

# GenJet™ In Vitro DNA Transfection Reagent for MCF-7 Cells (Ver. II)

----- A Protocol for Transfecting MCF-7 Cell

- 100 µl
- 500 µl
- 1000 µl



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This product is for laboratory research ONLY and not for diagnostic use

## Introduction:

GenJet™ In Vitro DNA Transfection Reagent (Ver. II) is upgraded version of GenJet™ In Vitro DNA Transfection Reagent. With a new chemistry, more DNA condensing groups were released in the new version compared with old version GenJet™, leading to 3~20 times more efficient in DNA delivery. GenJet™ (Ver. II) for MCF-7 cells was Pre-optimized and conditioned for transfecting MCF-7 cells.

## Procedures for Transfecting MCF-7 Cells:

### Step I. Cell Seeding (see Table 1):

Cells should be plated 18 to 24 hours prior to transfection so that the monolayer cell density reaches to the optimal ~80% confluency at the time of transfection. Complete culture medium with serum and antibiotics is freshly added to each well ~60 minutes before transfection.

**Table 1. A Guideline for Seeding Adherent Cells Prior to Transfection in Different Culture Formats**

Culture Dishes	Surface Area (cm <sup>2</sup> )	Number of Cells to Seed
T75 Flask	75	3.0 – 6.0 × 10 <sup>6</sup>
100 mm Dish	58	2.2 – 4.4 × 10 <sup>6</sup>
60 mm Dish	21	0.9 – 1.8 × 10 <sup>6</sup>
35 mm Dish	9.6	3.5 – 7.0 × 10 <sup>5</sup>
6-well Plate	9.6	4.0 – 8.0 × 10 <sup>5</sup>
12-well Plate	3.5	1.5 – 3.0 × 10 <sup>5</sup>
24-well Plate	1.9	0.8 – 1.6 × 10 <sup>5</sup>
48-well Plate	1.0	4.0 – 8.0 × 10 <sup>4</sup>
96-well Plate	0.3	1.2 – 2.4 × 10 <sup>4</sup>

**Table 2. Recommended Amounts for Different Culture Vessel Formats**

Culture Dish	Transfection Volume (ml)	Plasmid DNA (µg)	Diluent Volume (mL)	GenJet™ Reagent (µL)
96-well	0.2	0.2	2 × 0.01	0.6
48-well	0.3	0.5	2 × 0.02	1
24-well	0.5	1.0	2 × 0.05	3
6-well	1.0	2	2 × 0.1	6
35 mm dish	1.0	2	2 × 0.1	6
60 mm dish	3	5	2 × 0.25	15
10 cm dish	5	6	2 × 0.5	18
T75 flask	7	10	2 × 0.65	30
250 ml flask	20	33	2 × 1.25	99

## Step II. Preparation of GenJet™-DNA Complex and Transfection Procedures

**For MCF-7 cells, the optimal ratio of GenJet™ (µL):DNA (µg) is 3:1. To ensure the optimal size of complex particles, we recommend using serum-free DMEM with High Glucose to dilute DNA and GenJet™ Reagent.**

The following protocol is given for transfection in 24-well plates, refer to **Table 2** for transfection in other culture formats. The optimal transfection conditions For MCF-7 cells are given in the standard protocol described below.

- For each well, add 0.5 ml of complete medium with serum and antibiotics freshly ~60 minutes before transfection.
- For each well, dilute 1 µg of DNA into 50 µl of serum-free DMEM with High Glucose. Vortex gently and spin down briefly to bring drops to bottom of the tube .
- For each well, dilute 3 µl of GenJet™ reagent (Ver. II) into 50 µl of serum-free DMEM with High Glucose. Vortex gently and spin down briefly.

**Note:** Never use Opti-MEM to dilute GenJet™ reagent and DNA, it will disrupt transfection complex.

- Add the diluted GenJet™ Reagent immediately to the diluted DNA solution all at once. **(Important: do not mix the solutions in the reverse order !)**
- Immediately pipette up and down 3~4 times or vortex to mix followed by incubation for ~15 minutes at room temperature to allow GenJet™-DNA complexes to form.

**Note:** Never keep the DNA/GenJet™ complex longer than 30 minutes

- Add the 100 µl GenJet™/ DNA complex drop-wise onto the medium in each well and homogenize the mixture by gently swirling the plate.
- Remove DNA/GenJet™ complex-containing medium and replace with fresh complete serum/antibiotics containing medium ~5 hours post transfection.
- Check transfection efficiency 24 to 48 hours post transfection.

**Storage:** GenJet™ DNA In Vitro Transfection Reagent is stable for up to 12 months at +4 °C. This item shipped at ambient temperature