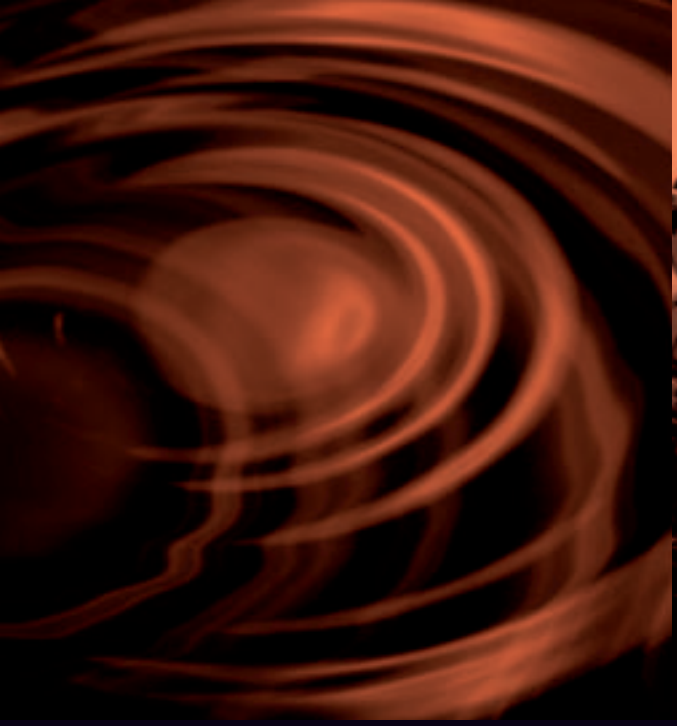


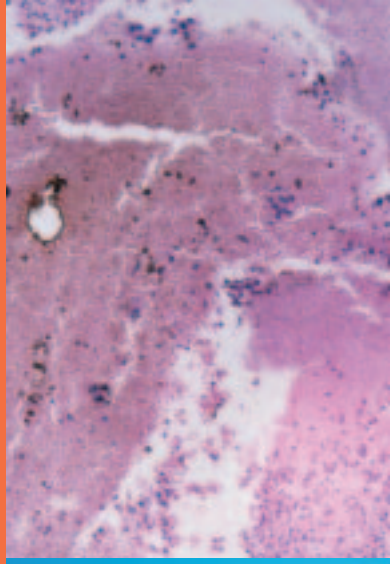
genetransfer

TransFectin™ lipid reagent

BIO-RAD

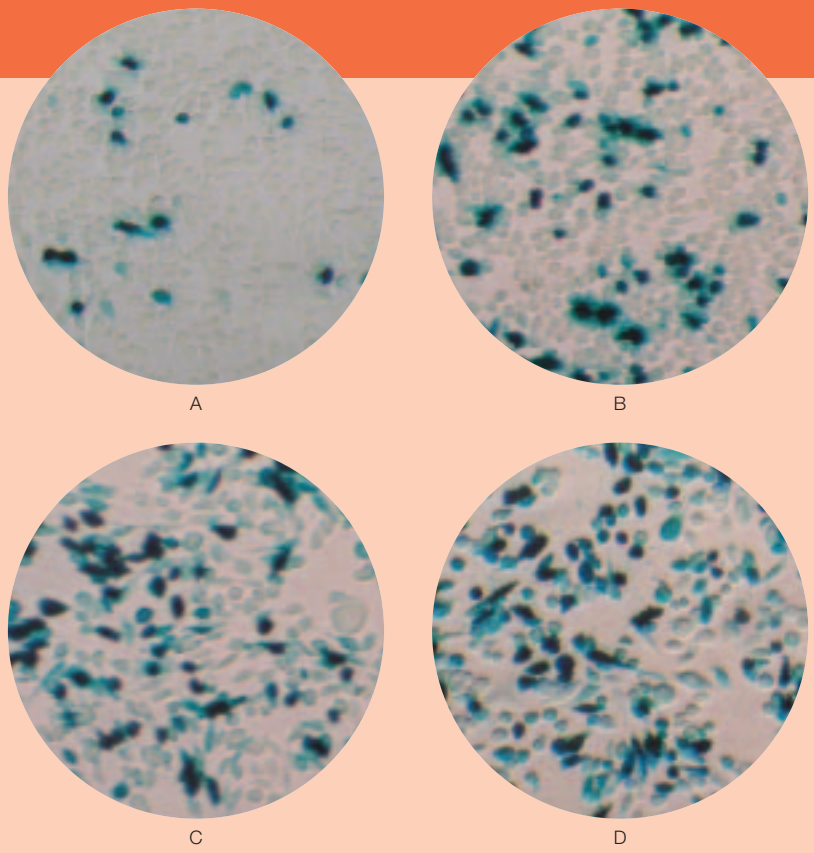
For powerful, efficient transfection

Bio-Rad introduces a powerful new cationic lipid reagent that fits your transfection needs and your budget. TransFectin lipid reagent delivers the highest efficiencies and expression levels over a broad range of cell lines, with reduced cytotoxic effects compared to many other high-efficiency transfection reagents. TransFectin is priced affordably for both occasional and heavy users of lipid-based transfection reagents.



Key TransFectin Features

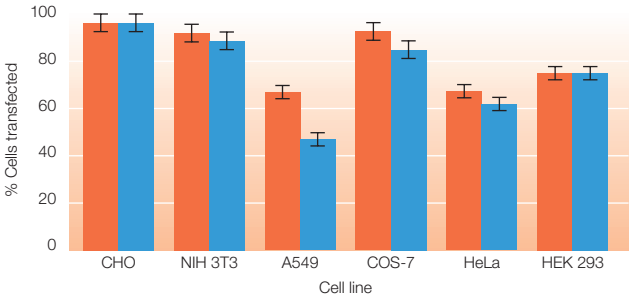
- Yields high-efficiency transfections for a broad range of cells
- Reduced cytotoxicity
- Yields very high expression levels
- Transfection at culture densities from 40% to 90%
- Excellent transfection in the presence of serum-containing medium
- Simple 3-step protocol
- No posttransfection media changes required



CHO cultures after transfection using three commercially available lipid transfection reagents (A, B, C) and TransFectin (D). Cells were stained with X-gal to determine β-galactosidase activity 24 hr after transfection. Blue cells indicate successful transfection.

Powerful Delivery: Greater Efficiency

TransFectin delivers nucleic acids to a broad range of commonly used mammalian cell lines, resulting in the highest efficiencies achievable for many commonly used cell lines. For some cell lines, efficiencies of greater than 90% are routinely achieved.



Comparison of efficiency for TransFectin and a leading lipid transfection reagent. Cells were transfected with pCMV.SPORT-β-gal and stained with X-gal 24 hr after transfection. Efficiency is reported as the percentage of cells transfected in the population.

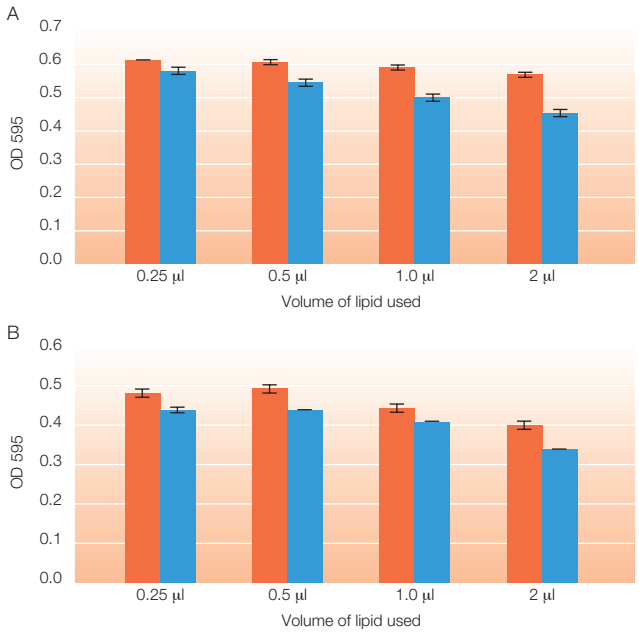
Lower Cytotoxicity: Increased Viability

TransFectin reagent provides exceptional performance with less cytotoxicity than is typically observed in other high-efficiency transfection reagents. Very high efficiencies may be obtained while maintaining the viability of your cells. The combination of high efficiency and lower cytotoxicity results in greater levels of reporter gene expression.

Total protein assays provide an accurate assessment of culture health after transfection. Bradford assays performed on cell cultures 24 hours after transfection indicate that TransFectin treated cultures are typically healthier than cultures exposed to a leading competitor's product. The bar graphs to the right compare cytotoxicity based on protein assays on two commonly used cell lines.

Table 1. Some cell lines successfully transfected with TransFectin lipid reagent.

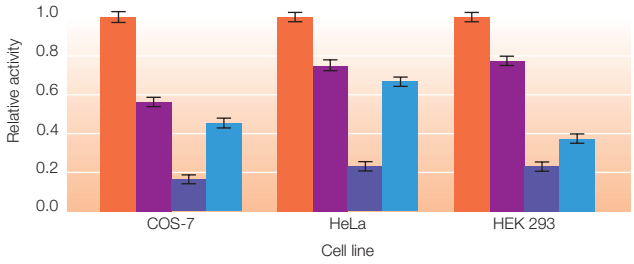
Cell Line	Cell Type
A549	Human lung carcinoma
HeLa	Human cervical carcinoma
COS-7	Kidney
CHO	Chinese hamster ovary
HEK 293	Human embryonic kidney
BHK	Hamster kidney
NIH 3T3	Mouse embryo fibroblast
Vero	Monkey kidney
LNCaP	Human prostate carcinoma
K562	Human bone marrow, CML
Neuro-2a	Mouse neuroblastoma
SH-SY5Y	Human neuroblastoma
NBT-II	Rat bladder carcinoma



COS-7 (A) and HeLa (B) cells were transfected at 90% confluence using TransFectin (■) and a leading cationic lipid reagent (■) in a single 24-well culture vessel. Total protein was determined using the Bradford reagent 24 hr after transfection. Higher OD values correlate with more protein, allowing an assessment of the relative toxicity of the lipids.

High Activity: Greater Expression

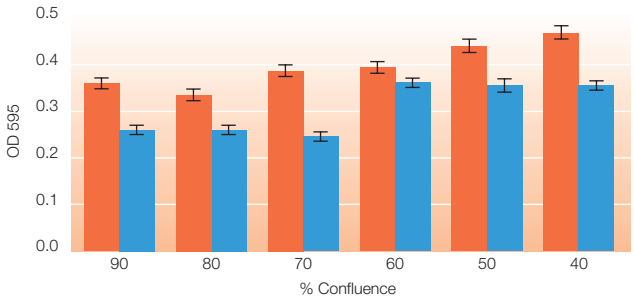
Attain high levels of transient protein expression when using TransFectin. Use less reagent per experiment than is needed for many other products, while still achieving excellent performance. TransFectin quickly and efficiently delivers your plasmid, with a simple three-step method and no media changes.



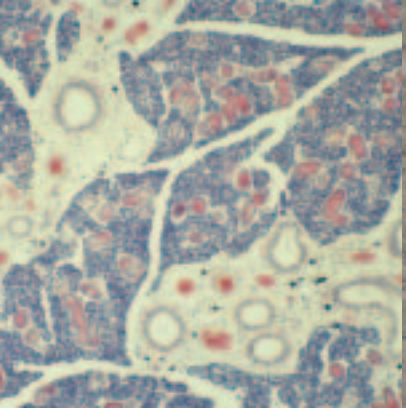
Cells were transfected with pCMV.SPORT-β-gal using three commercially available lipofection reagents and TransFectin (■). Cell cultures were assayed using ONPG 24 hr after transfection and OD readings taken to quantitate β-galactosidase expression.

Flexible, Scalable, Easy to Use

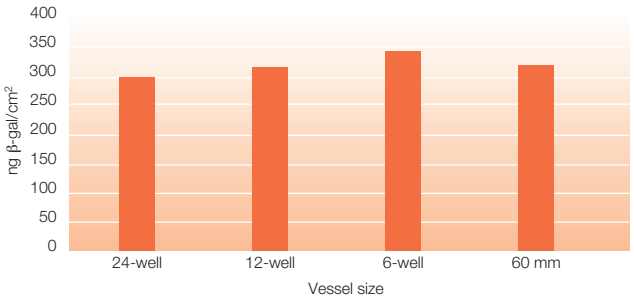
The TransFectin protocol allows you to achieve high efficiencies across a wide range of culture confluence, while maintaining a high level of consistency and performance. Perform transfections with or without serum-containing medium at a culture confluence between 40% and 90%.



COS-7 (■) and HeLa (■) cells were transfected at confluences between 40% and 90% with pCMV.SPORT-β-gal. Cell cultures were assayed using ONPG 24 hr after transfection to quantitate expression.



Achieve consistent levels of expression with a variety of cell culture vessels. The graph below shows the amount of expression achieved using different-sized culture vessels. Table 2 provides approximate reagent requirements for the most popular vessels. For unlisted vessels, simply determine the change in surface area and linearly scale the reagent volume.



A comparison of β-galactosidase expression in different-sized culture vessels. HeLa cells were transfected with pCMV.SPORT-β-gal at 70% confluence, in the presence of serum, using TransFectin. Cells were assayed for β-galactosidase using ONPG 24 hr after transfection to quantitate expression. Results show that reporter gene activity is scalable with vessel size when using TransFectin.

Table 2. Suggested reagent quantities for different sizes of plates/wells.

Culture Vessel Size	Surface Area (cm^2)	Volume of Plating Medium (ml)	Plasmid DNA (ng)	Volume of DNA-Lipid Complexes (µl)	TransFectin Reagent (µl)
96-well	0.32	0.1	50–200	20	0.1–0.6
24-well	1.9	0.5	0.25–1.0	100	0.5–2.0
12-well	3.8	1.0	0.50–2.0	200	1.0–4.0
6-well/35 mm	9.2	2.0	1.0–4.0	500	2.5–10
60 mm	21	5.0	2.0–8.0	1,000	5.0–20
100 mm	60	10.0	12–36	3,000	15–60

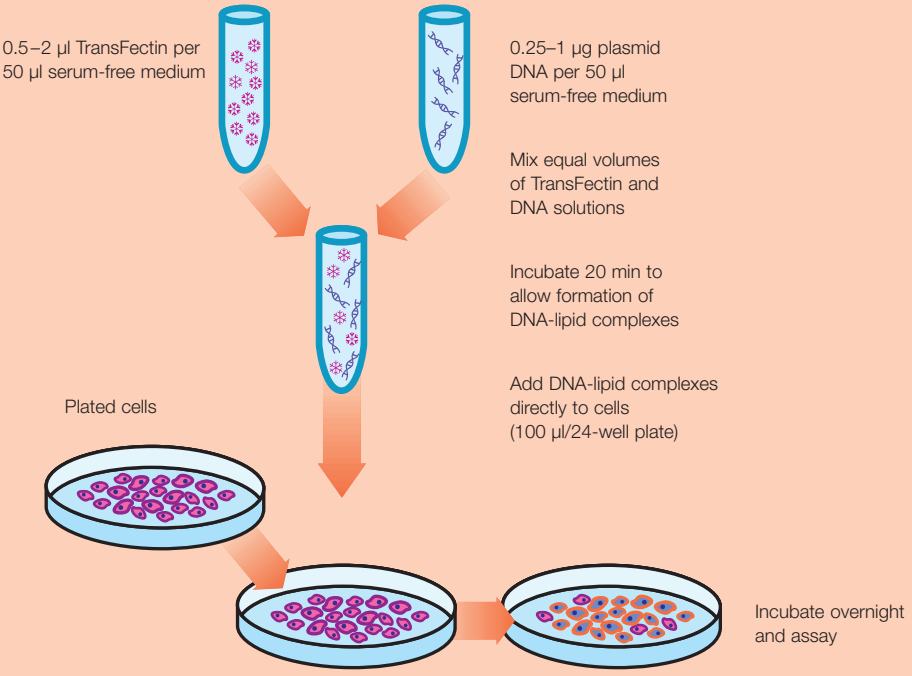
Protocols Speed Optimization

Although a broad range of cell types may be successfully transformed using TransFectin, different experimental conditions can affect transfection efficiency, even in closely related cell lines. Bio-Rad provides recommended protocols for the most popular cell lines. These protocols are available on the Web at **www.bio-rad.com/genetransfer/**

Simple, Efficient Transfection

TransFectin is provided in a convenient, simple-to-use format. Simply dilute TransFectin and nucleic acid in medium, mix, incubate, and add to cells. There is no need for a change of medium after transfection. Simply assay for expression 24 hours after transfection.

The three-step TransFectin method (24-well plate).



Specifications

Chemical composition	Proprietary cationic lipid and co-lipid (1,2-dioleoyl-*sn*-glycero-3-phosphoethanolamine)
Concentration	1.5 mg/ml total lipid in sterile water
Shipping and storage conditions	4°C

Ordering Information

Catalog #	Description
170-3350	TransFectin Reagent, 0.5 ml
170-3351	TransFectin Reagent, 1.0 ml
170-3352	TransFectin Reagent, 5 x 1.0 ml

Related Products and Information

XenoWorks™ System

XenoWorks is a complete line of instrumentation designed for the rigorous demands of the latest microinjection and micromanipulation techniques. The system features ergonomic height-adjustable joystick controls, micromanipulator position memories, and variable movement radius. Microinjection, whether the delivery of DNA solution to a zygote's pronucleus or insertion of embryonic stem cells into a blastocyst, can be achieved with a level of control previously unattainable with conventional instruments.

Biolistics

Biolistic technology, or particle bombardment, is a direct physical method of delivering nucleic acids or other molecules into cells. The Helios® gene gun and the PDS-1000/He™ systems provide easy-to-use, rapid, versatile gene delivery that is independent of cell type, requires small amounts of DNA, and requires few cells. This technology can be applied in vivo or in vitro to the widest range of targets, including cell cultures, tissues, organs, plants, and animals. These instruments effectively use a helium pulse to accelerate high-density gold or tungsten particles, coated with nucleic acids, directly into the target cells.

Electroporation

Electroporation is a highly efficient technique for introducing nucleic acids, proteins, and other molecules into a wide variety of cells. The Gene Pulser Xcell™ electroporator is a flexible, modular system that delivers exponential or square-wave pulses optimal for your cell type. With an intuitive interface, fully manual setting, preset programs, and "optimize" capability, the Gene Pulser Xcell electroporator provides power and reliability. For more routine high-throughput bacterial or fungal applications, the MicroPulser™ electroporator provides simple, efficient, reproducible delivery.

Competent Cells

The most commonly used competent cells are genetically modified *E. coli* strains. While these cells have genetic characteristics that support routine cloning applications, they do not naturally take up DNA. These cells can be made competent by either chemical/heat shock treatment or by electroporation methods. Bio-Rad's EP-Max™ electro-competent and C-Max™ chemi-competent cells provide researchers with the highest-efficiency competent cells. EP-Max cells complement Bio-Rad's high-quality electroporation cuvettes and electroporation instruments, ensuring both consistency and high efficiency in bacterial transformations.

BIO-RAD

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The Netherlands *0318-540666* ***New Zealand*** *64 9 415 2280* ***Norway*** *23 38 41 30* ***Poland*** *+ 48 22 331 99 99* ***Portugal*** *351-21-472-7700*
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