Pinaverium bromide

Cat. No.: HY-111613

CAS No.: 53251-94-8

Molecular Formula: $C_{26}H_{41}Br_2NO_4$

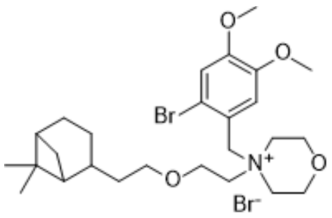
Molecular Weight: 591.42

Target: Calcium Channel

Pathway: Membrane Transporter/Ion Channel; Neuronal Signaling

Storage: -20°C, sealed storage, away from moisture

* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 50 mg/mL (84.54 mM; Need ultrasonic)

H_2O : 10 mg/mL (16.91 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions

Mass / Solvent / Concentration	1 mg	5 mg	10 mg
1 mM	1.6908 mL	8.4542 mL	16.9085 mL
5 mM	0.3382 mL	1.6908 mL	3.3817 mL
10 mM	0.1691 mL	0.8454 mL	1.6908 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: ≥ 2.08 mg/mL (3.52 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (3.52 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (3.52 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Pinaverium bromide is an L-type calcium channel blocker with selectivity for the gastrointestinal tract, effectively relieves pain, diarrhea and intestinal discomfort, provides good therapeutic efficacies without significant adverse effects on Irritable bowel syndrome (IBS) patients[1].

IC_{50} & Target

L-type calcium channel

In Vitro

Pinaverium bromide (0-30 μM, 24 h) inhibits GM-CSF or CXCL1/CXCL2 induced neutrophil migration, and inhibits ROS production in the presence of 0.1 ng/mL GM-CSF in purified neutrophils from mouse bone marrow[2].

	Pinaverium bromide (3 μM, 16 h) inhibits the GM-CSF induced expression of cytokines (IL-1β, IL-6, and TNF-α) in primed neutrophils from mouse bone marrow[2]. Pinaverium bromide inhibits the contractile response to ACh or KCl in the control or stressed colonic circular muscle, with IC_{50}s of 1.66 and 0.91 μM respectively[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Pinaverium bromide (1-10 mg/kg, i.p.) inhibits excessive systemic inflammation in Lipopolysaccharide (HY-D1056)-induced mice[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Lipopolysaccharide (HY-D1056)-induced mice[2]
Dosage:	1-10 mg/kg
Administration:	i.p.
Result:	Increased survival rate.Inhibit LPS-induced lung injury and neutrophil infiltration, and reduced liver injury.Inhibited serum concentration of IL-1β, IL-6, and TNF-α.

CUSTOMER VALIDATION

- Cell. 2023 Nov 22;186(24):5363-5374.e16.
- Nat Metab. 2023 Sep;5(9):1494-1505.
- ACS Omega. 2023 Mar 6.

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REFERENCES

[1]. Chen X, et al. Pinaverium Bromide Attenuates Lipopolysaccharide-Induced Excessive Systemic Inflammation via Inhibiting Neutrophil Priming. J Immunol. 2021 Apr 15;206(8):1858-1865.

[2]. Dai Y, et al. Effect of pinaverium bromide on stress-induced colonic smooth muscle contractility disorder in rats. World J Gastroenterol. 2003 Mar;9(3):557-61.

[3]. Dai Y, et al. Effect of pinaverium bromide on stress-induced colonic smooth muscle contractility disorder in rats. World J Gastroenterol. 2003 Mar;9(3):557-61.

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