Data Sheet (Cat.No.T85330)

TargetMol

Red-HyP-1

Chemical Properties

CAS No. :

Formula: C37H33BClF2N4O

Molecular Weight: 633.95

Storage: Keep away from direct sunlight,Keep away from moisture
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	Red-HyP-1 is a red dye that can be used for in vivo hypoxia imaging. The maximum emission maximum of Red-HyP-1 is 798 nm.
Targets(IC50)	Others
In vitro	Under hypoxic conditions, CYP450 enzymes react with the N-oxide group, undergoing two-electron reduction to yield the uncapped dye (Red-HyP-1) which results in a red-shifted emission. HyP-1 has an absorbance and emission maxima at 670 and 697 nm, respectively, while red-Hyp-1 (the turned over product) has an absorbance and emission maxima at 760 and 798 nm. [1]
Animal Research	Instructions 1. Solution preparation Stock solution: Dissolve Red-HyP-1 in anhydrous DMSO or DMF to prepare a 1-10 mM stock solution. Working solution: Dilute to a working concentration of 1-10 μM using an experimental buffer (e.g., PBS, pH 7.4). 2. Experimental steps In vitro experiments 1) Add Red-HyP-1 to the sample solution (e.g., cell culture medium or biological buffer). 2) Incubate for 30 minutes to 1 hour at 37°C, away from light. 3) Detect fluorescence signal: Excitation wavelength: 720-750 nm Emission wavelength: 798 nm In vivo hypoxia imaging 1. Inject Red-HyP-1 into experimental animals (e.g., tail vein injection, the specific dose depends on the experimental design, usually 1-5 mg/kg). Wait 30 minutes to 1 hour after injection and detect using a fluorescence imager. 2. Signal detection equipment Use near-infrared fluorescence imaging system or fluorescence microscope to record the signal. 3. Calibration and control 1) Control experiment: Set up control groups with normal oxygen concentration (such as 20% O_2) and low oxygen concentration (such as 1% O_2). Verify whether the signal is

Animal Research	related to hypoxia. 2) Standard curve: Use samples under known oxygen concentration gradient to establish the relationship curve between fluorescence signal and oxygen concentration. Notes 1) Photosensitivity: Red-HyP-1 is sensitive to light. Avoid strong light exposure throughout the experiment to prevent fluorescence signal attenuation. 2) Storage conditions: Red-HyP-1 should be stored at -20°C in the dark and avoid repeated freezing and thawing. 3) Dissolution stability: Ensure that the solution is fully dissolved before use; if necessary, undissolved particles can be removed by low-speed centrifugation. The above information is based on published literature. Experimental procedures should be appropriately modified to meet specific research demands.

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.5774 mL	7.8871 mL	15.7741 mL
5 mM	0.3155 mL	1.5774 mL	3.1548 mL
10 mM	0.1577 mL	0.7887 mL	1.5774 mL
50 mM	0.0315 mL	0.1577 mL	0.3155 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

Lee MC, et al. Activity-Based Photoacoustic Probes for Detection of Disease Biomarkers beyond Oncology. ACS Bio Med Chem Au. 2023 Mar 10;3(3):223-232.
Knox HJ, et al. A bioreducible N-oxide-based probe for photoacoustic imaging of hypoxia. Nat Commun. 2017 Nov 27;8(1):1794.