OMNIfect Transfection Reagent

OTR1001, OTR1002, OTR1003, OTR1004, OTR1005, OTR1006

OMNIfect™ transfection reagent is an easy-to-use, polymer-based transfection reagent providing high efficiency transfection of plasmid DNA coupled with low cytotoxicity across a broad range of cells.

- Efficient delivery - high transfection efficiency with or without serum
- Low cytotoxicity – gentle on sensitive cell lines
- Broad range of cells tested – including neuronal, stem and suspension cells
- Easy-to-use protocols

OMNIfect transfection reagent has been proven to successfully transfect a broad range of cell types including suspension cells. OMNIfect transfection reagent benchmarks favorably against the market leaders.

Shipping and Storage

OMNIfect is supplied in 0.3 ml, 0.75 ml, 1 ml, 2x0.75 ml, 5x1 ml and 15x1 ml sizes. OMNIfect is shipped on wet ice Store at 4°C for up to 12 months. Do not freeze.

Quality control

For each lot the structural identity is confirmed and functional activity test by transfection of a luciferase reporter plasmid in Cos-1 cells. At 48 hours after transfection reporter activity is visible in >70% of the cells.

Transfection Protocols

OMNIfect transfection reagent for plasmid DNA transfection

Use the following procedure to transfect plasmid DNA into mammalian cells in a 24-well format. For other plate formats, scale up or down the amounts of DNA and OMNIfect reagent proportionally to the total transfection volume (Table 1)

A. Adherent cells: One day before transfection, plate 80,000 cells/well in 500 µl of growth medium without antibiotics so that cells will be 70–95% confluent at the time of transfection.

B. Suspension cells: On the same day of transfection just prior to preparing transfection complex plate 160,000/well cells in 500 µl of growth medium without antibiotics.

Transfection complex preparation:

Volumes and amounts are for each well to be transfected.

1. Plasmid DNA preparation: Dilute 0.5 µg of plasmid DNA in a microfuge tube containing Opti-MEM® I Reduced Serum Media*** up to a total volume of 25 µl.
2. OMNIfect reagent preparation: In a separate microfuge tube, add 1 µL of OMNIfect into 24 µl Opti-MEM® I Reduced Serum Media*** for a total volume of 25 µl.
3. Final transfection complex: Transfer the diluted DNA solution to the diluted OMNIfect reagent (total volume = 50 µl). Mix gently and incubate at room temperature for 10 minutes.

Adding transfection complex to wells:

1. Add the 50 µl of transfection complex to each well containing cells and medium.
2. Incubate cells at 37°C in a CO_2 incubator for 24-48 hours.
3. After 24-48 hours of incubation, assay cells for gene activity.

****serum-free DMEM medium can also be used.*

Figure 1: Transfection protocol for 24 well plates (volumes indicated are per well). To transfect the entire plate multiply all volumes and DNA amount by 24.

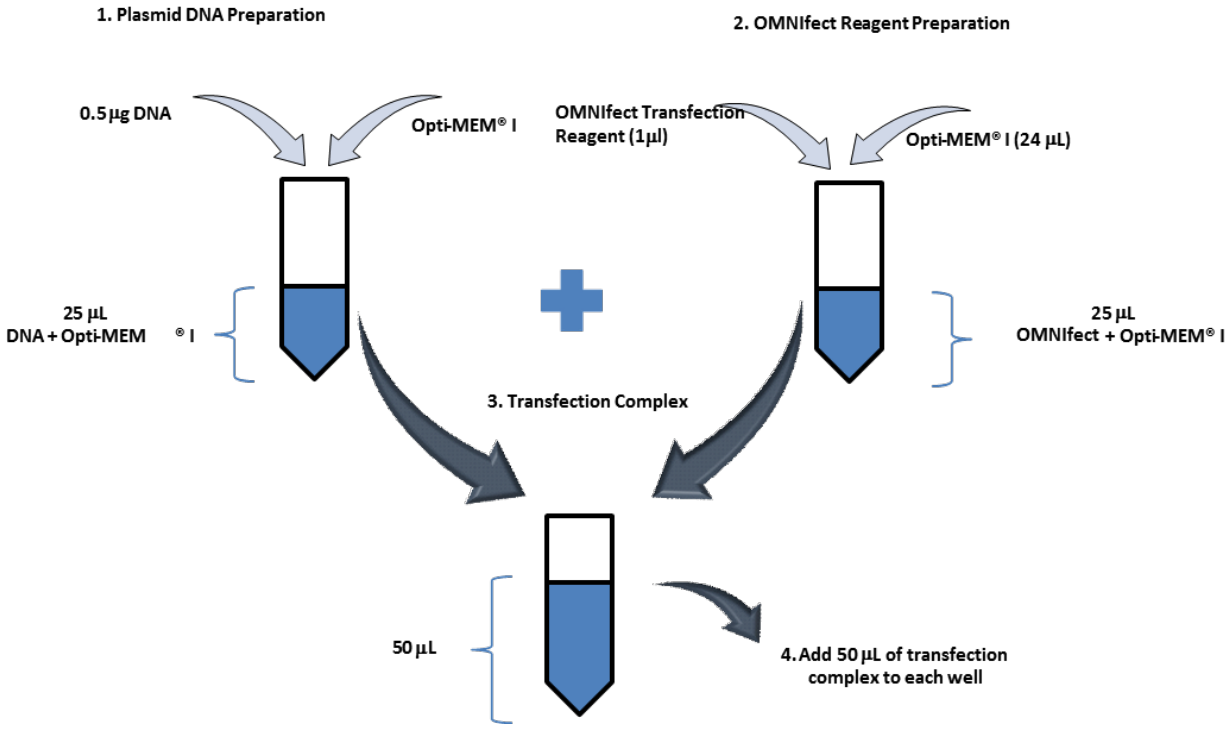

Table 1: Suggested amounts of DNA, medium and OMNIfect for transfection of plasmid DNA into adherent and suspension cells.

Tissue Culture Plates	Surface Area per Well (cm^2)	µl Plating Medium per Well	µg Plasmid DNA per Well	µl OMNIfect per Well	µl Transfection Complex per Well†
6- well	9	2000	2 (in 100 µl Opti-MEM® I)	4 (in 100 µl Opti-MEM® I)	200
12-well	4	1000	1 (in 50 µl Opti-MEM® I)	2 (in 50 µl Opti-MEM® I)	100
24-well	2	500	0.5 (in 25 µl Opti-MEM® I)	1 (in 25 µl Opti-MEM® I)	50
96-well	0.3	200	0.1 (in 10 µl Opti-MEM® I)	0.2 (in 10 µl Opti-MEM® I)	10-20

† Total volume of the transfection complex is made up of equal parts of DNA solution and OMNIfect solution.

Optimizing transfection:

- It is important to optimize transfection conditions to obtain the highest transfection efficiency with lowest toxicity for various cell types.
- We recommend starting with the volumes and concentrations outlined in Table 1 for different plate formats.
- You can optimize your transfection efficiency by increasing or decreasing the volume of transfection complex that is added to each plate.
- When varying the plasmid DNA concentration, keep DNA mass to OMNIfect volume proportional (1 µg DNA:2 µl OMNIfect).
- To further optimize your transfection efficiency and lower cytotoxicity, you can vary DNA (µg): OMNIfect reagent (µl) ratios from 1:1.5 to 1:2.5.

Note: If transfection conditions result in unacceptable cytotoxicity in a particular cell line the following modifications are recommended:

1. Decrease the volume of transfection complex that is added to each well.
2. Higher transfection efficiencies are normally achieved if the transfection medium is not removed. However, if toxicity is a problem, aspirate the transfection complex after 6 hours of transfection and replace with fresh growth medium.
3. Increase the cell density in your transfection.
4. Assay cells for gene activity 24 hours following the addition of transfection complex to cells.

Cell lines successfully transfected with OMNIfect

OMNIfect Transfection Reagent has been proven to transfect a broad range of cell types including both adherent and suspension cells with superior efficiency (Figure 2 and Table 2). When tested against comparative transfection reagents from competitors, OMNIfect transfection reagent benchmarks favorably against the market leaders.

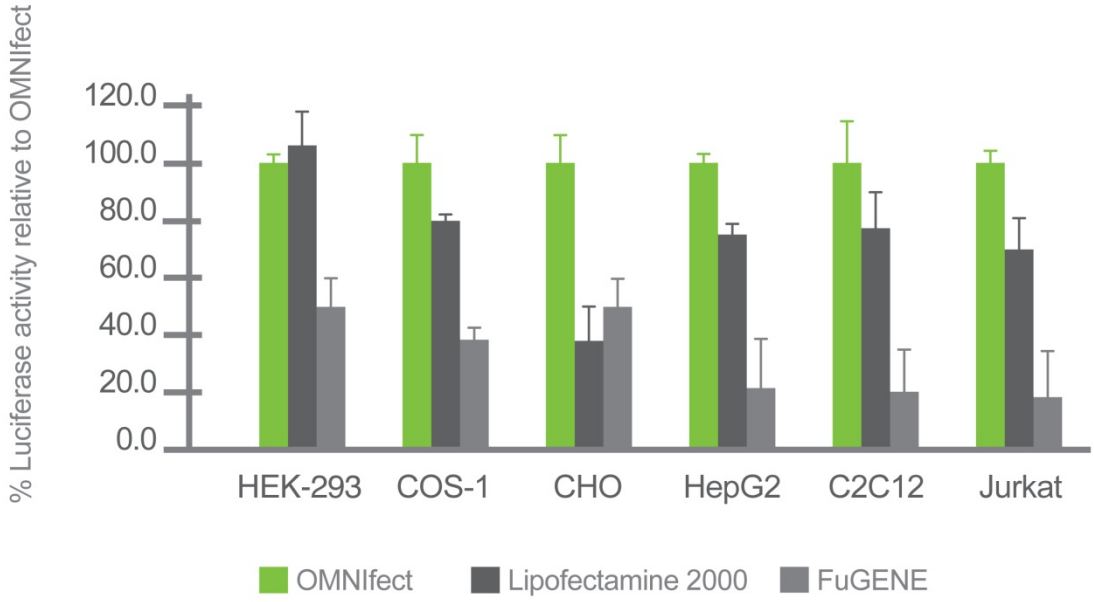

Figure 2: OMNIfect performs well against competitors' products and shows overall less cytotoxicity. HEK-293, COS-1, HepG2, C2C12, CHO and Jurkat cells were seeded in 12-well plates and transfected with 1mg luciferase plasmid according to the manufactures protocols. At 48 hours after transfection luciferase expression was quantified (relative light units/mg total protein) from cell lysates. Data are presented as values (+/- SEM) relative to OMNIfect transfection.

Table 2: Various cell lines tested successfully with OMNIfect
The table below lists the cell lines in which OMNIfect has been shown to produce high transfection efficiency.

Cell line	Cell type	Species
HeLa	Cervical carcinoma	Human
A549	Lung carcinoma	Human
C2C12	Myoblast	Murine
SCCVII	Squamous cell carcinoma	Murine
Renca	Embryonic kidney	Murine
HEK293	Ovarian carcinoma	Human
ID8	Ovarian carcinoma	Murine
Raw 264.7	Macrophage	Human
CHO	Ovary	Hamster
COS-1	Kidney	Monkey
4T-1	Mammary carcinoma	Murine
HepG2	Liver Hepatocellular carcinoma	Human
Jurkat	Leukemia T lymphocyte	Human
K562	Bone marrow	Human