Sulfisoxazole

Cat. No.: HY-B0323

CAS No.: 127-69-5

Molecular Formula: $C_{11}H_{13}N_3O_3S$

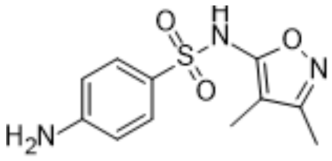
Molecular Weight: 267.3

Target: Bacterial; Endothelin Receptor; Antibiotic

Pathway: Anti-infection; GPCR/G Protein

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 150 mg/mL (561.17 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.7411 mL	18.7056 mL	37.4112 mL
5 mM	0.7482 mL	3.7411 mL	7.4822 mL
10 mM	0.3741 mL	1.8706 mL	3.7411 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: ≥ 2.5 mg/mL (9.35 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (9.35 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (9.35 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Sulfisoxazole (Sulfafurazole) is an orally active endothelin receptor antagonist with IC_{50} values of 0.60 μM and 22 μM against endothelin receptor A and endothelin receptor B, respectively. Sulfisoxazole is a sulfonamide antibacterial agent with an oxazole substituent. Sulfisoxazole inhibits breast cancer exosome release by targeting endothelin receptor A[1][2].

IC_{50} & Target

ET_A	ET_B
0.60 μM (IC_{50})	22 μM (IC_{50})

In Vitro

Sulfisoxazole (0-100 μM) inhibits the secretion of sEV in three representative human breast cell lines: MCF10A (normal), MCF7 (weakly invasive), and MDA-MB231 (highly invasive)[2].
Sulfisoxazole (200 μM, 48 h) together with αPD□L1 recovers the activity of CD8+ cytotoxic T cells by inhibiting secretion of cancer cell (MDA-MB-231) exosomal PD□L1[3].
Sulfisoxazole (100 μM, 72 h) inhibits the LPS induced elevation of nitric oxide and the reduction in GABA-containing neurones in a primary rat retinal culture[4].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Western Blot Analysis[1]

Cell Line:	MDA-MB-231 cell
Concentration:	100 μM
Incubation Time:	24 h
Result:	Reduced the expression of Rab27a.

In Vivo

Sulfisoxazole (p.o., 200 mg/kg, 14 days) inhibits tumor growth in mouse 4T1 breast cancer xenografts and female nude mice orthotopically implanted with MDA-MB231 cells[2].
Sulfisoxazole (p.o., 200 mg/kg) together with αPD□L1 (5 mg/kg, i.p.) reduces the tumor growth rate in CT26 tumor□bearing mice, and boosts the antitumor effect of αPD□1[3].
Sulfisoxazole (5 μL of 400 μM, injected into the vitreous humour of the ischemic eye) shows neuroprotection effect to the retina of rats with ischemia/reperfusion[4].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Chemosphere. 2023 Oct 3:344:140353.
- Biology (Basel). 2021, 10(8), 700.

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REFERENCES

[1]. Shin JM, et al. Sulfisoxazole Elicits Robust Antitumour Immune Response Along with Immune Checkpoint Therapy by Inhibiting Exosomal PD-L1. Adv Sci (Weinh). 2022 Feb;9(5):e2103245.

[2]. Syed H, et al. Sulfisoxazole, an endothelin receptor antagonist, protects retinal neurones from insults of ischemia/reperfusion or lipopolysaccharide. Neurochem Int. 2006 Jun;48(8):708-17.

[3]. Chan, M.F., et al., Identification of a new class of ETA selective endothelin antagonists by pharmacophore directed screening. Biochem Biophys Res Commun, 1994. 201(1): p. 228-34.

[4]. Im EJ, et al. Sulfisoxazole inhibits the secretion of small extracellular vesicles by targeting the endothelin receptor A. Nat Commun. 2019 Mar 27;10(1):1387.

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