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EZ-LV Transduction kit

Product Number: TR3012

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

EZ-LV Transmission Kit is an enhancer developed and synthesized by our company for chronic viral infections, which is synthesized using nanotechnology. The EZ-LV Transmission kit enriches the virus on the cell surface through physical interactions to enhance infection efficiency. Due to the application of nanotechnology, the EZ-LV Transmission kit significantly improves the efficiency of lentiviral infection while minimizing cell toxicity and not interfering with cellular physiological functions.

Note

1. After using the EZ-LV Transmission kit for enhancement, the cell fusion degree during infection has an impact on the infection effect. It is recommended to conduct infection experiments when the cell fusion degree is around 50% (adjust the suspension cells as needed, do not use too high cell density).
2. Before using the EZ-LV Transmission kit enhancer, the optimal MOI value (Multiplicity of Infection) for infected cells should be determined, which refers to the average number of viruses infected per cell. Generally, the higher the MOI, the more viruses integrate into chromosomes and the higher the expression level of the target protein. For cells with active division, such as Hela and 293 cells, when MOI=1-3, more than 80% of cells express the target gene. For non dividing cells, such as primary cells, the infection efficiency is low, and MOI gradient experiments are needed to determine the optimal MOI value for infected cells. The application of enhancers on the basis of the optimal MOI value has a better effect.
3. The dilution solution for EZ-LV Transmission kit and virus is a serum-free liquid that is consistent with the cell base culture medium, such as serum-free DMEM or 1640.
4. The relationship between EZ-LV Transmission kit and infection efficiency. Under other fixed conditions, the dosage of enhancer is within the range of 1-3 times the recommended dosage. The larger the dosage, the higher the infection efficiency.

Protocol

1. Cell laying one day in advance

Plant cells one day in advance, with a fusion rate of around 50% during infection (adjust suspension cells as needed, do not use excessively high cell density).

2. Infection experiment

2.1. Dilute the EZ-LV Transmission kit with serum-free diluent (see table below for dosage), mix thoroughly, and prepare an enhancer diluent.

2.2. Dilute the virus concentrate with serum-free diluent (see table below for dosage), mix thoroughly, and prepare the virus diluent.

Note: Due to different virus concentrations, the specific amount of virus concentrate may be based on conventional dosage. It is recommended to conduct gradient experiments in combination with enhancers.

2.3. Mix the diluent of the enhancer and virus thoroughly, and let it stand at 4℃ for 15 minutes.

2.4. The above mixture is added to cells containing complete culture medium, and the cell state is observed after 8 hours of cultivation at 37℃. If there is no significant change, do not change the culture medium. After continuing cultivation for 24 hours, replace the culture medium regularly. Due to the slow infection of lentivirus, the results are generally observed 96 hours after infection.

Table 1 Recommended dosages for different cell culture containers

Cell culture container	Surface area (cm^2)	Ratio of surface area to 24 well	Quantity of EZ-LV Transmission Kit per Hole	Dosage of diluent per well	Total amount of culture medium per well
96-well	0.3	0.2	0.5-1.5μl	10μl	100μl
48-well	0.7	0.4	1-3μl	15μl	200μl
24-well	1.9	1	2.5-7.5μl	25μl	500μl
12-well	3.8	2	5-15μl	25μl	1ml
6-well/35-mm	10	5	10-30μl	50μl	2ml
60 mm/T25 flask	21	10	25-75μl	125μl	5ml
100 mm	58	30	75-225μl	250μl	15ml

2.5. Taking one well in a 6-well plate as an example, explain the amount of each liquid component used:

Enhanced reagents	Serum-free diluent
10μl*	50μl

Mix

Concentrated virus	Serum-free diluent
10μl**	50μl

Complete culture medium per well
2000μl-60μl-60μl=1880μl

***Can be increased or decreased separately based on factors such as toxicity and efficiency**

****The amount used here is for illustration only, and the specific amount can be determined based on the regular amount at your discretion**

Common problems and solutions

Problem	Reason	Solution
The effect is not significant after using enhancers	Low virus concentration, insufficient dosage	Increase virus usage
	Excessive cell density	Reduce cell density
	The enhancement is not significant	Increase the dosage of enhancer by 1-3 times
Cytotoxicity	Excessive dosage of enhancer	Reduce the dosage of enhancers appropriately
	Excessive virus volume	Reduce virus usage appropriately
	Less cell culture media used	Increase the amount of culture medium or replace the culture medium
Sedimentation occurs in the mixed solution	Analysis of virus preservation solution	It can still be used, but pay attention to observing cell toxicity. The same serum-free dilution can also be added immediately to help precipitate and dissolve

Other related reagents

TR3012: Chronic virus infection enhancement reagent.

TR3003: Adenovirus infection enhancing reagent.

TR3041: Retroviral infection enhancing reagent.

TR3015: Virus infection enhancing reagent in animal bodies.