

DNP-X, SE

Chemical Properties

CAS No. : 82321-04-8

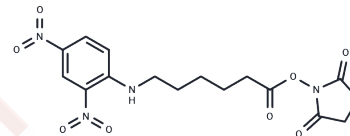
Formula: C₁₆H₁₈N₄O₈

Molecular Weight: 394.34

Keep away from direct sunlight

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Actual storage temperature shall be subject to the COA.



Biological Description

Description	DNP-X, SE (6-(2,4-Dinitrophenyl)amino)hexanoic acid, succinimidyl ester) is an amine-reactive building block recognized by anti-DNP antibodies and serves as an excellent amine-reactive FRET quencher when paired with Trp or Tyr.
Targets(IC50)	Others
In vitro	<p>Instructions</p> <ol style="list-style-type: none"> Solvent selection DNP-X, SE is easily soluble in anhydrous DMSO or DMF. Make sure the solvent is anhydrous to avoid hydrolysis of succinimide esters. Sample preparation Target molecule: must contain free amine groups (such as lysine side chains or N-terminal amine groups of proteins). Buffer selection: It is recommended to use an amine-free buffer (such as carbonate or phosphate buffer) with a pH of about 8.3. Avoid Tris or other amine-containing buffers to avoid interference with the reaction. Coupling reaction <ol style="list-style-type: none"> Prepare a DMSO solution of DNP-X, SE (usually 10 mM concentration). Add the target molecule to the buffer, and then add the DNP-X, SE solution dropwise (use the reagent in a 10-20-fold excess of the molar amount of the target molecule). React at room temperature or slightly below room temperature (4°C) for 30 minutes to 2 hours, away from light and high temperature. Adjust the pH of the reaction between 8-9 to maintain the activity of the succinimidyl ester. Reaction termination and purification <ol style="list-style-type: none"> Adjust the pH of the reaction solution to neutral (7.0) with a buffer. Remove unreacted DNP-X, SE and byproducts by one of the following purification methods: Dialysis: Suitable for labeling large molecules (such as proteins). Gel filtration columns (such as Sephadex G-25). HPLC: Suitable for high-precision purification. Verify the labeling UV-Vis spectrophotometry: The absorption peak of DNP-X is usually in the range of 360-400 nm. FRET detection: Detect the quenching effect of energy transfer when paired with Trp or

In vitro	<p>Tyr as a donor.</p> <p>Notes</p> <p>a. Storage conditions: DNP-X, SE should be stored at -20°C, away from light and moisture, and can be stored under inert gas (such as nitrogen) when necessary.</p> <p>b. Avoid cross-reactions: Ensure that the target molecule sample does not contain other free amine groups or reactive groups that interfere with labeling.</p> <p>c. Optimize conditions: Adjust reagent concentration, reaction time and temperature according to the characteristics of the target molecule to maximize labeling efficiency.</p> <p>The above information is based on published literature. Experimental procedures should be appropriately modified to meet specific research demands.</p>
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Solubility Information

Solubility	DMSO: 20 mg/mL (50.72 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.5359 mL	12.6794 mL	25.3588 mL
5 mM	0.5072 mL	2.5359 mL	5.0718 mL
10 mM	0.2536 mL	1.2679 mL	2.5359 mL
50 mM	0.0507 mL	0.2536 mL	0.5072 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

- Liu, Y. et al., "FRET Quenching Properties of DNP-X, SE with Trp and Tyr," Biophysical Journal, 2013.
- Harris, E. N., "Selective Labeling of Proteins with DNP-X, SE: Applications and Methods," Methods in Molecular Biology, 2012.
- Jian D, et al. METTL14 aggravates endothelial inflammation and atherosclerosis by increasing FOXO1 N6-methyladeosine modifications. Theranostics. 2020 Jul 11;10(20):8939-8956.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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