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Product Information

SweDNA™ Reagent

This innovative DNA transfection reagent represents a new generation of cationic polymer-based technology. It boasts exceptional DNA binding and delivery capabilities, specifically designed for efficient transfection of plasmid DNA.

Notably, this product offers several advantages: minimal toxicity, robust stability, straight forward and reliable transfection procedures, and consistent reproducibility.

Importantly, its binding affinity to plasmid DNA remains largely unaffected by serum present in the culture medium.

Researchers can confidently employ this reagent for both transient and stable transfection across various cell types.

Product Number: G1805-0.5ML

Assay Protocol

1. Pre-transfection preparation of adherent cells (this protocol is used for 6-well plate as example, for other culture ware, please refer the table at end of this file).

a. One day before transfection, seed cells uniformly in the well plate at 60-85% density during formal transfection, ref. Table SweDNA™ amount for common cell culture ware.

b. (optional) Wash the cells with room temperature PBS buffer for 1-2 times.

c. Replace the medium with 1.0 mL of serum-free or low-serum (less than 5%) basal medium.

d. Place the cell back to cell culture incubator while preparing the transfection complexes.

2. Preparation of suspension cells for transfection.

a. Prepare Solution A: Mix 2 ug DNA with 500 µL of serum-free medium (eg. Opti-MEM® from ThermoFisher) in a 15 mL tube, gently mix (low speed vortex for 5-10s is ok).

b. Preparation of solution B: invert the SweDNA™ transfection reagent 5 times before use, add 2-10 µL to 500 uL serum-free medium in a 15 mL tube, gently mix.

c. Incubate mix A and B at room temperature for 5 minutes (optional).

d. Add mix B to A, gently mix, incubate at room temperature for 20 min to form the DNA-transfection reagent complex.

e. Drop-wise add the DNA-transfection reagent complex to the cells, swirl the plate slightly to make sure that the DNA-SweDNA™ reagents disperse evenly.

f. Incubated the cells at 37°C in a 5% CO_2 incubator.

g. Replace the medium with original culture medium in 4-6 h of incubation.

h. Analyze the transfection effects after certain incubation time. GFP signal can be observed in 24 hours.

Factors affecting transfection efficiency:

1. Cell viability, healthy cells usually give higher transfection ratio compared the old/sick cells.
2. Some cells are very sensitive the endotoxin, make sure to use high quality endotoxin-free plasmid DNA.
3. The DNA: SweDNA™ ratio varies from cell to cell, we recommend doing titration if necessary.

Components

1. SweDNA^{TM} reagent, 0.5 mL
2. Product Insert, 1 copy

Storage and Shipping Conditions

Ship with blue ice. Store at 2-8ºC for 12 months.

Table. SweDNA^{TM} amount for common cell culture ware.

Culture dish	Single well area	Number of inoculated cells	DNA transfection		Total volume
			Transfection reagent	DNA	
96-well plate	0.3 cm²	(2.0-4.0)×10^4	0.2-1.0μL	0.2μg	0.1 mL
24-well plate	2.0 cm²	(1.2-2.4)×10^5	0.4-2.0 μL	0.4μg	0.5 mL
12-well plate	4.0 cm²	(2.4-4.8)×10^5	1.0-5.0μL	1.0μg	1.0 mL
6-well plate	9.5 cm²	(6.0-10)×10^5	2.0-10μL	2.0μg	2.0 mL