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Produktinformation

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Lieferung & Zahlungsart

siehe unsere Liefer- und Versandbedingungen

Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

linkedin.com/company/szaboscandic

Rhodamine 110

Cat. No.: HY-D0817

CAS No.: 13558-31-1

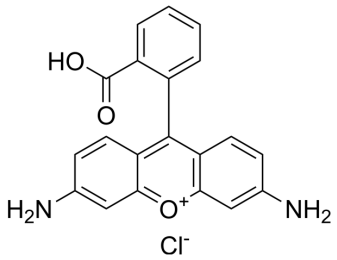
Molecular Formula: $C_{20}H_{15}ClN_2O_3$

Molecular Weight: 366.8

Target: Fluorescent Dye

Pathway: 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 : 30 mg/mL (81.79 mM; Need ultrasonic and warming)
H_2O : < 0.1 mg/mL (insoluble)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.7263 mL	13.6314 mL	27.2628 mL
	5 mM	0.5453 mL	2.7263 mL	5.4526 mL
	10 mM	0.2726 mL	1.3631 mL	2.7263 mL

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

BIOLOGICAL ACTIVITY

Description

Rhodamine 110 is a sensitive and selective substrate for assaying proteinases in solution or inside living cells. The excitation wavelength is 498 nm and the emission wavelength is 521 nm[1].

In Vitro

Rhodamine 110 accumulates in mitochondria in a cationic form, which alters the pH in this cellular compartment. Rhodamine 110 accumulates in human lymphoblastoid cells and Friend leukemia cells. No cytotoxicity to human lymphoblastoid cells is observed below 10 μM, but Rhodamine 110 causes Friend leukemia cells to die at a concentrations above 100 μM[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

Rhodamine 110 is less toxic than the parent molecule based on the intravenous LD_{50} acute toxicity values of 89.5 mg/kg and 140.0 mg/kg for Rhodamine B and Rhodamine 110, respectively. Both molecules induce liver and kidney enlargement after ingestion, and male rats show more significant increases than female rats after Rhodamine 110 exposure. In addition, testis weight increased in male rats dosed with Rhodamine 110. The pharmacokinetics of Rhodamine 110 are assessed following oral administration at two dosages (3 and 10 mg/kg) and intravenous administration at one dosage (3 mg/kg). Pharmacokinetic parameters are calculated using an extravascular input and IV-bolus input, noncompartmental model

analysis conducted with WinNonlin Standard Edition. The pharmacokinetic parameters of Rhodamine 110 indicates that the maximum plasma concentrations (C_{max}) of the two oral dosages are 283.4 and 657.0 ng/mL, which are reached at 140 and 210 min, respectively. This indicates that Rhodamine 110 absorption is not rapid after ingestion, as it took over 2 h to be absorbed from the intestines into the blood. The areas under the concentration–time curves (AUCs) for the two dosages are 138.1±20.3 and 444.0±170.8 h ng/mL. The pharmacokinetic data demonstrate that the AUC is proportional to the administered oral dose of Rhodamine 110 (3 mg/kg and 10 mg/kg). Furthermore, the clearance (Cl) of the two orally administered doses is 7.94 and 8.61 mL/min/kg, respectively[1].

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PROTOCOL

Animal Administration [1]

Rats[1]

Adult male Sprague-Dawley rats (230±20 g) are used. After the rats recovered, Rhodamine 110 in polyethylene glycol 400 (0.3 and 1 mg/mL) is administered at 3 mg/kg and 10 mg/kg by oral gavage. Blood samples (150 μL) are collected from the right jugular vein 5, 15, 30, 60, 120, 180, 240, 300, 360, 480, and 720 min after drug administration. After each sampling, 100 μL of normal saline is administered via catheter to compensate for the loss of body fluid, and a 50 μL heparin solution (20 IU heparin/mL normal saline) is provided to prevent coagulation. Blood samples are centrifuged at 16,000g for 10 min at 4 °C to obtain plasma, which is stored at -20 °C until analysis. After surgery, Rhodamine 110 in polyethylene glycol 400 (1 mg/mL) is administered intravenously to rats at 3 mg/kg (n=6). A 150 μL blood sample is collected from the right jugular vein 5, 15, 30, 60, 120, 180, 240, 300, 360, 480, and 720 min after drug administration. Then, 100 μL of normal saline is administered via the right jugular vein to compensate for body fluid loss, and 50 μL of a heparin solution (20 IU heparin/mL normal saline) is provided to prevent blood clotting.

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Jiang SH, et al. Pharmacokinetics of Rhodamine 110 and Its Organ Distribution in Rats. J Agric Food Chem. 2017 Sep 6;65(35):7797-7804.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA