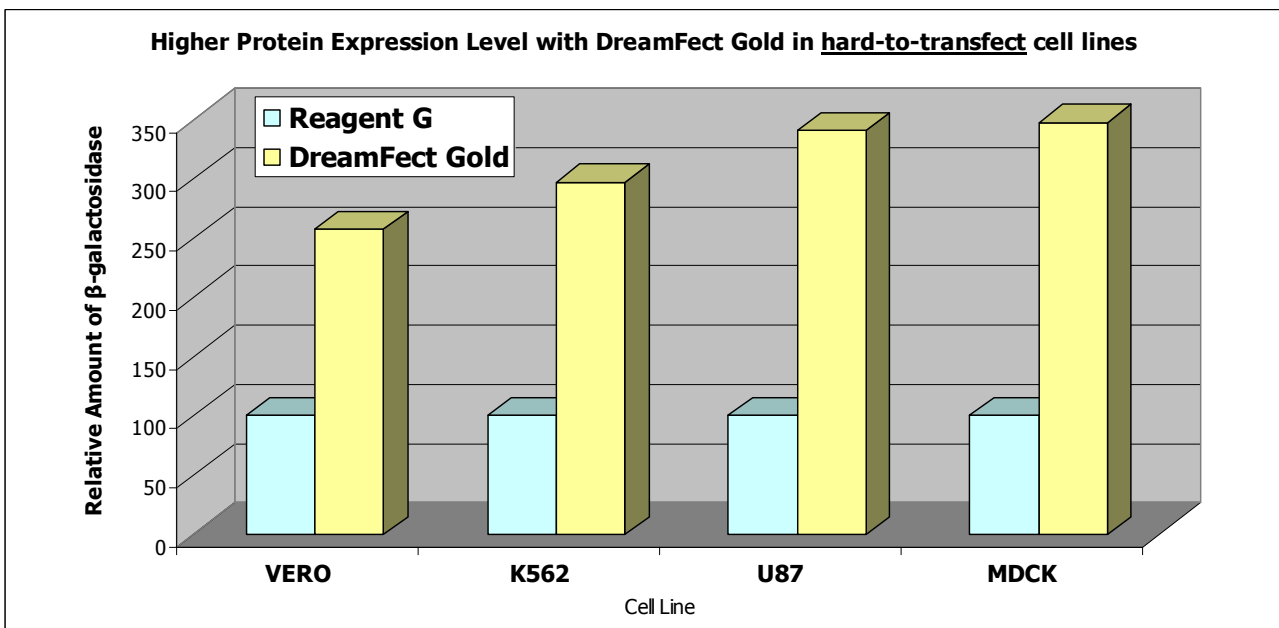
**NIH-3T3**

Various cell lines ( $1 \times 10^5$  cells/ well) were transfected with 1  $\mu$ g of pLacZ plasmid DNA and 4  $\mu$ L of DreamFect Gold reagent per well in a 24-well plate.  $\beta$ -Galactosidase expression was revealed 24 h post-transfection using OZ Biosciences' X-Gal staining kit (catalog # GX-10003).

**Superior transgene expression level with DreamFect™ Gold**

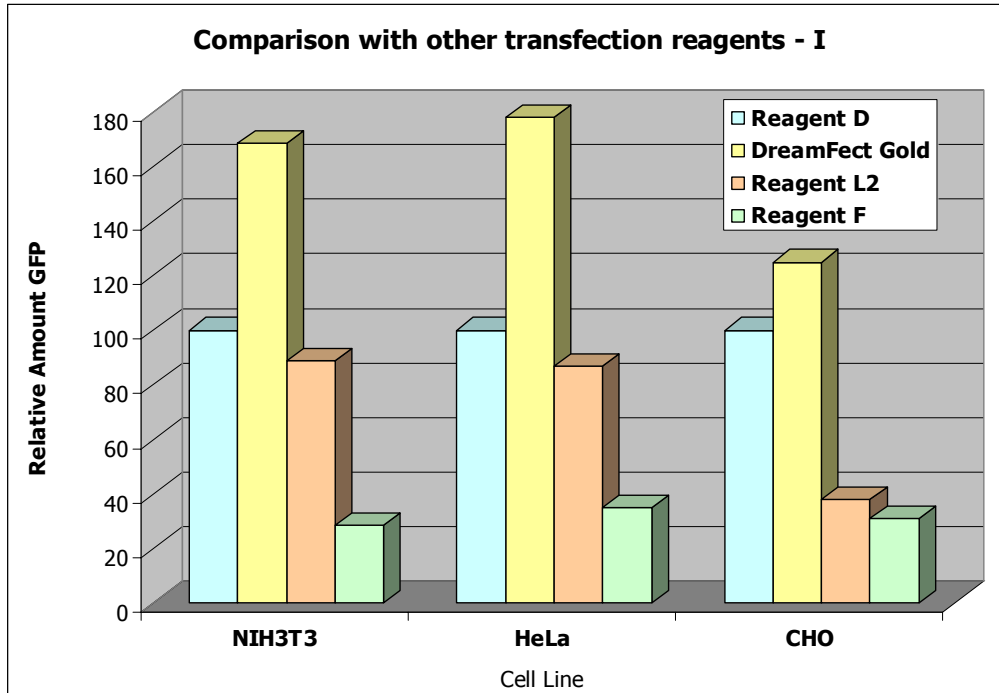


Various cell lines ( $15 \times 10^3$  cell / well) were transfected with  $0.25 \mu\text{g}$  of pLacZ plasmid and  $1 \mu\text{L}$  of DreamFect Gold reagent per well in a 96-well plate.  $\beta$ -Galactosidase expression was monitored 24 h after transfection using OZ Biosciences' ONPG  $\beta$ -galactosidase assay kit (catalog # G010001). Quantity of  $\beta$ -galactosidase in each well was measured and results are expressed as relative values.

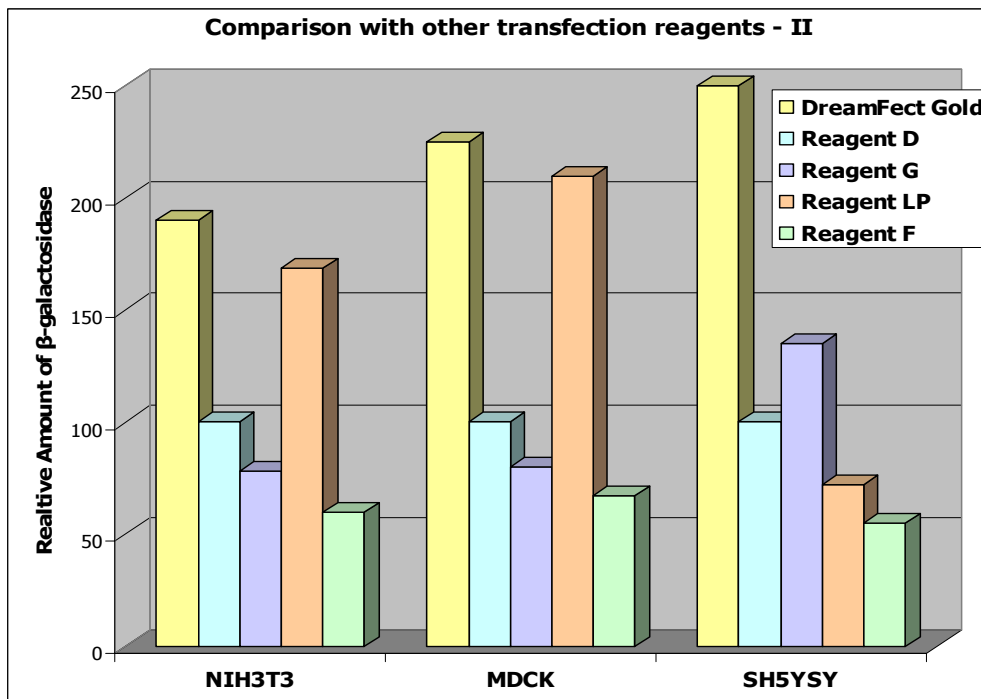


Various cell lines ( $15 \times 10^3$  cell / well) were transfected with  $0.5 \mu\text{g}$  of pLacZ plasmid and  $2 \mu\text{L}$  of DreamFect Gold reagent per well in a 96-well plate.  $\beta$ -Galactosidase expression was monitored 24 h after transfection using OZ Biosciences' ONPG  $\beta$ -galactosidase assay kit (catalog # G010001). Quantity of  $\beta$ -galactosidase in each well was measured and results are expressed as relative values.

**DreamFect Gold outperform other transfection reagents**

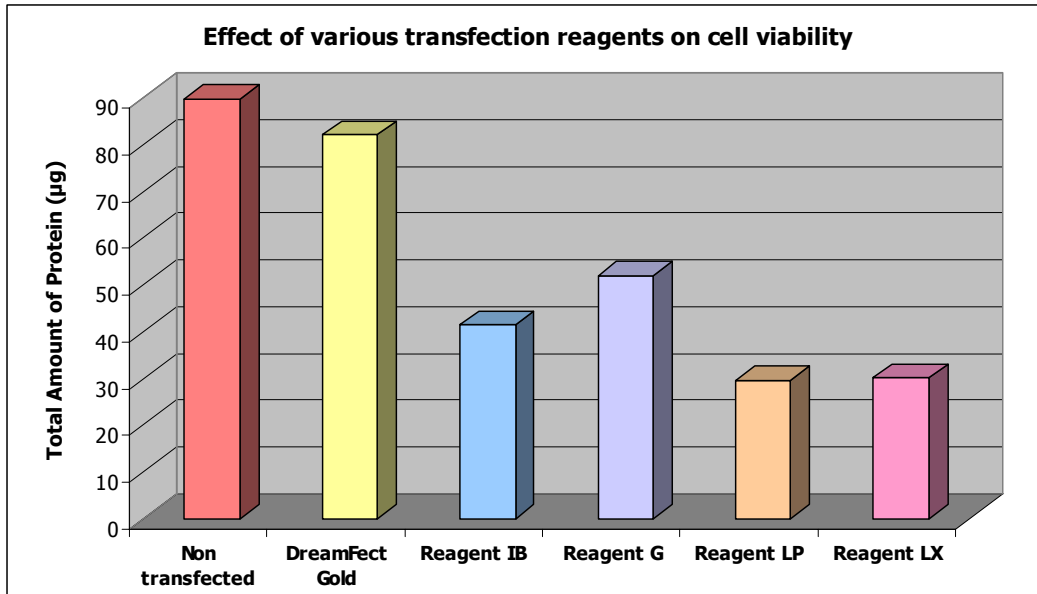


Cell lines ( $1 \times 10^5$  cells / well) were transfected with 1  $\mu$ g of pEGFP plasmid DNA and 4  $\mu$ L of DreamFect Gold reagent per well in a 24-well plate. DreamFect™ Gold transfections were performed as described in the instruction manual with 4  $\mu$ L of reagent /  $\mu$ g of DNA. The other transfection reagents were assayed according to the manufacturer's instruction. The average intensity of GFP was measured in each well by cytofluorimetry and results are expressed as relative values.



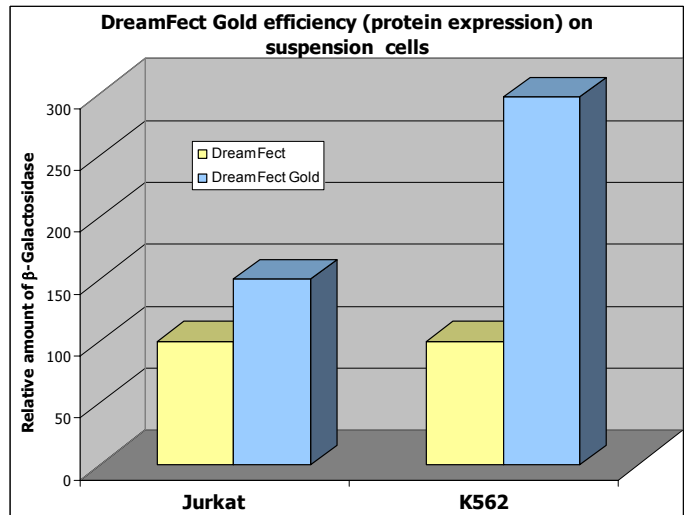
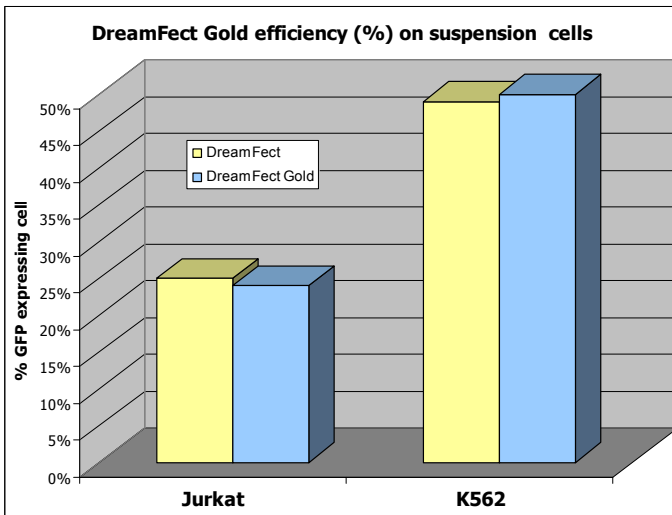
Several cell lines ( $75 \times 10^3$  cells / well) were transfected with 0.5  $\mu$ g of pLacZ plasmid DNA and 2  $\mu$ L of DreamFect Gold per well in a 96-well plate. The other transfection reagents were assayed according to the manufacturer's instruction.  $\beta$ -galactosidase expression was measured 24 h post-transfection using OZ Biosciences' ONPG  $\beta$ -galactosidase assay kit (catalog # G010001).

**DreamFect Gold is non toxic**



HeLa cells ( $75 \times 10^3$  / well) were transfected with 0.5 µg of pLacZ plasmid and 2 µL of each reagent per well in a 96-well plate. The total amount of protein per well was monitored 24 h after transfection using OZ Biosciences' Bradford Protein Assay kit (catalog number BA00100).

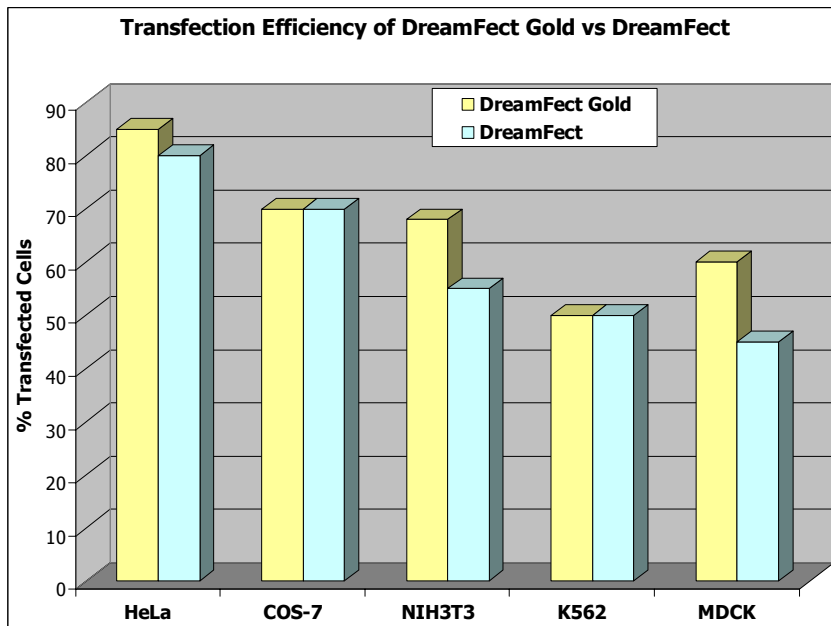
**DreamFect Gold is suitable for suspension cells**



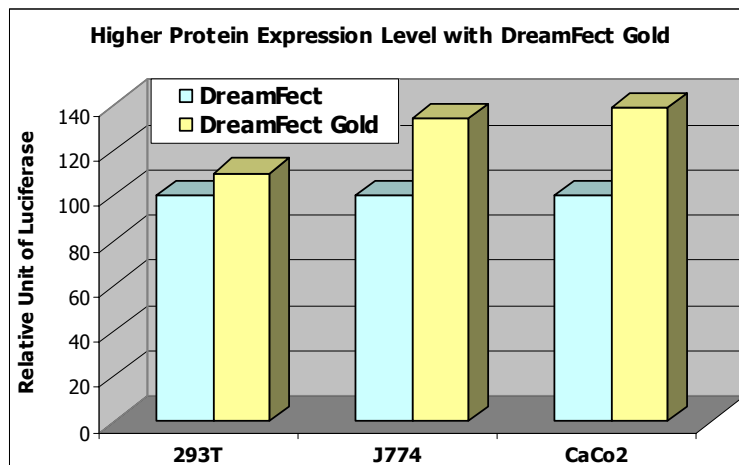
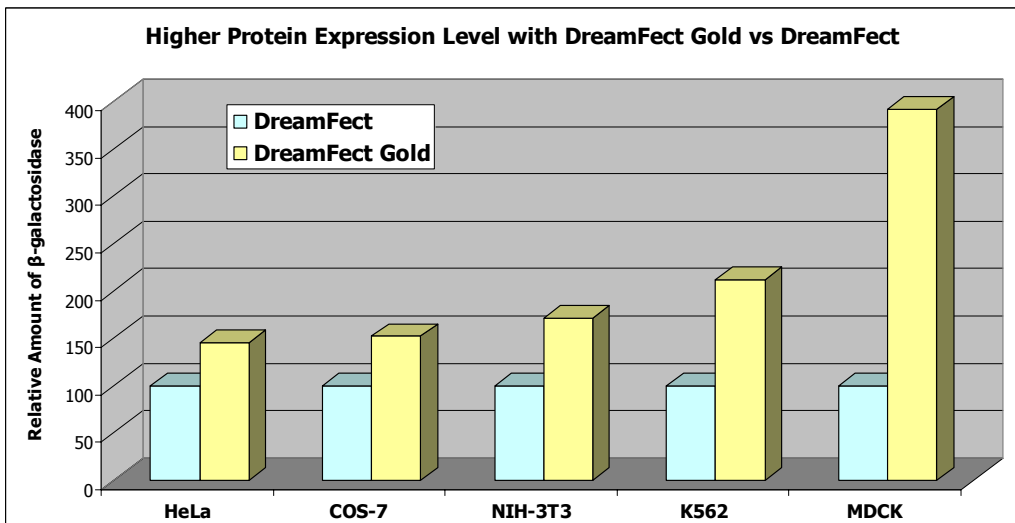
Cell lines ( $2 \times 10^5$  cells / well) were transfected with 2 µg of pEGFP or pLacZ plasmid DNA and 6 µL of DreamFect Gold or 4 µL of DreamFect per well in a 24-well plate described in the instruction manual; Cells were analyzed 24 hours post-transfection by flow cytometry for percentage of GFP expressing cells or by using OZ Biosciences' CPRG β-galactosidase assay kit (catalog # G010002).

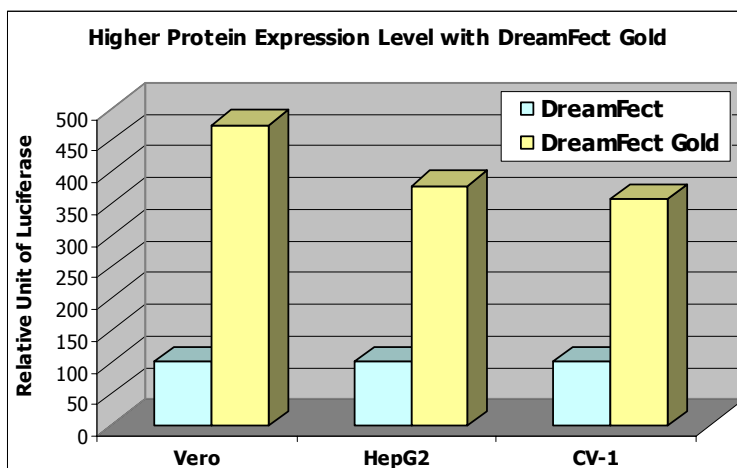
## DreamFect and DreamFect Gold comparison study

- **DreamFect & DreamFect Gold** have comparable efficiency in term of % of transfected cells



- **DreamFect Gold** provides higher transgene expression level than **DreamFect** due to improved cytoplasmic release mechanism and better biodegradability.





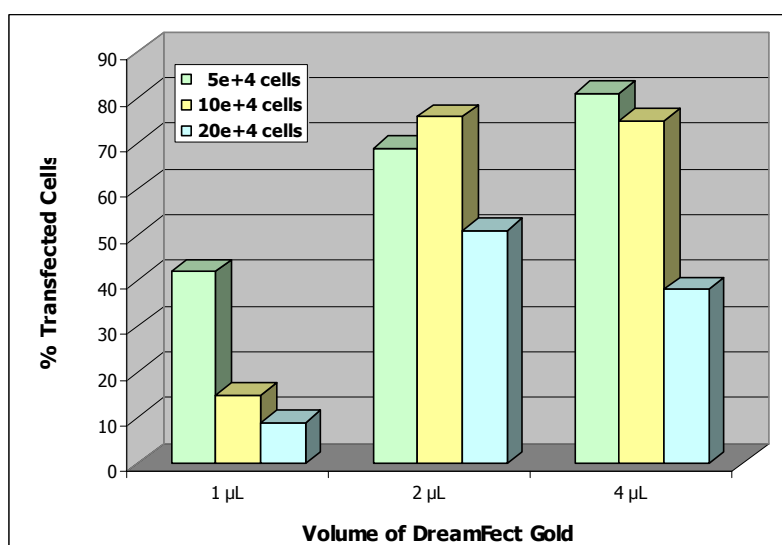
### *Optimization of DNA / DreamFect Gold ratio*

The general protocol is as simple as using 4  $\mu\text{L}$  of **DreamFect™ Gold** per 1  $\mu\text{g}$  of 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 below). Consequently, we suggest that you optimized this important parameter.

1. The ratio of DreamFect Gold / DNA
2. The quantity of DNA
3. The cell number
4. The presence or absence of serum
5. The incubation time

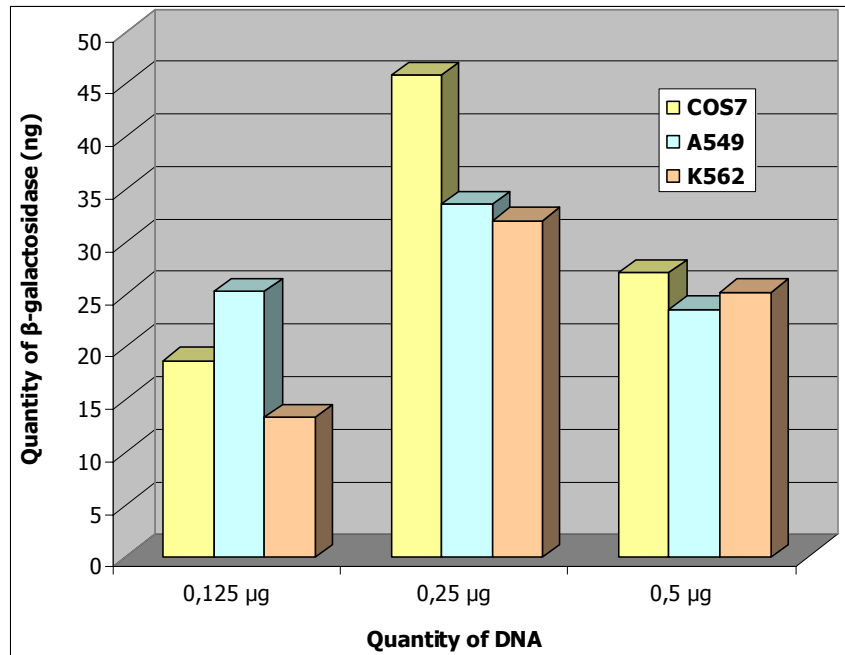
For instance, optimum DreamFect Gold / DNA ratio is 4/1 for A549, BEAS-2B, COS7, K562 and U87 in a 24-well plate. Conversely, optimum ratio for HeLa, Raw, HEK293, CHO and BHK is 2/1 in a 24-well plate. Our team has developed many cell type specific protocols with optimized transfection conditions. Please contact our technical support service to obtain these protocols: [tech@ozbiosciences.com](mailto:tech@ozbiosciences.com)

### *Optimization of cell number and amount of DreamFect Gold*



Various numbers of A549 cells were transfected with 1  $\mu\text{g}$  of pEGFP plasmid and 1  $\mu\text{L}$ , 2  $\mu\text{L}$  or 4  $\mu\text{L}$  of DreamFect Gold in a 24-well plate. The % of transfected cells were measured 24h post-transfection by cytofluorimetry.

### Optimization of DNA amount



COS7, A549 and K562 cells ( $15 \times 10^3$  cells / well) were transfected with various amounts of pLacZ plasmid and 0.5 µL, 1 µL and 2 µL of DreamFect™ Gold reagent in a 96-well plate, respectively. β-Galactosidase expression was monitored 24 h after transfection using OZ Biosciences' ONPG β-galactosidase assay kit (catalog # G010001).

### Bibliographic references

Please consult our list of references available on the website: [www.ozbiosciences.com](http://www.ozbiosciences.com).