UltraTRAX™ Transfection Reagent

Cat No.: SM508-1000 Size: 1000 µl
Cat No.: SM508-0100 Size: 100 µl
Store at -20°C

Description

The UltraTRAX™ Transfection Reagent is formulated to be a powerful transfection reagent that ensures effective and reproducible transfection with less cytotoxicity. After UltraTRAX™ and plasmid mixed, the UltraTRAX™/ plasmid complexes protect DNA from degradation and facilitate efficient plasmid delivery into eukaryotic cells. The entire procedure can be completed in 30 minutes.

Note:

- For high efficiency and lower toxicity, transfect cells at 50~60% confluency is highly recommended.
- Maintain the same seeding conditions between experiments.
- Different cell types and number of passages might lead to different transfection efficiency, and we recommend using at least two different concentrations of transfection reagent as control in new transfect experiments to optimize experimental conditions.
- Endotoxin-contaminated DNA results in inefficient transfection and can cause high cellular toxicity.

Kit contents

Catalog number	SM508-1000	SM508-0100
UltraTRAX™ Transfection Reagent	1 ml	100 µl

Features

- Fast - only 30 minutes
- Excellent transfection efficiency in the presence or absence of serum

Applications

- Protein expression

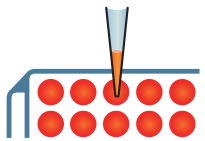
Quality Control

We perform lot-to-lot tests among different batches to ensure consistency of transfection efficiency.

Required Materials

- Cell culture dish
- Cell culture medium with/ without serum
- Purified plasmid

Protocol

Day 0		Cell preparation: Cells should be seeded 16 to 20 hours prior to transfection with around 50-60% confluency. The medium should be refreshed 30 min before transfection. Usually, culture media with serum does not affect transfection efficiency.

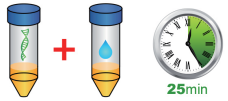
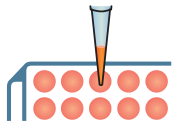
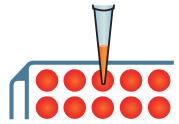
Day 1		Prepare mixture of DNA by diluting in medium, mix well (See table 1.). Note: DNA preparation: DNA plasmid for transfection should be with high purity (A260/A280=1.8-1.9) to ensure efficient transfection mixture preparation.	
		Prepare mixture of UltraTRAX™ by diluting in medium (See table 1.), and incubate 5 minutes.	
		Mix DNA with UltraTRAX™ and aspirate gently. Then stands at RT for 25min	
		Add mixtures into cell culture dish/plate.	 The mixture could be removed after 6 to 48 hours and refilled with culture medium.
Day 2~3		The mixture could be removed after 6 to 48 hours and refilled with culture medium.	

Table 1. UltraTRAX™ Transfection Reagent Protocol

Culture Dish/Plate	Media Volume	Plasmid	Serum-Free Medium	UltraTRAX™
96-well	100 µL	250 ng	10 µL	0.75 µL
24-well	500 µL	500 ng	25 µL	1.5 µL
12-well	700 µL	750 ng	35 µL	2.25 µL
6-well	1 mL	1 µg	50 µL	3 µL
6 cm	3 mL	2.5 µg	150 µL	7.5 µL
10 cm	6 mL	5 µg	300 µL	15 µL

Troubleshooting

Refer to the table below to troubleshoot problems that you may encounter when transfect cells with the kit:

Problem	Cause	Solution
Low transfection efficiency	DNA: transfection reagent ratio sub-optimal for cell line	Prepare complexes using a DNA (µg) to UltraTRAX™ Transfection Reagent (µl) of 1: 3 for most cell lines. Optimization may be necessary. If using a different transfection reagent, please consult the product manual
Reduced cell viability following transfection	Plasmid DNA preparation contains high levels of endotoxin	Ensure that the plasmid DNA used for transfection is of high quality. For plasmid DNA purification kits, we recommend using our Plasmid *midi*PREP Kit
	Antibacterial agents were used in growth medium during transfection	Do not use antibiotics in growth medium because during transfection, cells are more permeable to antibiotics, which may cause toxicity
Transfect results not reproducible	Transfect perform at different cell confluences, or at different DNA: transfection reagent ratios	Transfect performance reproducibility is dependent on day-to-day consistency in cell splitting, plating and transfecting with a consistent protocol (same DNA: transfection reagent ratios) Different DNA preparations or media changes may also change transfection performance. Optimize transfections especially if you are transfecting a mammalian cell line for the first time

Caution

1. During operation, always wear a lab coat, disposable gloves, and protective equipment.
2. All products are for research use only.

Related Ordering Information

Cat. No.	Description	Size
CC002-1000	Insulin-Transferrin-Selenium Mixture (ITS-M), 500X	1 ml
CC103-0500	DMEM, High Glucose	500 ml
CC110-0500	RPMI 1640	500 ml
SD010-R500	1Kb DNA Ladder, RTU	500 µl