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293Transfer

Product Number: TR1804

Shipping and Storage

This product is transported at room temperature and stored for a long time at 4℃, with a validity period of 12 months.

This product is safe to use and no biological or chemical toxicity has been found. If accidentally contaminated, rinse with clean water.

Description

293Transfer is a nano polymer transfection reagent developed and synthesized by our company. This reagent is synthesized using nanotechnology and is the latest generation of transfection reagents. Due to the application of nanotechnology, the transfection efficiency of 293Transfer in HEK293T cells can reach over 95%, while also exhibiting low cytotoxicity.

Note

1. Antibiotics can be added to this product during the transfection process, and the addition of antibiotics does not affect the transfection efficiency and toxicity.
2. If Trizol is needed to extract RNA after transfection, it is recommended to change the solution 6 hours after transfection.

Protocol (Taking a 6-hole plate as an example)

1. Cell laying one day in advance

Plant the cells on a 6-well plate one day in advance, with a cell density of around 50% during transfection.

2. Transfection process

2.1. Dilute 5ug of DNA with 50ul of serum-free diluent, mix well, and prepare a DNA diluent.

Note: It is recommended to use OPTI-MEM or serum-free DMEM for serum free diluents.

2.2. Dilute 5ul of 293Transfer with 50ul of serum-free diluent, mix well, and prepare 293Transfer diluent. Let it stand at room temperature for 5 minutes.

2.3. Add 293Transfer diluent to DNA diluent separately, mix thoroughly (shake with an oscillator or blow and aspirate more than 10 times with a sampler), and let it stand at room temperature for 15-30 minutes. The preparation of transfection complexes has been completed.

Note: A 30 minute soak time is more efficient than 15 minutes for transfection.

2.4. Add the transfection complex to the culture container containing cells and complete culture medium, and gently mix well.

Note: 1)For this reagent, using serum containing full culture medium can help improve transfection efficiency.

2)Antibiotics can be added to the complete culture medium.

2.5. After 4-6 hours of cultivation, replace the culture medium and continue to cultivate for 24-48 hours.

Note: If the cells have no toxicity or other adverse conditions, there is no need to change the culture medium 4-6 hours after transfection.

Transfection dosage in different cell culture containers

Cell culture container	Surface area (cm^2)	Ratio of surface area to 24 well	The amount of DNA added per well*	Volume of DNA dilution solution per well	293 Transfer usage per hole*	293Transfer diluent volume, total amount of culture medium per well	Total amount of culture medium per well
96-well	0.3	0.2	0.25μg	5μl	0.25μl	5μl	100μl
48-well	0.7	0.4	0.5μg	10μl	0.5μl	10μl	200μl
24-well	1.9	1	1μg	25μl	1μl	25μl	500μl
12-well	3.8	2	2μg	25μl	2μl	25μl	1ml

6-well/35-mm	10	5	5μg	50μl	5μl	50μl	2ml
60 mm/T25 flask	21	10	10μg	125μl	10μl	125μl	5ml
100 mm/T75 flask	58	30	25μg	500μl	25μl	500μl	15ml

Note: If used for simultaneous co transfection of multiple plasmids, the amount of DNA used refers to the total amount of each plasmid used. In order to achieve higher transfection efficiency, it is recommended to increase the amount of DNA and transfection reagents by 2-4 times simultaneously.

Optimization

Due to the ratio of DNA to transfection reagent dosage being an important factor determining transfection efficiency, as well as the differences in plasmid quantification errors, plasmid purification levels, and cell states among different laboratories, there are differences in the optimal experimental conditions for different cells and laboratories. To achieve the highest transfection efficiency, it is recommended to optimize the initial application first. After determining the optimal conditions, the experimental results will be very stable. The following table lists the optimization schemes in 6-well for reference.

6-well optimization plan

	1	2	3
The amount of DNA per well	1.5μg	3μg	5μg
Dosage of transfection test per well	1.5μl	3μl	5μl

According to the optimized conditions of the pre experiment, apply it to other culture containers in proportion to the surface area of the culture vessel.

Common problems and solutions

Problem	Reason	Solution
Low efficiency after 24 hours of transfection	Cell density too high	Suggest reducing the confluence to 30-50% during transfection and extending the observation time after transfection
	Insufficient cultivation time after transfection	Suggest reducing the cell confluence during transfection and observing the results for 48 hours or even longer
	Low DNA purity	It is recommended to use OD260/OD280 at around 1.8, without protein and RNA, and without endotoxin DNA
	Poor ratio of DNA to transfection reagents	Suggest pre experimental optimization
	Dilution solution containing serum or protein	Suggest using OPTI-MEM or serum-free DMEM dilution
Cytotoxicity	The plasmid expression system is highly toxic	Suggest using other reliable plasmids as positive controls to compare transfection results
	Cell density too high	Suggest reducing the number of cells
	Poor ratio of DNA to transfection reagents	Suggest pre experimental optimization
	Cellular contamination	Suggest thoroughly cleaning all cell culture related products

Other related reagents

TR1000: Transfect small fragments of RNA (siRNA, miRNA, mimic, inhibitor, etc.) into animal cells.

TR1812, TR1811: Animal in vivo transfection of RNA and DNA.

TR3011: Virus infection enhancement series reagents can enhance the infection efficiency of lentiviruses, adenoviruses,

adeno-associated viruses, and retroviruses.