PolyMag Neo Results

PolyMag Neo is based on OZ Biosciences Magnetofection Technology. It was specifically developed to achieve high transfection efficiency (percentage of cells transfected) combined with superior transgene expression level. PolyMag Neo represents the latest development of our magnetic nanoparticles based transfection reagents. In this way, PolyMag Neo is the ideal transfection reagent in a wide variety of cells.

Main features are:

- High transgene expression
- Good transfection efficiency
- Multipurpose (various types of nucleic acids)
- Universal (primary cells and cell lines)
- Simple, Ready-to-use and Rapid
- Non toxic
- Compatible with and without serum-containing culture media

Nucleic acid types

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

Cell Types

PolyMag Neo is suitable for numerous cells. This reagent has been successfully tested on several cells (see Table 1). If a particular cell type is not listed, this does not imply that **PolyMag Neo** 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. You can also submit your data to tech@ozbiosciences.com so we can update this list and give you all the support you need.

PolyMag Neo transfection efficiency on various cell lines

Several cell lines ($1x10^5$ cells/ well) were transfected with 0.5 µg of pEGFP plasmid DNA per well in a 24-well plate. Transfections were performed with 0.5 µL per well of PolyMag Neo transfection reagent. Percentage of transfected cells were measured 24h post transfection by flow cytometry.

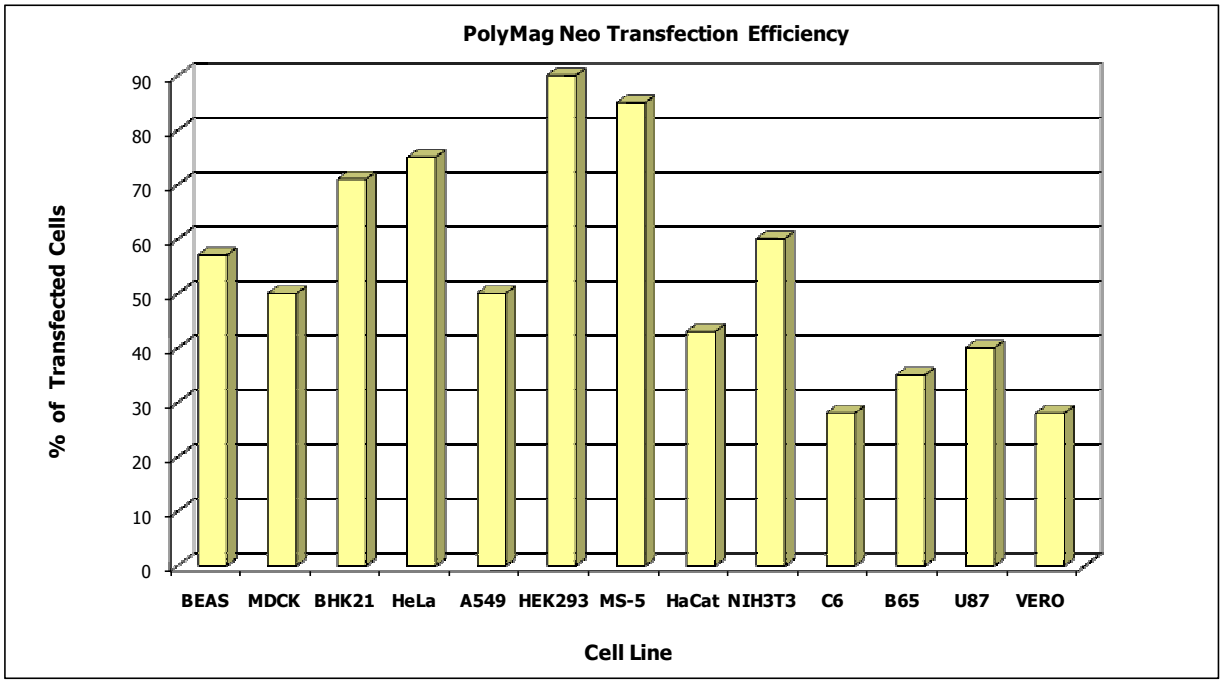
Table 1: Example of cells successfully transfected with **PolyMag Neo** Transfection Reagent.

Cells	***Cell Type***	***Species***	***% Transfected Cells***	***Transgene Expression Level***
293, 293T	Kidney	Human	90 %	+++
A549	Non-small cell lung carcinoma	Human	45-55 %	++
B65	Neuroblastoma	Rat	30-40 %	+
BEAS-2B	Bronchial Epithelial	Human	55-65 %	+++
BHK-21	Kidney	Hamster	65-75 %	+++
C6	Glial Tumor	Rat	25-35 %	+
CHO, CHO-K1	Ovary (epithelial like)	Chinese Hamster	85 %	+++
COS-1 , COS-7	Kidney	Green Monkey	80 %	+++

HaCat	Keratinocyte	Human	40-50 %	+
HEK293	Kidney	Human	90 %	+++
HeLa, HeLa-S3	Cervix carcinoma	Human	70-80 %	+++
Jurkat *	Acute T cell lymphocyte	Human	< 5 %	ND
L929	Fibrosarcoma cells	Mouse	30 %	+
MDCK	Kidney	Dog	45-55 %	+++
MS-5	Bone marrow stroma cells	mouse	80-90%	+++
NIH-3T3	Fibroblasts	Mouse	60 %	++
RAW	Macrophage	Mouse	5-15 %	+
SH-SY5Y	Neuroblastoma	Human	< 5 %	+
U87	Glioma	Human	70 %	+
Vero	Kidney	Green Monkey	25-35 %	+++
PRIMARY CELLS				
HUVEC		Human	40-50 %	
Chondrocytes		Porcine	ND	
Fibroblasts		Mouse	ND	

* suspension cells
ND: Not determined
+++: ≥ 200 ng transgene expression level in a well of 24-well plate
++: 100 to 200 ng transgene expression level in a well of 24-well plate
+: ≤ 100 ng transgene expression level in a well of 24-well plate

Efficiency of **PolyMag Neo** on several cell lines

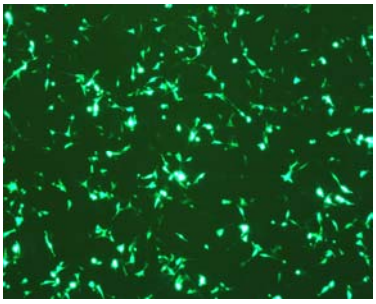


Cells ($1x10^5$) were transfected with 0.5 µg / well of pEGFP plasmid DNA in 24-well plates. Transfections were performed with 0.5 µl / well of polyMag Neo reagent. Percentage of transfected cells were measured 24h post transfection by flow cytometry.

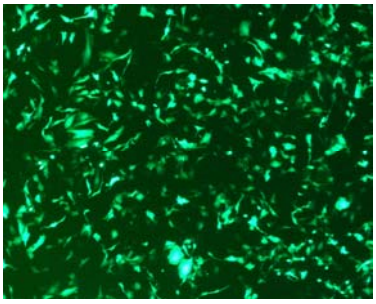
For an updated list of cells successfully transfected, please visit our website: www.ozbiosciences.com.

GFP in different cells transfected with **PolyMag Neo**

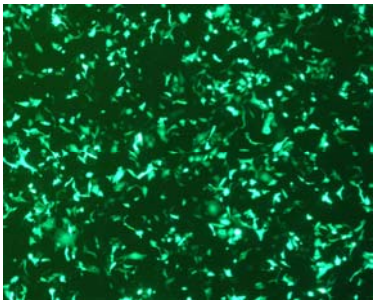
U87



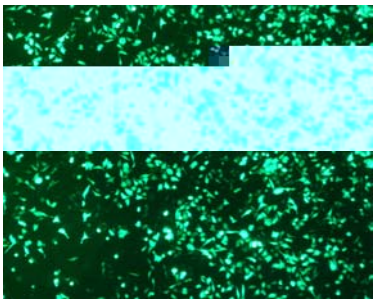
BEAS-2B



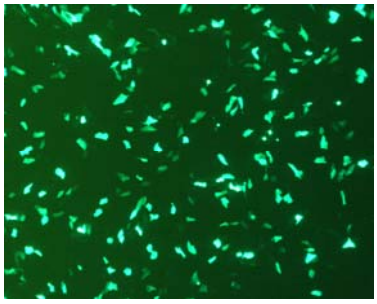
BHK21



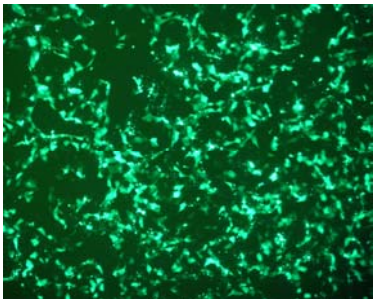
HeLa



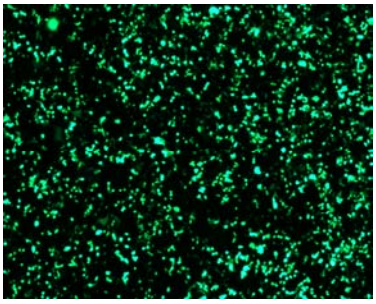
VERO-10A1



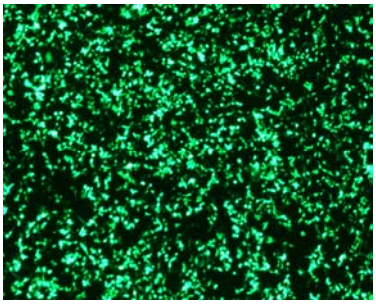
MDCK



HEK293



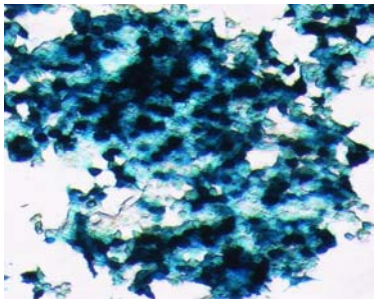
MS-5



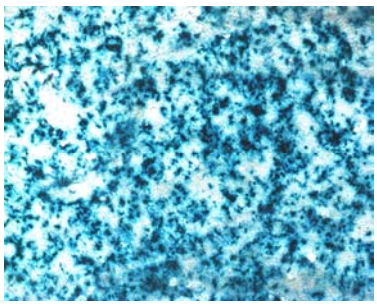
Cells ($1x10^5$) were transfected with 0.5 µg / well of pEGFP plasmid and 0.5 µL of PolyMag Neo reagent in 24-well plates. EGFP expression was monitored 24 h after transfection by fluorescence microscopy.

β-Galactosidase expression in different cell lines transfected with **PolyMag Neo**

HEK293

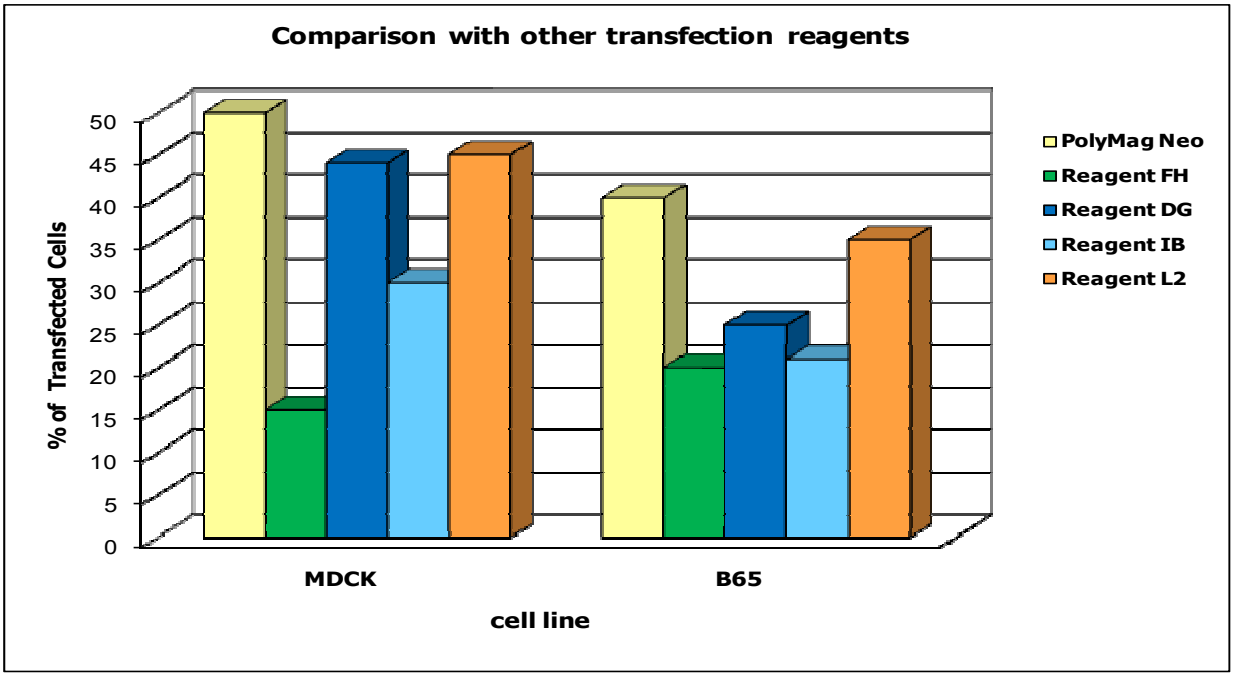


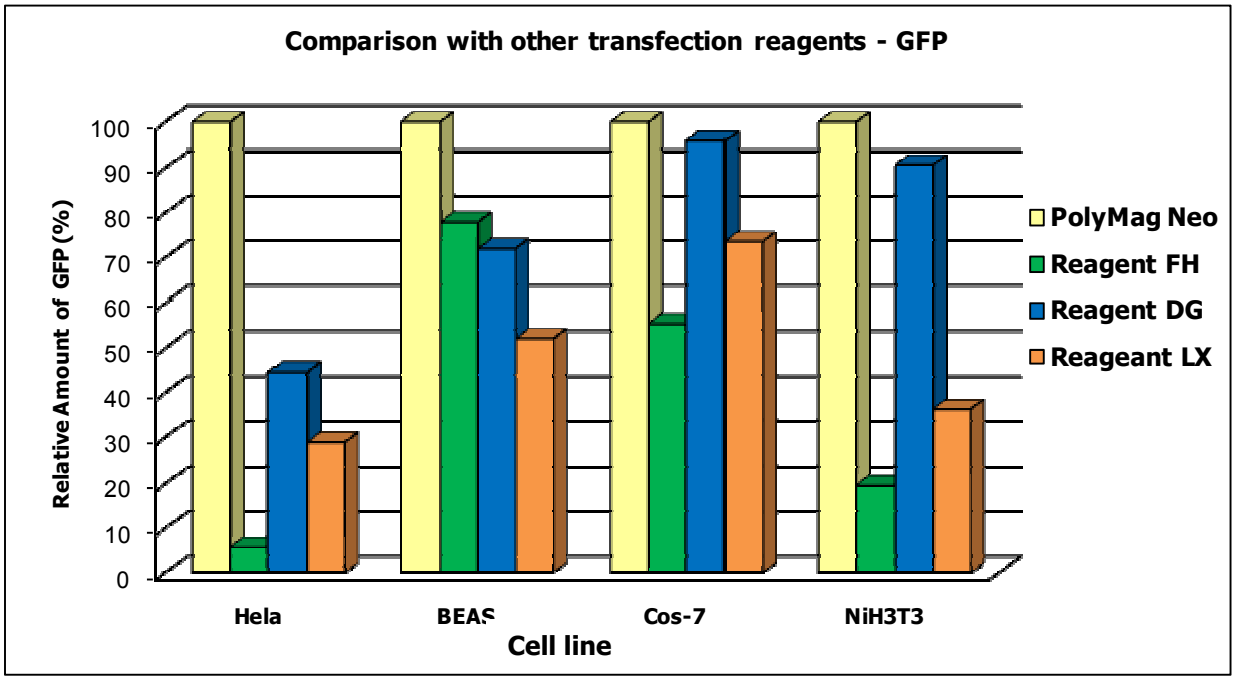
MS-5



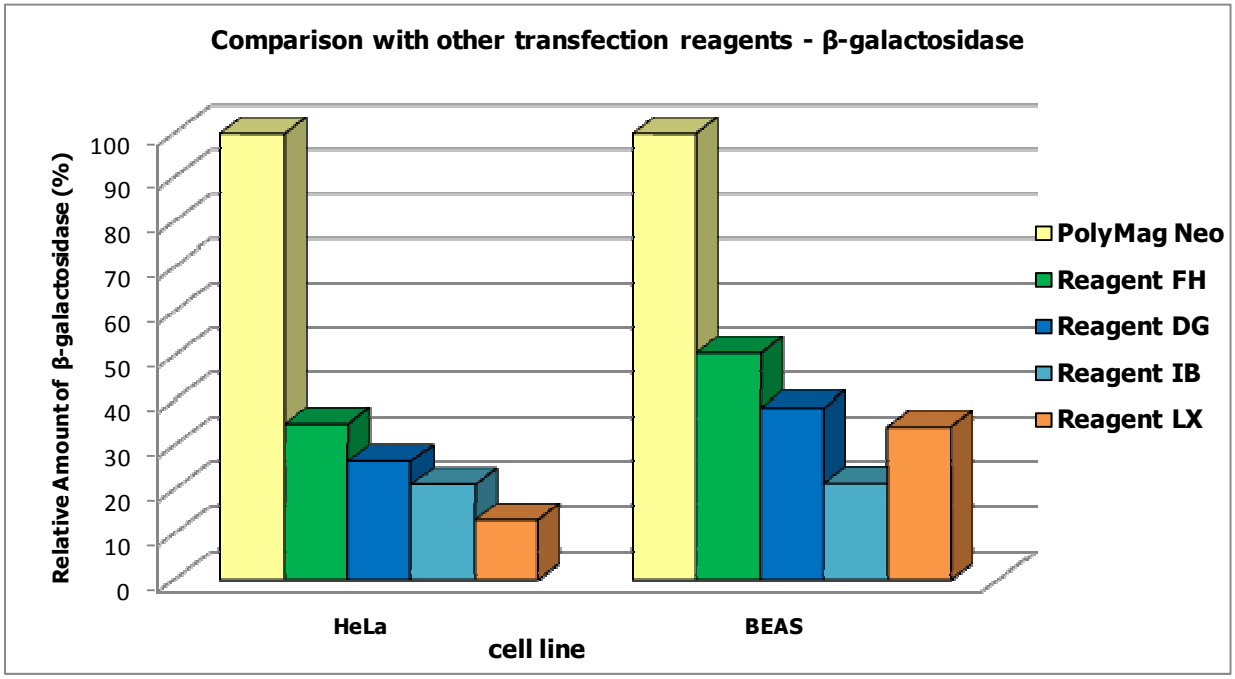
Cells ($1x10^5$) were transfected with 0.5 µg / well of pLacZ plasmid and 0.5 µL of PolyMag Neo reagent in 24-well plates. β-Galactosidase expression was revealed 24 h after transfection using OZ Biosciences' X-Gal staining kit (catalog number GX-10003).

PolyMag Neo efficiency compared to other transfection reagents



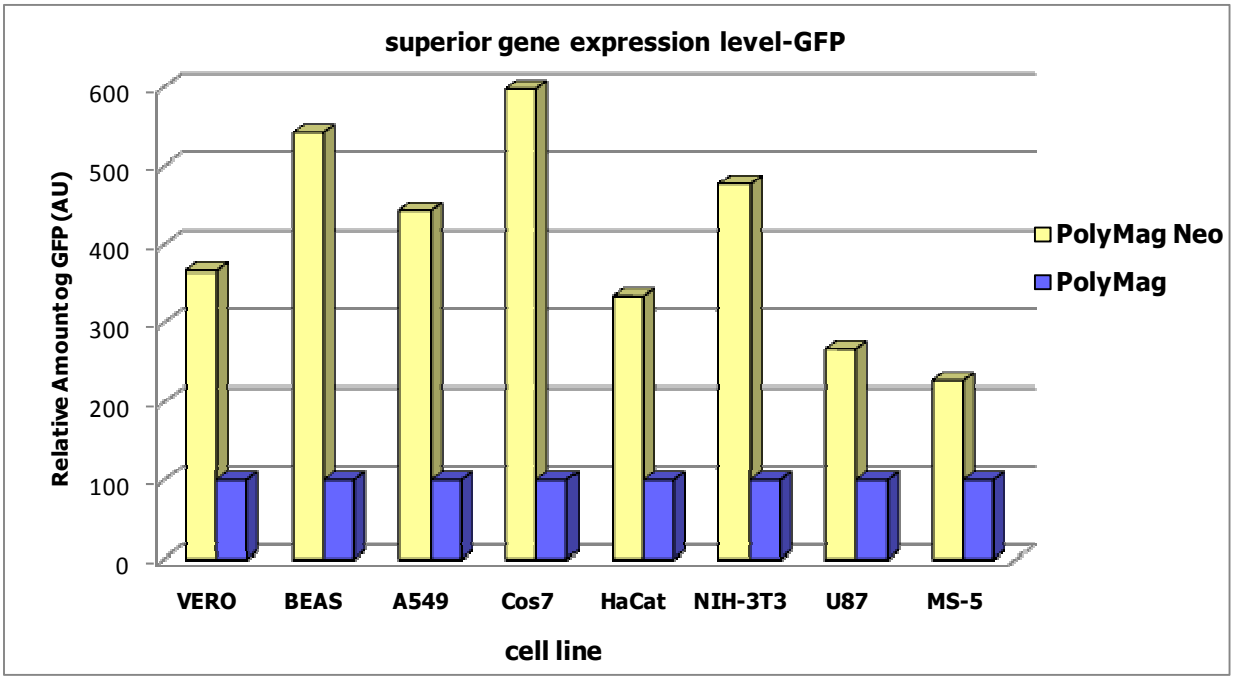


Cells ($1x10^5$) were transfected with 0.5 µg / well of pEGFP plasmid and 0.5 µL of PolyMag Neo reagent in 24-well plates. Other transfection reagents were used as recommended by manufacturers. GFP expression and % of transfected cells were revealed 24 h after transfection using flow cytometry. Results are expressed in percentage of relative values.

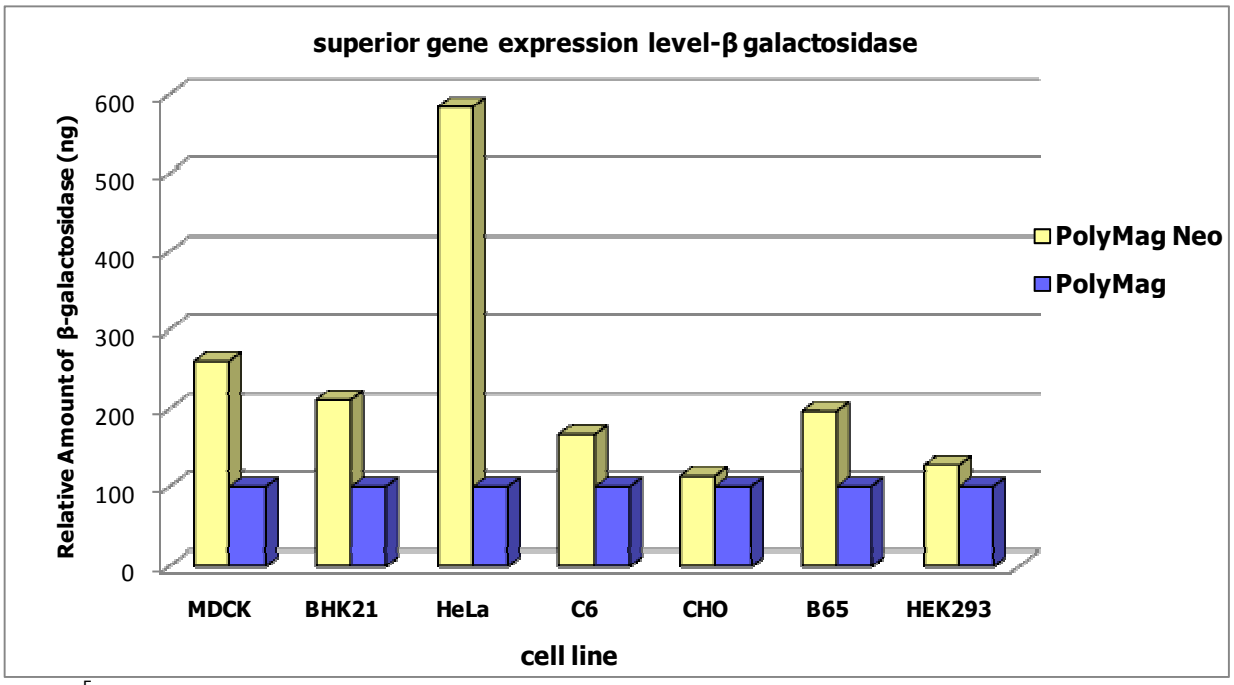


Cells ($1x10^5$) were transfected with 0.5 µg / well of pLac-Z plasmid and 0.5 µL of PolyMag Neo reagent in 24-well plates. Other transfection reagents were used as recommended by manufacturers. β-Galactosidase was revealed 24 h after transfection using OZ Biosciences' ONPG β-galactosidase assay kit (catalog number G010001). Results are expressed in percentage of relative values.

Relative amount of protein expression between **PolyMag Neo** and PolyMag

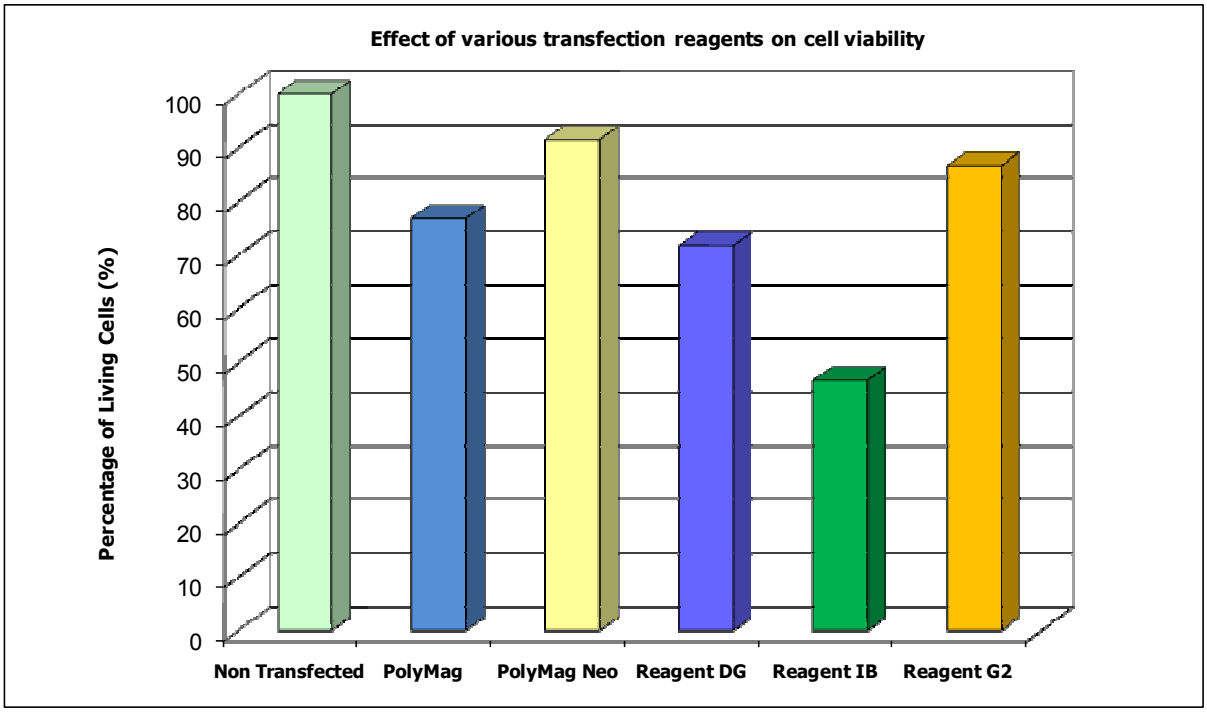


Cells ($1x10^5$) were transfected with 0.5 µg or 1 µg / well of pEGFP plasmid DNA in 24-well plates for PolyMag Neo and PolyMag respectively. 0.5 µL or 1 µL per well of PolyMag Neo or PolyMag were used. GFP average intensity of each well was measured 24 h after transfection by flow cytometry and results are expressed as relative values.



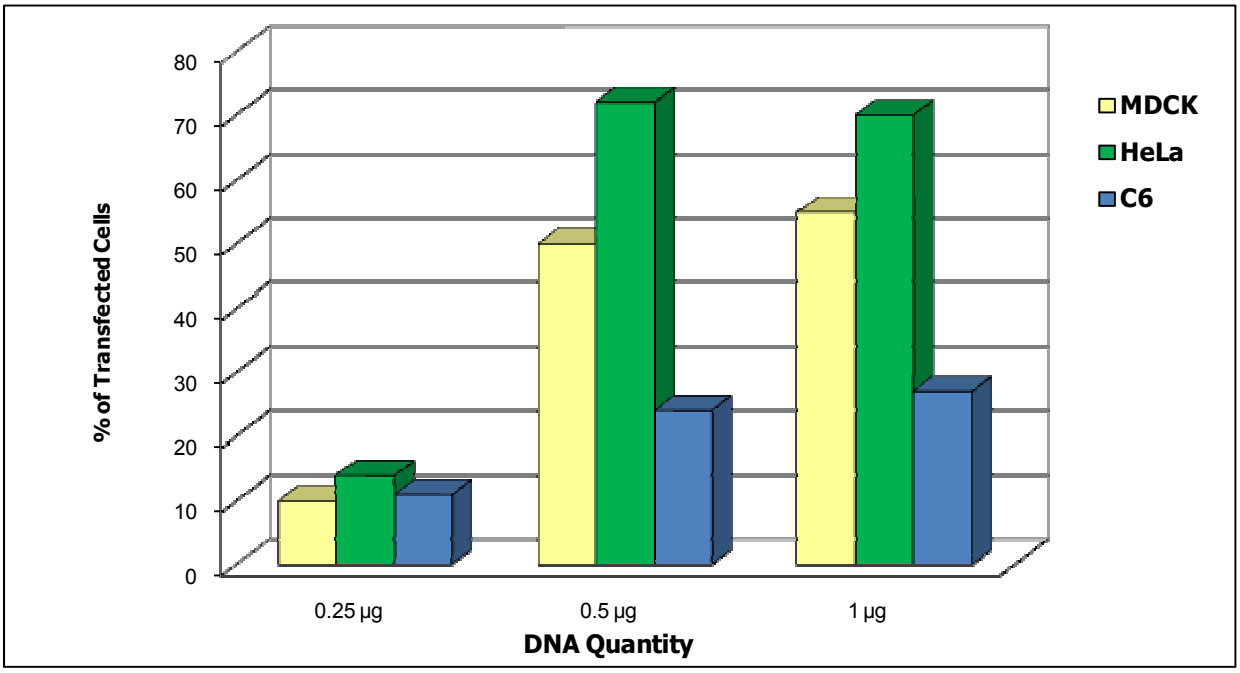
Cells ($1x10^5$) were transfected with 0.5 µg or 1 µg / well of pLacZ plasmid DNA in 24-well plates for PolyMag Neo and PolyMag respectively. 0.5 µL or 1 µL per well of PolyMag Neo or PolyMag were used. β-Galactosidase expression was revealed 24 h after transfection using OZ Biosciences' ONPG β-galactosidase assay kit (catalogue number G010001). β-galactosidase amount of each well was measured by spectrometry and results are expressed in ng of .

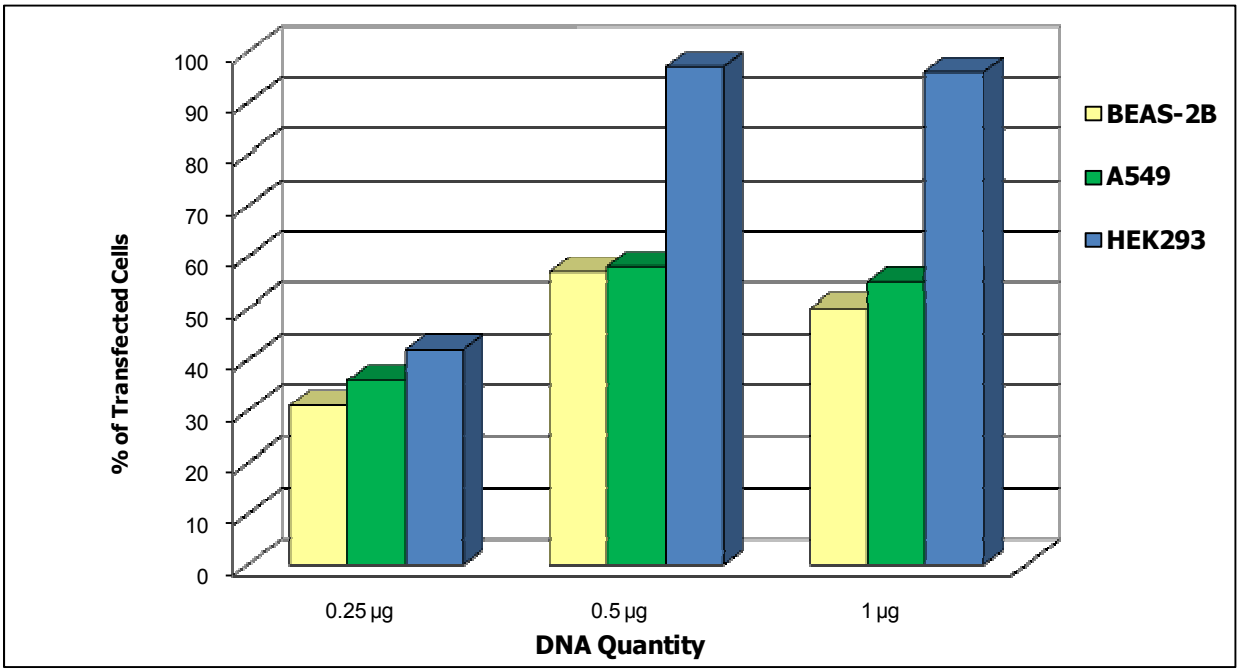
Cell Viability

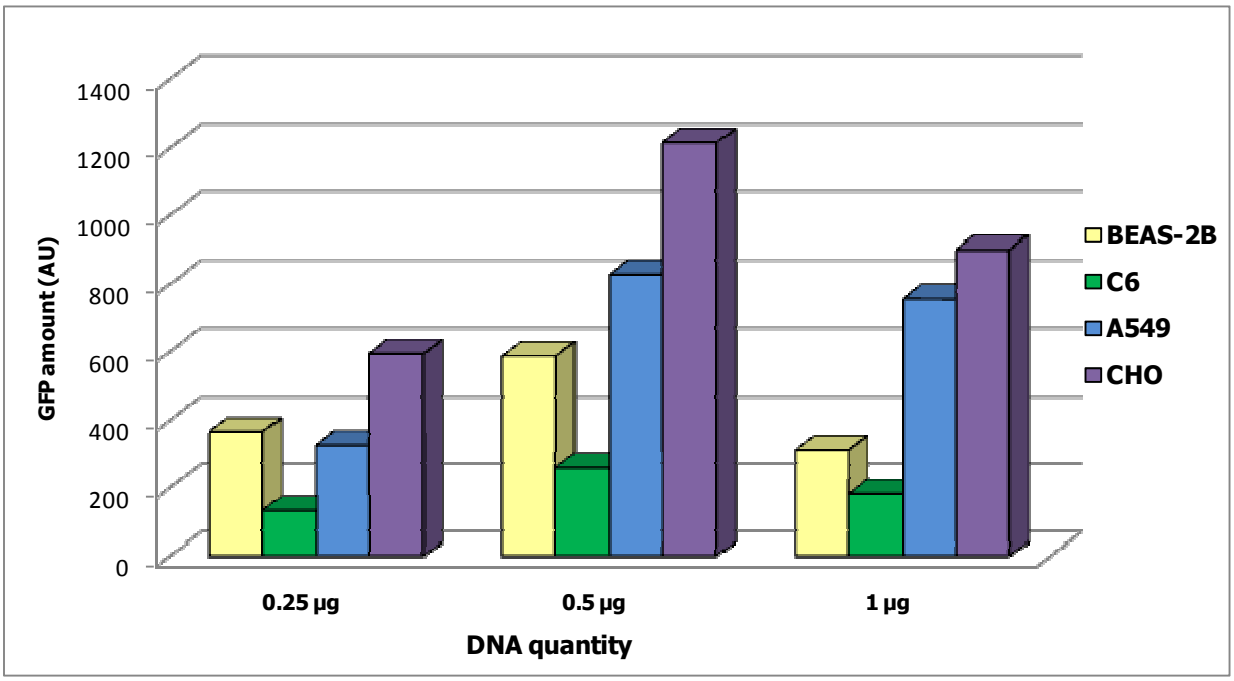


HeLa cells ($1x10^5$) were transfected with 0.5 µg of pLacZ plasmid and 0.5 µL of PolyMag Neo per well in a 96-well plate. Other transfection reagents were used as recommended by manufacturers.

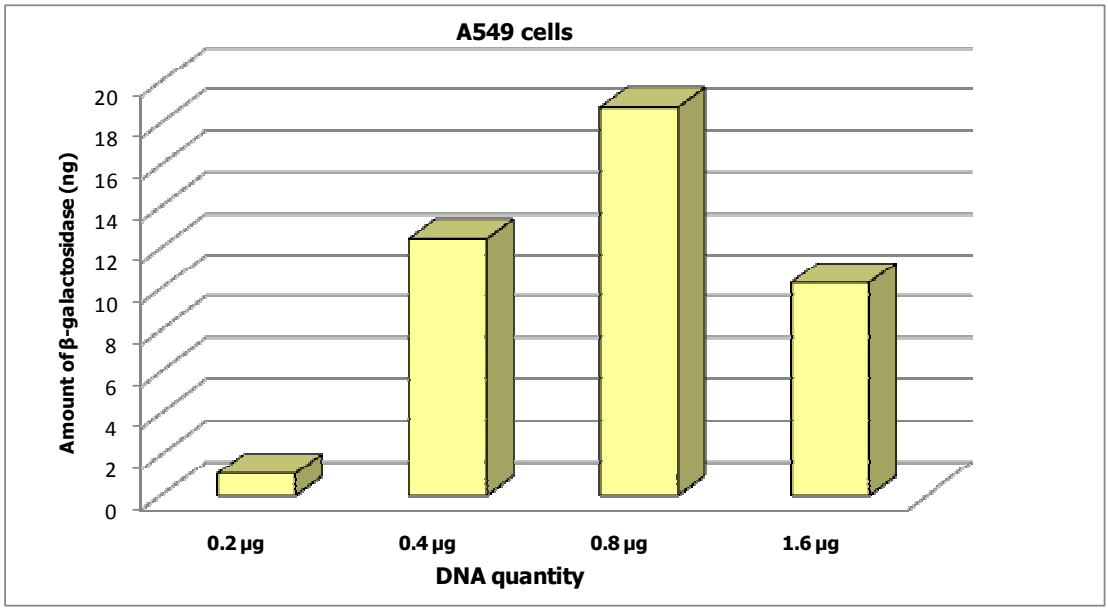
Optimization of DNA Amount



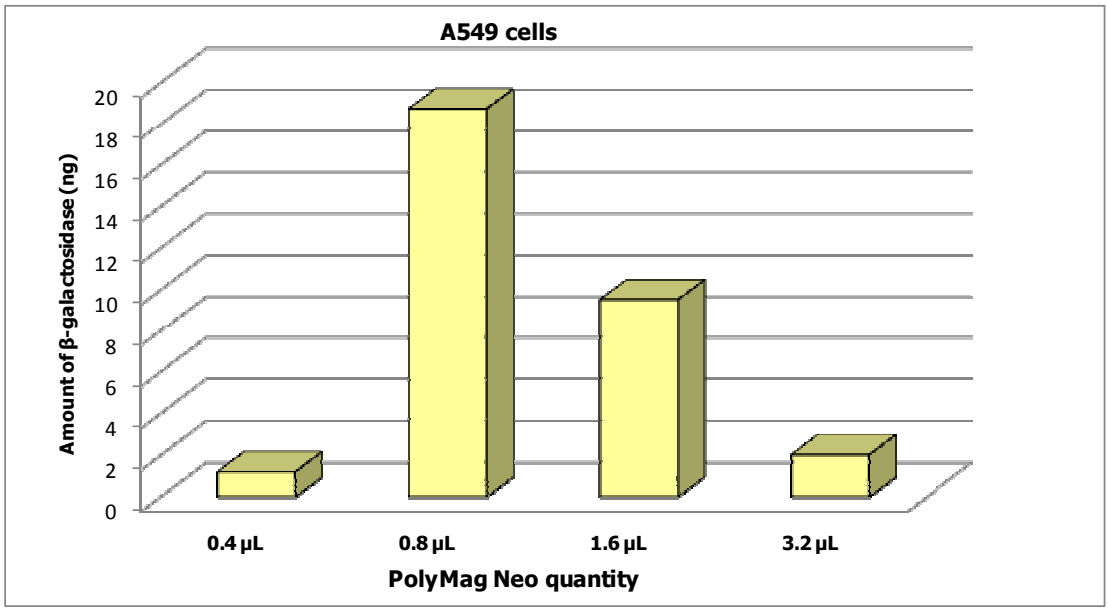




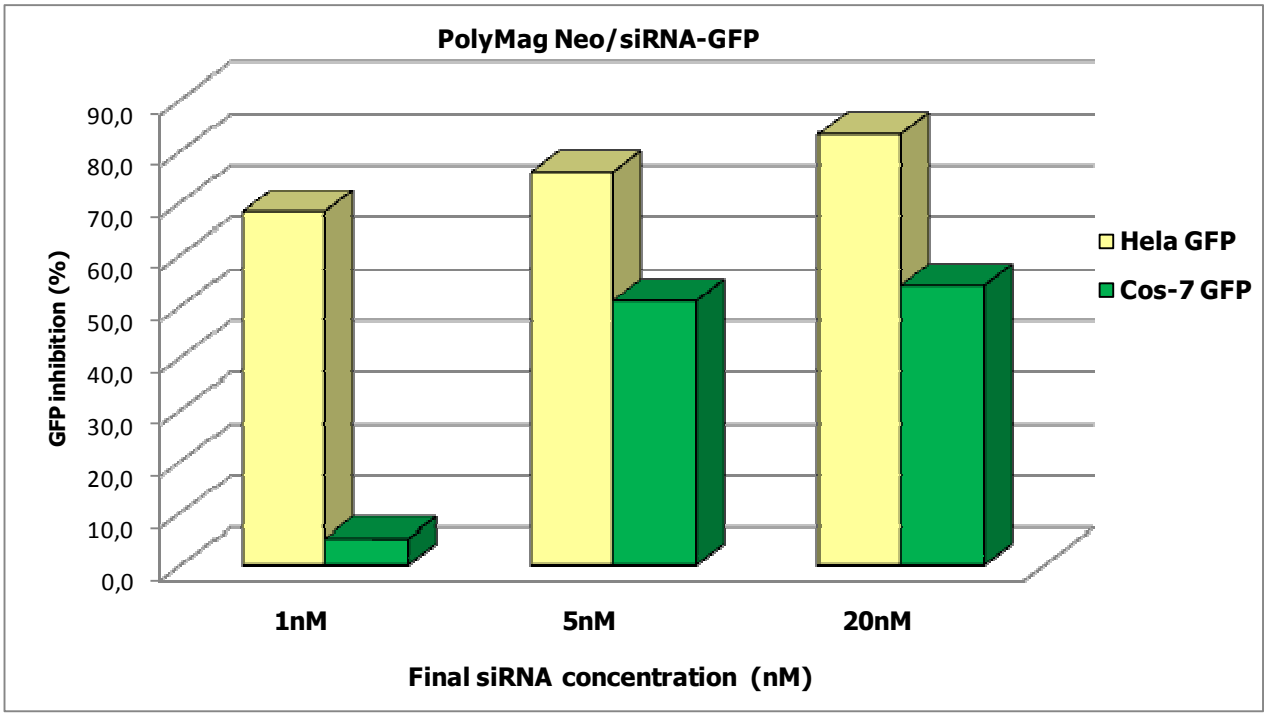
Cells ($1x10^5$) were transfected with 0.25 µg, 0.5 µg and 1 µg / well of pEGFP plasmid DNA in 24-well plates. PolyMag Neo transfections were performed with 0.25 µl / well, 0.5 µl / well and 1 µl / well of reagent. GFP expression level and % of transfected cells were monitored by flow cytometry.

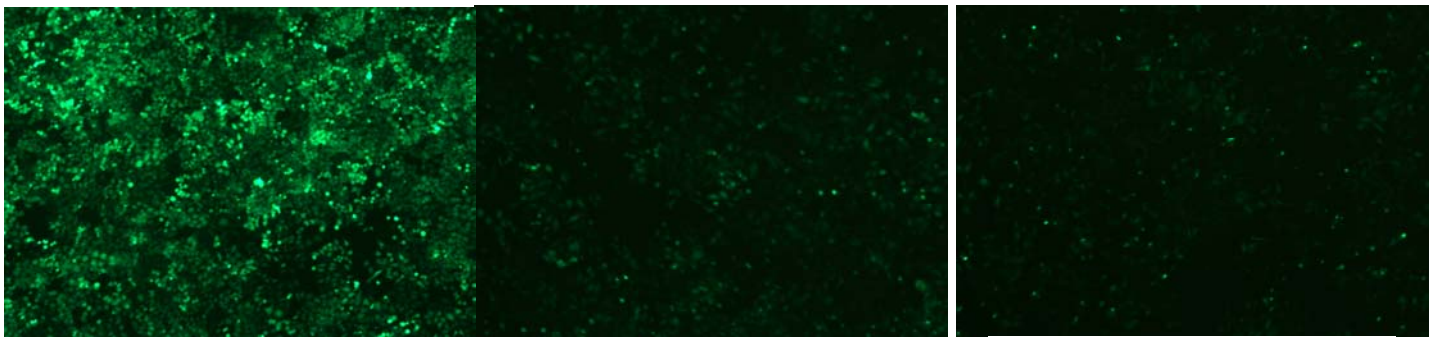


A549 cells ($15x10^3$) were transfected with 0.2 µg, 0.4 µg, 0.8 µg and 1.6 µg / well of pLacZ plasmid and 0.2 µL, 0.4 µL, 0.8 µL and 1.6 µL of PolyMag Neo reagent in 96-well plates.
β-Galactosidase expression was revealed 24 h after transfection using OZ Biosciences' ONPG β-galactosidase assay kit (catalog number G010001). β-galactosidase amount of each well was measured by spectrometry.



A549 cells ($15x10^3$) were transfected with 0.8 µg / well of pLacZ plasmid and 0.4 µL, 0.8 µL, 1.6 µL and 3.2 µL of PolyMag Neo reagent in 96-well plates.
β-Galactosidase expression was revealed 24 h after transfection using OZ Biosciences' ONPG β-galactosidase assay kit (catalog number G010001). β-galactosidase amount for each well was measured by spectrometry.





Hela GFP control | PolyMag Neo/Si-GFP 1nm | PolyMag Neo/Si-GFP 20nm

HeLa and Cos-7 ($5x10^4$ cells/well) cells stably transfected with a GFP plasmid DNA were treated with 1 nM, 5 nM, and 20 nM of siRNA GFP per well in a 24-well plate. Transfections were performed with 1 to 3µL per well of PolyMag Neo transfection reagent. GFP expression was analysed 48 h post-transfection by flow cytometry.