5-BDBD

Cat. No.: HY-101911

CAS No.: 768404-03-1

Molecular Formula: $C_{17}H_{11}BrN_2O_2$

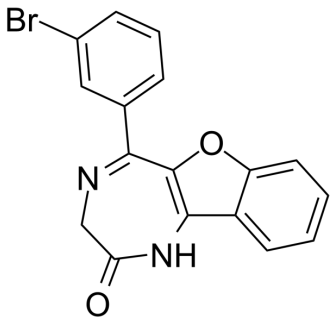
Molecular Weight: 355.19

Target: P2X Receptor

Pathway: Membrane Transporter/Ion Channel

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 : 62.5 mg/mL (175.96 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.8154 mL	14.0770 mL	28.1539 mL
	5 mM	0.5631 mL	2.8154 mL	5.6308 mL
	10 mM	0.2815 mL	1.4077 mL	2.8154 mL

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

In Vivo

1. Add each solvent one by one: 15% Solutol HS 15 >> 10% Cremophor EL >> 35% PEG 400 >> 40% water
   Solubility: 9.8 mg/mL (27.59 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (5.86 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (5.86 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

5-BDBD, a potent and selective P2X4 receptor antagonist, inhibits rP2X4R-mediated currents, with an IC_{50} of 0.75 μM. 5-BDBD completely blocks the basal and acute hyperalgesia induced by nitroglycerin (NTG)[1][2].

IC_{50} & Target

I50: 0.75 μM (P2X4 receptor)

In Vitro

5-BDBD inhibits 10 μM ATP-induced currents of rP2X4R-expressing HEK293 cells in a concentration-dependent manner, with an IC_{50} of 0.75 μM[1].

	5-BDBD displaces rightward the ATP concentration-response curve, with an EC_{50} of 4.7 to 15.9 μM[1]. 5-BDBD could be specifically used to discriminate between P2X1R, P2X2aR, P2X2bR, P2X3R, P2X4R, and P2X7R[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	5-BDBD (28 mg/kg; i.p.; daily for 9 days) can completely blocke the basal hyperalgesia induced by recurrent NTG injection[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male C57BL/6 mice[2]
Dosage:	28 mg/kg
Administration:	I.p.; daily for 9 days
Result:	Prevented NTG-induced mechanical hypersensitivity.

CUSTOMER VALIDATION

- Cell Mol Life Sci. 2022 Aug 16;79(9):483.
- Int Immunopharmacol. 2023 Jun 8;121:110462.

See more customer validations on www.MedChemExpress.com

REFERENCES

[1]. Coddou C, et al. Characterization of the antagonist actions of 5-BDBD at the rat P2X4 receptor. Neurosci Lett. 2019;690:219-224.

[2]. Long T, et al. Microglia P2X4 receptor contributes to central sensitization following recurrent nitroglycerin stimulation. J Neuroinflammation. 2018;15(1):245. Published 2018 Aug 30.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA