HighGene Transfection Reagent

Code：RM09014

Size：1000 μl/10×1000 μl

◆ Product Overview

HighGene Transfection Reagent is a novel cationic polymer nanomaterial transfection reagent. This reagent efficiently delivers exogenous plasmid DNA or mRNA into most adherent and suspension-growing cells, enabling high-level expression of foreign genes. The product offers the following advantages:(1)High transfection efficiency: suitable for various cell lines, including 293T, HeLa, Huh7, U87 MG, BT-594, HepG2, HCT116, Vero, A549, NIH/3T3, and H9C2; (2)Low cytotoxicity: After transfection, cell viability remains largely unaffected;(3)Operation is convenient: The transfection experiment can be completed in just 15 minutes;(4)Product application: Suitable for plasmid DNA transfection/co-transfection, virus packaging, mRNA transfection.

◆ Product Specifications

Catalog number	Name	Size	Storage
RM09014	HighGene Transfection Reagent	1000 μl/10×1000 μl	2~8℃

◆ Product Application

Plasmid DNA transfection / co-transfection，virus packaging，mRNA transfection

◆ Storage

Ice pack transportation;Store at 2-8℃ for two years.

◆ Experimental Procedure

Cell transient transfection operation procedure (taking 24-well plates as an example)

1. Cell inoculation

One day before transfection, the cells were digested with trypsin and seeded onto the plate (in a serum-containing medium without antibiotics). The cell density in the wells should be 70% to 90% at the time of transfection, and the cell viability during seeding should be greater than 90%.

2. Preparation of HighGene Transfection Reagent/Plasmid Complex

（1）Before using the transfection reagent, invert it several times to mix well and perform a brief centrifugation.

（2）First, add 50 μl of Opti-MEM or serum-free medium to a micro-aerospirit sterilized centrifuge tube, then add 0.5 μg of the plasmid or mRNA, and gently vortex to mix. Next, add 1 μl of the transfection reagent,

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gently vortex to mix again, and incubate at room temperature for 5 to 10 minutes.

3. Transfection

（1）Add 50 μl of the transfection complex to one well of a 24-well plate, and gently shake the cell culture plate to ensure uniform dispersion of the mixture.

（2）Transfection for 24 to 72 hours. For some relatively sensitive cells, if fresh complete medium needs to be replaced after transfection to reduce cytotoxicity, the replacement should be carried out 8 hours after the addition of the transfection complex.

（3）Collect the cells and conduct subsequent experiments. These include RT-qPCR, Western-Blot, ELISA, luciferase reporter gene, etc.

4. Attached Table

1. The recommended number of cells to be inoculated one day before transfection and the volume of the culture medium (per well) for the commonly used cell culture devices.

Cell culture system	Number of inoculated cells	Volume of cell culture medium
96-well plates	$1\text{-}3\times10^4$	0.1 ml
24-well plates	$0.5\text{-}2\times10^5$	0.5 ml
12-well plates	$2\text{-}3\times10^5$	1 ml
6-well plates	$0.5\text{-}1\times10^6$	2 ml
60 mm cell culture dish	$1\text{-}2\times10^6$	5 ml
100 mm cell culture dish	$2\text{-}4\times10^6$	10 ml

2. When conducting cell transfection using common cell culture devices, the recommended initial dosage (per well) for each component is as follows.

Cell culture system	Plasmid/mRNA(μg)	Transfection reagent（μl）	Opti-MEM or serum-free medium（μl）
96-well plates	0.1	0.2	10
24-well plates	0.5	1	50
12-well plates	1	2	100
6-well plates	2	4	200
60 mm cell culture dish	5	10	500
100 mm cell culture dish	10	20	1000

Note: ① The transfection procedure and dosage for mRNA are the same as those for plasmid DNA

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transfection; ②The above transfection system scheme is for reference only. It needs to be reasonably optimized and adjusted according to the specific cell type and other experimental conditions.

◆ **Consideration**

1. The cells before transfection should be in a good growth state, such as in the logarithmic growth phase, and there should be no bacterial, fungal or mycoplasma contamination. It is recommended to conduct the transfection experiment when the cell density is 70-90% about 24 hours after cell inoculation. If the cells are recently thawed from liquid nitrogen storage, it is advisable to subculture the cells at least twice before the formal transfection experiment.

2. Using high-quality plasmids is beneficial for achieving a higher transfection efficiency. It is recommended to extract the plasmids using the non-toxic plasmid extraction kit. The A260/A280 ratio should be 1.8 to 2.0, and the plasmid concentration should be at least 500 ng/μl.

3. In the cell transfection experiment, it is necessary to make reasonable adjustments to the dosage ratio of the plasmid and the transfection reagent according to the specific cell type and other experimental conditions. Generally, the ratio of the plasmid quantity (μg) to the transfection reagent dosage (μl) is within the range of 1:1 to 1:4. It is recommended to use an initial transfection ratio of 1:2.

4. This product is strictly for scientific research purposes only and must not be used for clinical diagnosis or treatment.

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