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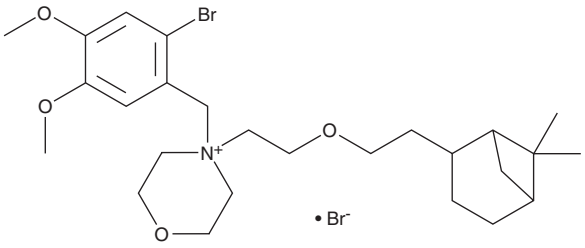
PRODUCT INFORMATION

Pinaverium (bromide)

Item No. 40653

CAS Registry No.: 53251-94-8
Formal Name: 4-[(2-bromo-4,5-dimethoxyphenyl) methyl]-4-[2-[2-(6,6-dimethylbicyclo[3.1.1]hept-2-yl)ethoxy] ethyl]-morpholinium, monobromide
Synonym: PVB
MF: $C_{26}H_{41}BrNO_4$ • Br
FW: 591.4
Purity: ≥98%
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Pinaverium (bromide) is supplied as a solid. A stock solution may be made by dissolving the pinaverium (bromide) in the solvent of choice, which should be purged with an inert gas. Pinaverium (bromide) is soluble (≥10 mg/ml) in ethanol and DMSO.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of pinaverium (bromide) can be prepared by directly dissolving the solid in aqueous buffers. Pinaverium (bromide) is soluble (≥10 mg/ml) in PBS (pH 7.2). We do not recommend storing the aqueous solution for more than one day.

Description

Pinaverium is an inhibitor of L-type voltage-gated calcium channels (Ca_v; IC_{50} = 1.5 µM in a patch-clamp assay using isolated rabbit jejunal smooth muscle cells).[1,2] It binds to CHO cells expressing the $Ca_v1.2$ $\alpha_{1C\text{-}a}$ or $\alpha_{1C\text{-}b}$ subunits (K_is = 1.5 and 2.92 µM, respectively).[1] Pinaverium inhibits contractions induced by acetylcholine (ACh; Item No. 23829) or potassium chloride in colonic circular muscle strips isolated from non-stressed or cold-restraint-stressed rats (IC_{50}s = 0.91 and 1.66 µM for ACh, respectively, and 3.8 and 8.13 µM for potassium chloride, respectively) in a model of stress-induced smooth muscle contractility disorder.[3] It increases survival and decreases pulmonary neutrophil infiltration in a mouse model of LPS-induced septic shock when administered at doses ranging from 1 to 10 mg/kg.[4] Formulations containing pinaverium have been used in the treatment of irritable bowel syndrome (IBS).

References

1. Morel, N., Buryi, V., Feron, O., *et al.* The action of calcium channel blockers on recombinant L-type calcium channel α_1-subunits. *Br. J. Pharmacol.* **125(5)**, 1005-1012 (1998).
2. Beech, D.J., Mackenzie, I., Bolton, T.B., *et al.* Effects of pinaverium on voltage-activated calcium channel currents of single smooth muscle cells isolated from the longitudinal muscle of the rabbit jejunum. *Br. J. Pharmacol.* **99(2)**, 374-378 (1990).
3. Dai, Y., Liu, J.-X., Li, J.-X., *et al.* Effect of pinaverium bromide on stress-induced colonic smooth muscle contractility disorder in rats. *World J. Gastroenterol.* **9(3)**, 557-561 (2003).
4. Chen, X., Liu, Y., Dolin, H., *et al.* Pinaverium bromide attenuates lipopolysaccharide-induced excessive systemic inflammation via inhibiting neutrophil priming. *J. Immunol.* **206(8)**, 1858-1865 (2021).

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