Lucigenin

Cat. No.: HY-D0720

CAS No.: 2315-97-1

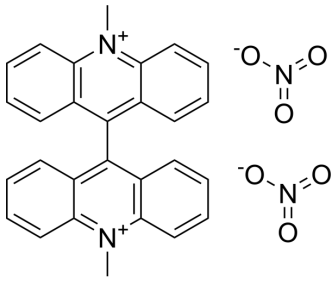
Molecular Formula: $C_{28}H_{22}N_4O_6$

Molecular Weight: 510.5

Target: Reactive Oxygen Species; Fluorescent Dye

Pathway: Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB; Others

Storage: 4°C, sealed storage, away from moisture and light
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 62.5 mg/mL (122.43 mM; Need ultrasonic)

Preparing Stock Solutions	Concentration \ Solvent \ Mass	1 mg	5 mg	10 mg
	1 mM	1.9589 mL	9.7943 mL	19.5886 mL
	5 mM	0.3918 mL	1.9589 mL	3.9177 mL
	10 mM	0.1959 mL	0.9794 mL	1.9589 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (4.07 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (4.07 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Lucigenin is a chemiluminescence probe. Lucigenin can be used to detect the production of endogenous superoxide anion radical (O^{2-}). Lucigenin is extremely sensitive to chloride ions, while it combined with chloride ions, the fluorescence will be quenched. Lucigenin also can be used as a chloride indicator. Ex/Em=455/505 nm[1].

In Vitro

Preparation of Lucigenin working solution
1.1 Preparation of the stock solution
Dissolve 1 mg of Lucigenin in 0.1919 mL of DMSO to obtain 10 mM of Lucigenin.
Note: It is recommended to store the stock solution at -20 °C -80 °C away from light and avoid repetitive freeze-thaw cycles.
1.2 Preparation of Lucigenin working solution
Dilute the stock solution in serum-free cell culture medium or PBS to obtain 5-10 μM of Lucigenin working solution.
Note: Please adjust the concentration of Lucigenin working solution according to the actual situation.

Cell staining
2.1 Cell preparation.
For suspension cells: Centrifuge at 1000 g at 4°C for 3-5 minutes and then discard the supernatant. Wash twice with PBS, 5 minutes each time.
For adherent cells: Discard the cell culture medium, and add trypsin to dissociate cells to make a single-cell suspension. Centrifuge at 1000 g at 4°C for 3-5 minutes and then discard the supernatant. Wash twice with PBS, 5 minutes each time.
2.2 Add 1 mL of Lucigenin working solution, and then incubate at room temperature for 15 minutes.
2.3 Centrifuge at 400 g at 4°C for 3-4 minutes and then discard the supernatant.
2.4 Wash twice with PBS, 5 minutes each time.
2.5 Resuspend cells with serum-free cell culture medium or PBS, and then detect by fluorescence microscope.
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- J Transl Med. 2023 Mar 25;21(1):218.
- Int J Mol Med. 2017 Dec;40(6):1803-1817.
- J Fungi (Basel). 2021 Nov 11;7(11):955.

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REFERENCES

[1]. Li Y, et al. Validation of lucigenin (bis-N-methylacridinium) as a chemilumigenic probe for detecting superoxide anion radical production by enzymatic and cellular systems. J Biol Chem. 1998 Jan 23;273(4):2015-23.

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