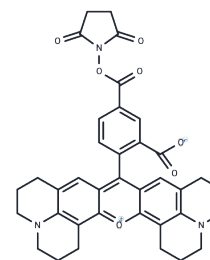


5-ROX, SE

Chemical Properties

| | |
|-------------------|--|
| CAS No. : | 209734-74-7 |
| Formula: | C37H33N3O7 |
| Molecular Weight: | 631.68 |
| Storage: | Store at low temperature, Keep away from direct sunlight Powder: -20°C for 3 years In solvent: -80°C for 1 year <small>Actual storage temperature shall be subject to the COA.</small> |



Biological Description

| | |
|---------------|--|
| Description | 5-ROX, SE ([5-Carboxy-X-rhodamine, succinimidyl ester] *Single isomer*) is a labeling reagen used in the preparation of charge-modified dye-labeled Dideoxynucleotide Triphosphates (ddNTP) to "direct-load" DNA sequencing. |
| Targets(IC50) | Others |
| Cell Research | <p>Instructions</p> <p>I. Solution preparation</p> <ol style="list-style-type: none"> 1. Storage solution preparation: 5-ROX, SE are dissolved in anhydrous DMSO or DMF. The concentration is generally recommended to be 1-10 mM. The specific concentration can be adjusted according to the experimental needs. 2. Working solution preparation: Use water or PBS to dilute the storage solution to a certain concentration. The specific concentration needs to be determined according to the experimental conditions. <p>II. Operation steps</p> <ol style="list-style-type: none"> 1. Labeling reaction: <ol style="list-style-type: none"> 1) Mix the dissolved 5-ROX, SE with the amine-containing ddNTP solution. 2) The reaction is usually carried out at pH 8.0-9.0 to promote the reaction of NHS ester with the amine group in the ddNTP molecule. 3) The reaction time is usually 30 minutes to 1 hour. The reaction can be carried out at room temperature or overnight at 4°C. The specific reaction conditions are optimized according to the requirements of the experiment. 2. Removal of unreacted dye: <ol style="list-style-type: none"> 1) After the reaction is completed, use dialysis, gel filtration or centrifugation to remove the unreacted dye to avoid affecting the subsequent sequencing reaction. 2) These steps help ensure pure labeled ddNTPs for DNA sequencing. 3. DNA sequencing using labeled ddNTPs: <ol style="list-style-type: none"> 1) Use 5-ROX, SE labeled ddNTPs for DNA synthesis reactions. This method allows for direct loading of fluorescent labels during DNA synthesis for different base recognition. 2) The fluorescence properties of 5-ROX (Ex/Em: ~570/602 nm) allow it to be well distinguished from other commonly used fluorescent labels in sequencing, helping to identify different bases. <p>Notes:</p> <ol style="list-style-type: none"> 1. Labeled ddNTPs should be stored at -20°C to avoid repeated freezing and thawing to |

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| | |
|---------------|---|
| Cell Research | ensure label stability. 2. Unused 5-ROX, SE solutions should be kept at -20°C and avoid exposure to strong light to avoid fluorescence decay. The above information is based on published literature. Experimental procedures should be appropriately modified to meet specific research demands. |
|---------------|---|

Solubility Information

| | |
|------------|---|
| Solubility | DMSO: Slightly soluble (< 1 mg/ml refers to the product slightly soluble or insoluble) |
|------------|---|

Preparing Stock Solutions

| | 1mg | 5mg | 10mg |
|-------|-----------|-----------|------------|
| 1 mM | 1.5831 mL | 7.9154 mL | 15.8308 mL |
| 5 mM | 0.3166 mL | 1.5831 mL | 3.1662 mL |
| 10 mM | 0.1583 mL | 0.7915 mL | 1.5831 mL |
| 50 mM | 0.0317 mL | 0.1583 mL | 0.3166 mL |

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Finn PJ, Sun L, Nampalli S, Xiao H, Nelson JR, Mamone JA, Grossmann G, Flick PK, Fuller CW, Kumar S. Synthesis and application of charge-modified dye-labeled dideoxynucleoside-5'-triphosphates to 'direct-load' DNA sequencing. Nucleic Acids Res. 2002 Jul 1

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