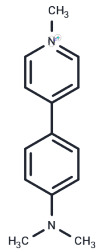
Data Sheet (Cat.No.T38516)

TargetMol

IDT307

Chemical Properties



CAS No. : 1141-41-9

Formula: C14H17IN2

Molecular Weight: 340.2

Storage: Keep away from direct sunlight
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	IDT307 is a fluorescent analog of MPP+, a fluorescent substrate for DAT (fluorescent substrate APP+), and can be used for rapid identification and characterization of PMAT inhibitors.
Targets(IC50)	Others
In vitro	IDT307 is an analog of the organic cation MPP+, which is transported to the parietal membrane (cerebrospinal fluid-facing side) of choroid plexus (CP) epithelial cells. Its transport process is highly sensitive to the PMAT inhibitor quinine. In Pmat knockout mice, uptake of IDT307 by choroid plexus tissue and its intracellular accumulation are significantly reduced by approximately 70%. [1]
Cell Research	1. For PMAT inhibitor screening 1. Cell preparation: In cell culture, select a cell line suitable for the study, such as cells expressing PMAT. 2. Add IDT307: Add IDT307 to the cell culture medium, usually at a concentration of 1-50 μM. 3. Inhibitor treatment: Add a known PMAT inhibitor or potential inhibitor to the experiment, and detect fluorescence changes after a certain period of culture. 4. Fluorescence detection: Detect the fluorescence changes of IDT307 by fluorescence microscopy or fluorescence microplate reader (usually using Ex: 485 nm, Em: 535 nm wavelength). A decrease in fluorescence intensity usually means the inhibitory effect of PMAT. 2. For DAT substrate characterization 1. Cell preparation: Perform experiments in neuronal cell lines with DAT expression. 2. Add IDT307: Dissolve IDT307 in an appropriate buffer and add it to the cell culture medium. 3. Fluorescence detection: At appropriate time points, measure the fluorescence signal by fluorescence microscopy or spectrophotometer to observe DAT-mediated IDT307 transport. III. Evaluation of dopamine transporter function 1. Cell preparation: Use cell lines with DAT expression, or extract neurons from mouse brain tissue for experiments. 2. Add IDT307: Add IDT307 to the culture medium and incubate the cells for a certain period of time.

Cell Research	3. Fluorescence detection: Use appropriate fluorescence detection equipment to monitor the changes in the fluorescence intensity of IDT307 and then evaluate the DAT function. The above information is based on published literature. Experimental procedures should be appropriately modified to meet specific research demands.

Solubility Information

Solubility	DMSO: 50 mg/mL (146.97 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween-80+45% Saline: 2.5 mg/mL (7.35 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	2.9394 mL	14.6972 mL	29.3945 mL
5 mM	0.5879 mL	2.9394 mL	5.8789 mL
10 mM	0.2939 mL	1.4697 mL	2.9394 mL
50 mM	0.0588 mL	0.2939 mL	0.5879 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

Sun A, Wang J. Evaluation of Blood-CSF Barrier Transport by Quantitative Real Time Fluorescence Microscopy. Pharm Res. 2022 Jul;39(7):1469-1480.
Ingram SM, et al. Optogenetically-induced multimerization of the dopamine transporter increases uptake and trafficking to the plasma membrane. J Biol Chem. 2021 Jan-Jun;296:100787.
Zhuang X,et al. Platelet serotonin and serotonin transporter as peripheral surrogates in depression and anxiety patients. Eur J Pharmacol. 2018 Sep 5;834:213-220.