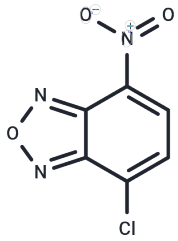
Data Sheet (Cat.No.T19030)

TargetMol

NBD-Cl

Chemical Properties



CAS No. : 10199-89-0

Formula: C6H2ClN3O3

Molecular Weight: 199.55

Storage: Keep away from direct sunlight,Store under nitrogen
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	NBD-Cl (NBD chloride) is a nonfluorescent compound that becomes highly fluorescent after reaction with amino or thiol groups.
Targets(IC50)	Others
Cell Research	1. Protein labeling Experimental steps: 1. Prepare NBD-Cl solution: Dissolve NBD-Cl in an appropriate organic solvent, such as dimethylsulfide (DMSO), and prepare a stock solution with a concentration of usually 1-10 mM. 2. Reaction with protein: Mix the NBD-Cl solution with a protein sample containing free thiol or amino groups. The reaction is usually carried out at room temperature or slightly alkaline to facilitate the reaction with the thiol group. 3. Incubation: The reaction incubation time is usually 30 minutes to 1 hour to ensure the reaction is complete. 4. Purification: After the reaction is completed, the unreacted NBD-Cl can be removed by dialysis or filtration to ensure that only the labeled protein is left. 5. Fluorescence measurement: Fluorescence emission is measured using a fluorescence spectrophotometer, usually with excitation wavelength of 460 nm and emission wavelength of approximately 530 nm to confirm the labeling efficiency. 2. Quantification of thiol groups Experimental steps: 1. Prepare NBD-Cl solution: Dissolve NBD-Cl in DMSO or other appropriate solvent to prepare a stock solution. 2. Sample Preparation: Add NBD-Cl to a biological sample or buffer containing free thiol. The concentration of NBD-Cl should be optimized to ensure complete reaction with the thiol group. 3. Incubation: The reaction incubation time is usually 10-30 minutes, allowing the thiol to react with NBD-Cl. 4. Fluorescence measurement: Use a fluorescence meter to measure the emission spectrum, the emission wavelength is usually 530 nm and the excitation wavelength is 460 nm. The fluorescence intensity is proportional to the number of thiol groups in the sample. III. Amino detection

Cell Research	Experimental steps: 1. Prepare NBD-Cl solution: Dissolve NBD-Cl in DMSO or other appropriate solvent to prepare a stock solution. 2. Sample preparation: Add NBD-Cl solution to a sample containing free amino groups (such as small molecules or peptides). 3. Incubation: The reaction is usually carried out at room temperature and the incubation time is 15-30 minutes. 4. Fluorescence measurement: Use a fluorescence meter to measure the emission spectrum, which is usually 530 nm and excitation wavelength is 460 nm, to detect the labeling of amino groups. The above information is based on published literature. Experimental procedures should be appropriately modified to meet specific research demands.

Solubility Information

Solubility	DMSO: 142.5 mg/mL (714.11 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Saline: 3.3 mg/mL (16.54 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	5.0113 mL	25.0564 mL	50.1128 mL
5 mM	1.0023 mL	5.0113 mL	10.0226 mL
10 mM	0.5011 mL	2.5056 mL	5.0113 mL
50 mM	0.1002 mL	0.5011 mL	1.0023 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

Prajapati P, et al. In-vivo microwave-aided spectrofluorimetric characterization of teneligliptin-loaded solid dispersion adsorbate using quality by design approach. Anal Biochem. 2025 Jan 30;700:115785.
Chen W, et al. PfGSTF2 endows resistance to quizalofop-p-ethyl in Polypogon fugax by GSH conjugation. Plant Biotechnol J. 2025 Jan;23(1):216-231.
Prajapati P, et al. Shah S. Microwave-derivatized enhanced-spectrofluorophotometric characterization of nateglinide-loaded solid dispersion adsorbate and greenness profile assessment of method. Anal Sci. 2024 Dec 8.

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