

# Transfectamine™ mRNA Transfection Reagent

Catalog number: 60030, 60031 Unit size: 500 ul, 5 ml

Component	Storage	Amount (Cat No. 60030)	Amount (Cat No. 60031)
Transfectamine™ mRNA Transfection Reagent	Refrigerated (2-8 °C), Minimize light exposure	500 μL	5 mL

#### **OVERVIEW**

Transfectamine™ mRNA Transfection Reagent is a powerful and versatile transfection reagent designed to introduce a higher amount of mRNA into eukaryotic cells, or more specifically, into animal cells. It delivers high transfection efficiency in a wide variety of adherent and suspension cell lines, including difficult-to-transfect cells. Nuclear uptake is not required, which results in faster protein expression than DNA transfection without the risk of genomic integration. The low toxicity of Transfectamine™ mRNA Transfection Reagent allows higher viability of transfected cells. Transfectamine™ mRNA Transfection Reagent does not require special medium and is easier to use compared to most of the commercial transfection reagents.

## AT A GLANCE

#### **Protocol Summary**

- 1. Prepare cells for transfection
- Prepare the Transfectamine™ mRNA Transfection Reagent-RNA mixture
- Add the Transfectamine<sup>™</sup> mRNA Transfection Reagent-RNA mixture to the cell culture
- 4. Culture cells overnight
- 5. Analyze transfection efficiency with an appropriate method

## **CELL PREPARATION**

- 1. Culture cells to ~ 90% confluency at the time of transfection.
- Replace with fresh growth medium before transfection. For example, replace with 2 mL of medium per well for 6-well plates and 6 mL of medium for 10 cm plates.

## PREPARATION OF WORKING SOLUTION

#### 1. Transfectamine™ mRNA Transfection Reagent-RNA mixture

- 1. Mix 2.5  $\mu$ g of mRNA with 200  $\mu$ L of serum-free medium.
- Add 7.5 µL of Transfectamine™ mRNA Transfection Reagent to Step 1.
- 3. Mix well and incubate at RT for 20 minutes.

**Note** The ratio of Transfectamine  $^{\text{TM}}$  mRNA Transfection Reagent to mRNA need to be optimized for different cell lines. In general, Transfectamine  $^{\text{TM}}$  mRNA Transfection Reagent ( $\mu$ L) to mRNA ( $\mu$ g) Ratio = (3 to 5  $\mu$ L) to 1  $\mu$ g. **Table 1.** Sample protocol detail for 6-well plates as shown by table below.

Component	6-well plate (per well)	
Fresh culture medium	2 mL	
Purified mRNA	~2.5 µg	
Serum-free medium	200 μL	
Transfectamine™ mRNA Transfection	∼7.5 µL	
Reagent		

## SAMPLE EXPERIMENTAL PROTOCOL

#### **Transfection Protocol**

 Add the Transfectamine™ mRNA Transfection Reagent -mRNA mixture to the culture plate and culture overnight. Note Recombinant protein expression can be detected as early as 8 hours after the transfection. Maximal expression level may be observed ~24 hours after the transfection.

#### **EXAMPLE DATA ANALYSIS AND FIGURES**

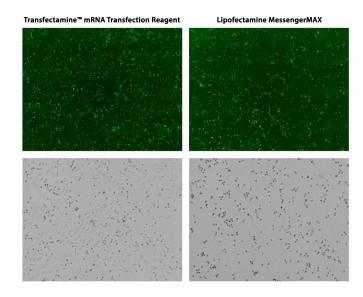


Figure 1. Transfection efficiency comparison (Upper panel) and cellular toxicity comparison (Bottom panel) in HeLa cells. HeLa cells were cultured in a 6-well plate to ~90% confluency. 2.5 µg of mRNA was transfected with Lipofectamine MessengerMAX and Transfectamine™ mRNA Transfection Reagent, respectively. Images were taken 18 hours after the transfection using a fluorescent microscope with the FITC channel (Upper panel). Although transfection efficiency was similar for Lipofectamine MessengerMAX and Transfectamine™ mRNA Transfection Reagent, most Lipofectamine MessengerMAX transfected samples were scrambled, whereas cells transfected with Transfectamine™ mRNA Transfection Reagent looked much healthier (bottom panel).

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