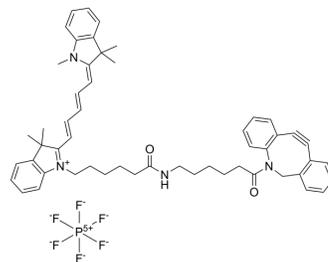


Cyanine5 DBCO

Cat. No.:	HY-D1583
CAS No.:	2360411-64-7
Molecular Formula:	C ₅₃ H ₅₉ F ₆ N ₄ O ₂ P
Molecular Weight:	929.03
Target:	Fluorescent Dye
Pathway:	Others
Storage:	-20°C, protect from light, stored under nitrogen * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light, stored under nitrogen)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 125 mg/mL (134.55 mM; Need ultrasonic)

Concentration	Mass		
	1 mg	5 mg	10 mg
1 mM	1.0764 mL	5.3820 mL	10.7639 mL
5 mM	0.2153 mL	1.0764 mL	2.1528 mL
10 mM	0.1076 mL	0.5382 mL	1.0764 mL

Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description

Cyanine5 DBCO (DBCO-Cy5) is a low-toxicity azide reactive probe (NIR fluorescent dye), for imaging azide-labeled biomolecules via a copper-free "click-through" reaction. Cyanine5 DBCO has no apparent cytotoxicity or animal toxicity and shows no damage to the physiological functions of cells other than the target cells (azide-labeled cells). Cyanine5 DBCO can be used to label and track cells in vitro and in vivo (Ex=635 nm, Em=650-700 nm)^{[1][2]}.

In Vitro

Guidelines (Following is our recommended protocol. This protocol only provides a guideline, and should be modified according to your specific needs).

Cell labeling (A549 cells for example)^{[1][2]}:

1. Seed cells onto 35-mm glass-bottom dishes at a density of 3×10^4 (varies by cell) in 2 mL of growth media.
2. Add Ac4ManNAz (50 μ M, final concentration), incubate for 3 days (generate azide groups on the surface of cells).
3. Wash cells twice with DPBS (pH 7.4).
4. Incubate cells with Cyanine5 DBCO (20 μ M, final concentration) for 1 h at 37 \square .
5. Rinse cells with DPBS (pH 7.4) and fix with formaldehyde-glutaraldehyde combined fixative for 15 min at 25 \square .
6. Wash cells twice with DPBS (pH 7.4) and stain cells with DAPI to label nuclei.
7. Measure Cyanine5 DBCO fluorescence (Ex=635 nm, Em=650-700 nm) using a confocal laser scanning microscope.

Note:

1) Artificially introduced azide groups on the cell surface can be targeted by Cyanine5 DBCO for more than 3 days after treatment with Ac4ManNAz.
2) Degree of Cyanine5 DBCO labeling is in a dose-dependent manner.
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

Guidelines (Following is our recommended protocol. This protocol only provides a guideline, and should be modified according to your specific needs).
Cell tracking in vivo^{[1][2]}:
1. Seed cells onto 35-mm glass-bottom dishes at a density of 3×10^4 (varies by cell) in 2 mL of growth media.
2. Add Ac4ManNAz (50 μ M, final concentration), incubate for 3 days (generate azide groups on the surface of cells).
3. Wash cells twice with DPBS (pH 7.4).
4. Anesthesia for mice, then inject cells (after Ac4ManNAz treatment) into the left lobe of the liver.
5. Inject Cyanine5 DBCO (25 μ M, 200 μ L) to tail vein (3 days post injection of cells into the liver).
6. Measure Cyanine5 DBCO fluorescence (Ex=635 nm, Em=650-700 nm). In vivo near-infrared fluorescence (NIRF) images is obtained with the in vivo imaging system.
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Nat Commun. 2023 Apr 22;14(1):2320.

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REFERENCES

- [1]. Kang SW, et al. Cell labeling and tracking method without distorted signals by phagocytosis of macrophages. *Theranostics*. 2014 Feb 12;4(4):420-31.
- [2]. Zhu L, et al. Coupling Aptamer-based Protein Tagging with Metabolic Glycan Labeling for In Situ Visualization and Biological Function Study of Exosomal Protein-Specific Glycosylation. *Angew Chem Int Ed Engl*. 2021 Aug 9;60(33):18111-18115.
- [3]. Song S, et al. In Situ One-Step Fluorescence Labeling Strategy of Exosomes via Bioorthogonal Click Chemistry for Real-Time Exosome Tracking In Vitro and In Vivo. *Bioconjug Chem*. 2020 May 20;31(5):1562-1574.

Caution: Product has not been fully validated for medical applications. For research use only.

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