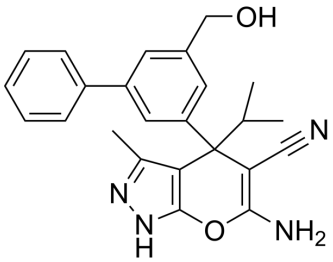
SHIN1

Cat. No.:	HY-112066
CAS No.:	2146095-85-2
Molecular Formula:	$C_{24}H_{24}N_4O_2$
Molecular Weight:	400.47
Target:	Others
Pathway:	Others

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 : 66.67 mg/mL (166.48 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.4971 mL	12.4853 mL	24.9707 mL
	5 mM	0.4994 mL	2.4971 mL	4.9941 mL
	10 mM	0.2497 mL	1.2485 mL	2.4971 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: ≥ 1.25 mg/mL (3.12 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 1.25 mg/mL (3.12 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 1.25 mg/mL (3.12 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

SHIN1 (RZ-2994) is a human serine hydroxymethyltransferse 1 and 2 (SHMT1/2) inhibitor with IC_{50}s of 5 and 13 nM, respectively, in an in vitro assay.

IC_{50} & Target

IC50: 5 nM (SHMT1), 13 nM (SHMT1)[1]

In Vitro

SHIN1 (RZ-2994) inhibits human SHIN1 SHMT1/2 with IC_{50}s of 5 and 13 nM, respectively in an in vitro assay. SHIN1 inhibits the growth of SHMT2 deletion HCT-116 cells with an IC_{50} of 10 nM. SHIN1 (RZ-2994) inhibits SHMT1/2 in HCT-116 cells. SHIN1

(RZ-2994) is particularly active against B-cell malignancies. SHIN1 blocks cell growth through a progressive depletion of purines, leading to loss of nucleotide triphosphates[1].

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

PROTOCOL

Cell Assay [1]

For proliferation assays, HCT-116 cells are treated with SHIN1 (1, 10, 100, 1000, 10000 nM) for 24-72 hours. Cell number was counted directly using Trypan blue and the Countess system[1].

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

CUSTOMER VALIDATION

- Cell Mol Immunol. 2023 May 23.
- Mol Cell. 2019 Sep 19;75(6):1147-1160.e5.
- J Clin Invest. 2023 May 30;e169993.
- Sci Adv. 2022 Dec 16;8(50):eabm7902.
- Commun Biol. 2022 Jun 23;5(1):619.

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REFERENCES

[1]. Ducker GS, et al. Human SHMT inhibitors reveal defective glycine import as a targetable metabolic vulnerability of diffuse large B-cell lymphoma. Proc Natl Acad Sci U S A. 2017 Oct 24;114(43):11404-11409.

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