Coppersensor 1

Cat. No.: HY-141511

CAS No.: 874748-20-6

Molecular Formula: $C_{30}H_{50}BF_2N_3S_4$

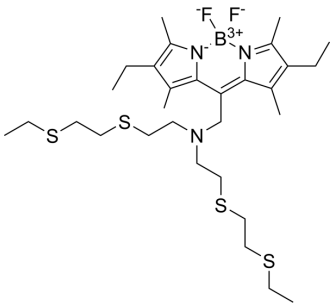
Molecular Weight: 629.81

Target: Fluorescent Dye

Pathway: Others

Storage: 4°C, protect from light

* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 25 mg/mL (39.69 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	1.5878 mL	7.9389 mL	15.8778 mL
	5 mM	0.3176 mL	1.5878 mL	3.1756 mL
	10 mM	0.1588 mL	0.7939 mL	1.5878 mL

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

BIOLOGICAL ACTIVITY

Description

Coppersensor-1 (CS1) is a membrane-permeable fluorescent dye. Coppersensor-1 has a picomolar affinity for Cu^+ with high selectivity over competing cellular metalions. Coppersensor-1 as a probe, can selective and sensitive detection of copper(I) ions (Cu^+) in biological samples, including live cells. Coppersensor-1 can be used for the research of imaging of severe diseases such as cancer, cardiovascular disorders and neurogenerative diseases[1].

In Vitro

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

A. Preparation of reagent stock solutions for imaging:

1. Prepare a 1 mM stock solution of CS1 (MW 630 g/moL) in DMSO by dissolving 0.63 mg of solid CS1 per milliliter of DMSO solvent.

2. Prepare a 10 mM stock solution of $CuCl_2$ (MW 134 g/moL) by dissolving 1.34 mg of solid $CuCl_2$ per milliliter of Millipore water solvent.

B. CS1 labeling of live cells:

1. Imaging experiments with cells will require 1-2 d with cells in culture. Incubate the cells according to your normal protocol.

2. One day before imaging, cells are passaged and plated on 18-mm glass coverslips coated with poly-L-lysine (50 μg/mL). Adherent cells for imaging are grown to 50-80% confluency.

3. Remove cells from incubator, and transfer one coverslip into a 35-mm Petri dish containing 3 mL PBS buffer.
4. To the Petri dish, add 15 µL of a 1 mM CS1 stock solution to give a final dye concentration of 5 µM. Mix thoroughly.
(Higher concentrations of dye may result in high levels of background fluorescence)
5. Incubate for 5-20 min in the dark at 25 or 37□.
C. Imaging the CS1-labeled cells:
1. Imageing in standard confocal microscope with 543 nm excitation.
(CS1 can be imaged using any type of fluorescence microscope, including epifluorescence, confocal and multiphoton)
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- SSRN. 2024 Jan 9.

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REFERENCES

[1]. Evan W Miller, et al. Preparation and use of Coppersensor-1, a synthetic fluorophore for live-cell copper imaging. Nat Protoc. 2006;1(2):824-7.

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