CFDA SE Cell Proliferation Assay and Tracking Kit

C1507077

Storage: -20℃. Protect from light.

Shipping: Shipped with ice packs. Please store under the specified storage conditions immediately upon receipt.

Introduction

CFDA SE Cell Proliferation Assay and Tracking Kit is a detection kit for cell proliferation assay and cell fluorescence tracking based on a novel fluorescent probe, CFDA SE.CFDA SE is now widely used as an alternative to the MTT assay, [3H]-thymidine incorporation, and other cell proliferation detection methods.The full name of CFDA-SE is Carboxyfluorescein diacetate, succinimidyl ester, with a molecular formula of $C_{29}H_{19}NO_{11}$, a molecular weight of 557.47, and a CAS number of 150347-59-4.CFDA SE is cell-membrane permeable.After entering cells, it is catalyzed and hydrolyzed by intracellular esterase into CFSE.CFSE can spontaneously and irreversibly bind to lysine residues or other amino groups of intracellular proteins and label these proteins.Cells can be sufficiently labeled approximately 24 hours after the addition of the fluorescent probe CFDA SE.

Composition

C1507077	Components	500T	1000T	2000T	Storage
C1507077A	CFDA SE	1 vial	2 vials	4 vials	-20℃, Store in the dark.
C1507077B	CFDA SE Solvent	1 mL	2×1 mL	4×1 mL	-20℃, Store in the dark.
C1507077C	Cell Staining Buffer	50 mL	100 mL	200 mL	-20℃.

Usage Protocol

1. Preassay Preparation

1) Add 500 μL of CFDA SE Solvent to one tube of CFDA SE fluorescent probe, dissolve and mix thoroughly to obtain 1000× stock solution.The stock solution is best used within 1 month, and for a maximum of 2 months.Aliquot any remaining stock solution and store at ≤ −20°C, protected from light and dry, avoiding repeated freeze-thaw cycles.Storage at −70°C protected from light may appropriately extend the shelf life.

2) Preparation of CFDA SE Cell Labeling Solution:

Prepare an appropriate amount of sterile cell culturegrade water.Prepare sufficient CFDA SE Cell Labeling Solution according to experimental needs.For example: take 20 mL of 10× CFDA

SE Cell Labeling Solution, add 180 mL of cell culture-grade water, and mix well to obtain 1× working solution.The prepared CFDA SE Cell Labeling Solution can be stored at 4°C, or at −20°C for long-term storage.

Note: Although the kit has optimized the CFDA SE staining system, users are recommended to optimize the working concentration gradient according to their own cell type, culture conditions and application, using the lowest working concentration that achieves satisfactory labeling efficiency.

2. Procedure

1) Harvest cells by centrifugation.
2) Suspend cells in 1 mL of 1×Cell Staining Buffer in a 15 mL centrifuge tube, and adjust the cell concentration to 1–5×10^6 cells/mL.
3) Add 1 mL of 2×CFDA SE working solution to the above 15 mL centrifuge tube and mix gently.
4) Incubate at 37°C for 10 min.Note: The optimal labeling time should be optimized for different cell types.
5) Immediately add approximately 10 mL of complete cell culture medium (containing 10% FBS) to the 15 mL centrifuge tube.Invert gently several times at room temperature to stop the labeling reaction.
6) Centrifuge at room temperature and discard the supernatant. Wash once with 5–10 mL of complete cell culture medium.
7) Add another 5-10 mL of complete cell culture medium and incubate at 37°C for 10 min to promote intracellular retention of the fluorescent product formed from CFDA SE by esterase catalysis,and to allow unreacted CFDA SE to diffuse into the medium.Centrifuge and discard the supernatant to complete the final wash.
8) The labeled cells are now ready for subsequent in vitro proliferation assays or cell tracking for specific purposes.Culture cells under normal conditions, then analyze at appropriate time points using a fluorescence microscope or flow cytometer FL1 channel.Labeled cells show green fluorescence.Labeled cells can also be transplanted into living animals and traced by fluorescence.Note:If cell fixation is required, fix cells with an aldehyde fixative such as 3.7% paraformaldehyde at room temperature for 15 min.If further staining (e.g., antibody labeling) is needed afterward, permeabilize cells with ice-cold acetone for 10 min.

Precautions

1. CFDA SE is susceptible to hydrolysis and degrades rapidly in aqueous solution.Avoid contact with water during handling, except during cell labeling, which is permitted.
2. The CFDA SE Solvent may solidify at low temperatures such as 4°C or on ice, adhering to the bottom, wall or cap of the centrifuge tube.Incubate in a water bath at 20–25°C briefly until fully dissolved before use.
3. All fluorescent dyes are prone to photobleaching.Protect from light as much as possible to slow down fluorescence quenching.
4. This product is for research use only by professional personnel.It is not intended for clinical

diagnosis or therapy,not for use in food or pharmaceutical products,and must not be stored in ordinary residential premises.

5. For your safety and health,please wear a lab coat and disposable gloves during operation.