Seratrodast

Cat. No.: HY-B0774

CAS No.: 112665-43-7

Molecular Formula: $C_{22}H_{26}O_4$

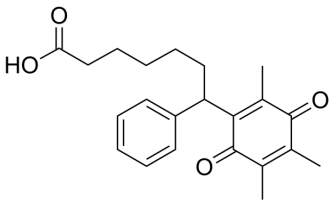
Molecular Weight: 354.44

Target: Ferroptosis; JNK; MDM-2/p53; Prostaglandin Receptor; Reactive Oxygen Species

Pathway: Apoptosis; MAPK/ERK Pathway; GPCR/G Protein; Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (282.14 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.8214 mL	14.1068 mL	28.2135 mL
	5 mM	0.5643 mL	2.8214 mL	5.6427 mL
	10 mM	0.2821 mL	1.4107 mL	2.8214 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (7.05 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Seratrodast (AA 2414), an orally active antiasthmatic agent, is a thromboxane A2 receptor (TP) antagonist and ferroptosis inhibitor. Seratrodast reduces lipid ROS production, modulates the systemic xc-/GSH/GPX4 axis, and inhibits JNK phosphorylation and p53 expression. Seratrodast exhibits anti-asthmatic and anti-epileptic activity[1][2][3].

IC_{50} & Target		
	TXA_2/TP	JNK

In Vitro

Pretreatment with Seratrodast (5 μM; 2 h) can inhibit ferroptosis induced by RSL3 (HY-100218A) or Erastin (HY-15763) in HT22 cells; and down-regulate the phosphorylation level of JNK[3]/ Pretreatment with s
Seratrodast (5, 10 μM; 2 h) can inhibit ROS generation and lipid peroxidation induced by 1 μM Erastin (HY-15763) in HT22 cell [3].

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

Cell Viability Assay[3]

Cell Line:	HT22 cells
Concentration:	2.5, 5, 10, or 20 μM
Incubation Time:	24 h
Result:	Did not show significant cytotoxicity at Seratrodast concentrations below 10 μM after 2 or 24 h. Prevented cell death in HT22 cells induced by ferroptosis inducer.

In Vivo

Seratrodast (3, 9, 20 mg/kg; po; pre-treated, once daily for 5 days) inhibits neuronal ferroptosis in the pentylenetetrazole-induced mouse epilepsy model, thereby reducing epileptic seizure[3].

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

CUSTOMER VALIDATION

- Int J Mol Sci. 2021, 22(7), 3323.
- Rheinische Friedrich-Wilhelms-Universität Bonn. 2023 May 31.
- Biomed Res Int. 2022 Sep 20;2022:8265898.
- Research Square Preprint. 2021 Mar.

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REFERENCES

[1]. Ashida, Y., et al., A novel anti-asthmatic quinone derivative, AA-2414 with a potent antagonistic activity against a variety of spasmogenic prostanoids. Prostaglandins, 1989. 38(1): p. 91-112.

[2]. Walsh, et al. Killian, AA-2414, an antioxidant and thromboxane receptor blocker, completely inhibits peroxide-induced vasoconstriction in the human placenta. J Pharmacol Exp Ther, 1999. 290(1): p. 220-6.

[3]. Hao Y, et al. Seratrodast, a thromboxane A2 receptor antagonist, inhibits neuronal ferroptosis by promoting GPX4 expression and suppressing JNK phosphorylation. Brain Res. 2022 Nov 15;1795:148073.

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