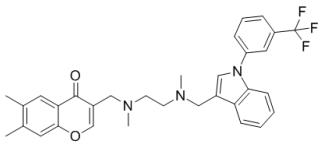
SPD304

Cat. No.:	HY-111255
CAS No.:	869998-49-2
Molecular Formula:	$C_{32}H_{32}F_3N_3O_2$
Molecular Weight:	547.61
Target:	TNF Receptor
Pathway:	Apoptosis
Storage:	Powder -20°C 3 years In solvent -80°C 6 months -20°C 1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 25 mg/mL (45.65 mM; Need ultrasonic)

H_2O : 20 mg/mL (36.52 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	1.8261 mL	9.1306 mL	18.2612 mL
	5 mM	0.3652 mL	1.8261 mL	3.6522 mL
	10 mM	0.1826 mL	0.9131 mL	1.8261 mL

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

BIOLOGICAL ACTIVITY

Description

SPD304 is a selective TNF-α inhibitor, which promotes dissociation of TNF trimers and therefore blocks the interaction of TNF and its receptor. SPD304 has an IC_{50} of 22 μM for inhibiting in vitro TNF receptor 1 (TNFR1) binding to TNF-α[1][2].

IC_{50} & Target

IC50: 22 μM (TNFα)[1].

In Vitro

SPD304 (2 μM) significantly rescues the survivability of aHSCs, reduces the production of lipid hydroxides, and increased intracellular GSH. The co-treatment of GA (75 μM) and SPD304 (2 μM), down-regulate TRADD almost 2-fold (w/o inhibitor vs. w/ inhibitor) and p−RIP3 1.4−fold compared to GA alone, and promotes caspase 8 activation[4].

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

In Vivo

SPD304 cannot be used in vivo due to its high toxicity[3].

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CUSTOMER VALIDATION

- Aging Cell. 2020 Oct;19(10):e13217.
- Cell Death Dis. 2020 Dec 11;11(12):1050.

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REFERENCES

[1]. Molly M. He, et al. Small-Molecule Inhibition of TNF-α. Science 11 Nov 2005.

[2]. Alexiou P, et al. Rationally designed less toxic SPD-304 analogs and preliminary evaluation of their TNF inhibitory effects. Arch Pharm (Weinheim). 2014 Nov;347(11):798-805.

[3]. Mouhsine H, et al. Identification of an in vivo orally active dual-binding protein-protein interaction inhibitor targeting TNFα through combined in silico/in vitro/in vivo screening. Sci Rep. 2017 Jun 13;7(1):3424.

[4]. Gallic acid induces necroptosis via TNF-α signaling pathway in activated hepatic stellate cells. Chang YJ, et al. PLoS One. 2015 Mar 27;10(3):e0120713.

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