

Omni Huvec siRNA/miRNA Transfection Reagent

Features:

- © Can efficiently transfect human umbilical vein endothelial cells, pulmonary artery endothelial cells, etc. The transfection rate in HUVEC can be as high as about 90%;
- © Extremely low cytotoxicity: Using biodegradable biomaterials, the mortality rate of endothelial cells after transfection is only about 8%;
- © Easy to operate: Opti-MEM is not required, and the culture medium does not need to be changed 4-6 hours after transfection because of its low toxicity.

Components

Cat. No.	Trans Enhancer	Omni Huvec
OM750042-0.75ml	25.5ml	0.75ml
OM750042-1.5ml	51ml	1.5ml

Introduction:

Omni Huvec siRNA/miRNA Transfection Reagent (Omni Huvec) is a reagent specifically used for siRNA/miRNA transfection of endothelial cells including human umbilical vein endothelial cells, human pulmonary artery endothelial cells, rat pulmonary artery endothelial cells, etc. Endothelial cells are difficult to transfect. Endothelial cells are not only sensitive to the toxicity of transfection reagents, but also have low permeability of cell membranes. Ordinary transfection reagents not only make it difficult to transfect exogenous nucleic acid fragments such as DNA, siRNA and mRNA into endothelial cells, but also cause massive cell death. Overseas returnee team of Changzhou Bio-generating Biotechnology Corp used our patented nano-micelle transfection technology to successfully develop a siRNA/miRNA transfection reagent specifically for endothelial cells. Omni Huvec has excellent siRNA transfection performance and can efficiently transfect human umbilical vein endothelial cells, pulmonary artery endothelial cells, etc. The transfection rate in HUVEC can be as high as about 90%. In particular, Omni Huvec uses degradable biomaterials, which completely overcomes the disadvantage of high cytotoxicity of ordinary transfection reagents. It has extremely low cytotoxicity and the mortality rate of endothelial cells after transfection is only about 8%. As can be seen above, Omni Huvec siRNA/miRNA transfection reagent is an ideal choice for siRNA/miRNA transfection experiments on endothelial cells. This reagent is only used for transfection of small molecule nucleic acids such as siRNA/miRNA. If you want to transfect plasmid DNA, please use Omni Huvec plasmid DNA transfection reagent.

Protocol: Use the following procedure to transfect siRNA into cells in a 24-well format. For additional formats, see the table below.

- A. Plate cells: One day before transfection, plate cells in 500 μ l of growth medium without antibiotics so that cells will be 30-50% confluent at the time of transfection.
- B. Prepare siRNA-Omni Huvec complex:
 1. Dilute 12 pmol siRNA in 25 μ l of Trans Enhancer, mix gently.
 2. Dilute 1.5 μ l Omni Huvec in 25 μ l of Trans Enhancer, mix gently. Incubate for 5 minutes at room temperature. Note: make sure to perform the third step within 15 minutes without too much delay.
 3. After the 5 minute incubation, combine the diluted siRNA with the diluted Omni Huvec (total volume = 50 μ l). Mix gently and incubate for 15 minutes at room temperature.
- C. Add complexes to cells in complete growth medium (Serum-containing endothelial cell culture medium) :
 1. Add the 50 μ l of complexes to each well containing cells and 0.5 ml medium. Mix gently by rocking the plate back and forth for several times.
 2. Incubate cells at 37°C in a CO₂ incubator for 18-72 hours prior to testing for knockdown of gene expression. For FAM-labeled siRNA, the transfection rate can be observed using a fluorescence microscope about 12 hours after transfection.

Optimizing Transfection:

If you are conducting a transfection experiment for the first time, please be sure to perform an optimization experiment. For example, for 24-well plate transfection, Omni Huvec reagent can be optimized by using 1.3 μ l, 1.5 μ l, 1.7 μ l per well.

Important Guidelines for Transfection:

- Before using the transfection reagent, be sure to gently mix it with a pipette. Transfection should be performed when endothelial cells are growing well, using a culture medium specifically designed for endothelial cells.
- Calculate the number of inoculated cells so that the cell density during transfection is around 30-50%. Generally, the number of cells inoculated per well of a 24-well plate is around 4×10^4 ;
- When using fluorescently labeled siRNA such as FAM-NC for fluorescence observation, the recommended dosage per well of a 24-well plate is adjusted to 24 pmol.

Omni Huvec siRNA/miRNA Transfection Reagent Formats for Various Cell Culture Vessels

Culture vessel	Surface area/well (cm²)	Vol. of growth medium (μl)	Vol. of Trans Enhancer (μl)	siRNA Amount (pmol)	Omni Huvec (μl)
96-well	0.3	120	2 × 6	3	0.35
48-well	0.8	250	2 × 13	6	0.7
24-well	2	500	2 × 25	12	1.5
12-well	4	1000	2 × 50	24	3
6-well	10	2500	2 × 125	60	7.5

Reagent use and Limitations:

For Research Use Only. Not for use in diagnostic procedures.

Storage, Transportation, Stability and Special Handling:

Transport with ice packs. Store Omni Huvec at -20°C away from light. Store Trans Enhancer at 2-8°C. Valid for one year.