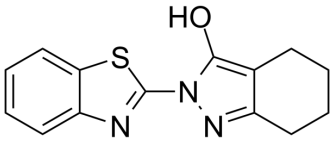
BD750

Cat. No.:	HY-131140
CAS No.:	892686-59-8
Molecular Formula:	$C_{14}H_{13}N_3OS$
Molecular Weight:	271.34
Target:	JAK; STAT
Pathway:	Epigenetics; JAK/STAT Signaling; Protein Tyrosine Kinase/RTK; Stem Cell/Wnt
Storage:	Powder -20°C 3 years In solvent -80°C 6 months -20°C 1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 125 mg/mL (460.68 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	3.6854 mL	18.4271 mL	36.8541 mL
	5 mM	0.7371 mL	3.6854 mL	7.3708 mL
	10 mM	0.3685 mL	1.8427 mL	3.6854 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: ≥ 2.08 mg/mL (7.67 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

BD750, an effective immunosuppressant and a JAK3/STAT5 inhibitor, inhibits IL-2-induced JAK3/STAT5-dependent T cell proliferation, with IC_{50} values of 1.5 μM and 1.1 μM in mouse and human T cells, respectively[1][2].

IC_{50} & Target	JAK3	STAT5

In Vitro

BD750 inhibits human T cell proliferation stimulated either by anti-CD3/anti-CD28 mAbs or by alloantigen in a dose-dependent manner with IC_{50} values of 1.1 ± 0.2 μM and 1.3 ± 0.2 μM respectively[1].

BD750 also inhibits ConA, PMA/ionomycine or alloantigen-induced mouse T cell proliferation and PHA or PMA/ionomycine-induced human T cell proliferation[1].

BD750 (5 or 20 μM) inhibits the LPS-induced JAK-STAT5 signaling in DC[2].

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

Western Blot Analysis[2]

Cell Line:	Purified immature DCs.
Concentration:	1, 5 or 20 μM.
Incubation Time:	12 h.
Result:	Had fewer small dendrites and smaller clusters than typical mDCs (5 or 20 μM). At a higher dose significantly reduced the levels of LPS-stimulated IL-6, IL-12, TNF-α, IL-1β and IL-23 production by DCs.

In Vivo

BD750 can induce tolerogenic dendritic cells (tolDC) and their function in experimental autoimmune encephalitis (EAE) in mice[2].

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

Animal Model:	Female C57BL/6 mice (10 wks old, 19-21 g)[2].
Dosage:	20 μM.
Administration:	IV, treated DC on d 7, 11 and 15 post the first PTX injection (dpi 7, 11 and 15).
Result:	Significantly reduced the frequency of Th1 and Th17 cells and increased the percentage of Tregs compared with mice receiving PBS.

CUSTOMER VALIDATION

- FASEB J. 2023 Jan;37(1):e22716.

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REFERENCES

[1]. Y Liu, et al. BD750, a benzothiazole derivative, inhibits T cell proliferation by affecting the JAK3/STAT5 signalling pathway. Br J Pharmacol. 2013 Feb;168(3):632-43.

[2]. Yan Zhou, et al. Tolerogenic dendritic cells induced by BD750 ameliorate proinflammatory T cell responses and experimental autoimmune encephalitis in mice. Mol Med. 2017 Oct;23:204-214.

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