Mosapride citrate

Cat. No.: HY-B0189A

CAS No.: 112885-42-4

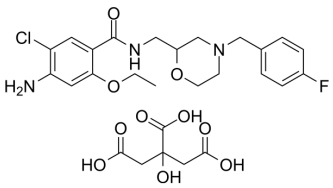
Molecular Formula: $C_{27}H_{33}ClFN_3O_{10}$

Molecular Weight: 614.02

Target: 5-HT Receptor; Potassium Channel; Cytochrome P450

Pathway: GPCR/G Protein; Neuronal Signaling; Membrane Transporter/Ion Channel; Metabolic Enzyme/Protease

Storage: 4°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 : 100 mg/mL (162.86 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	1.6286 mL	8.1431 mL	16.2861 mL
	5 mM	0.3257 mL	1.6286 mL	3.2572 mL
	10 mM	0.1629 mL	0.8143 mL	1.6286 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: ≥ 2.5 mg/mL (4.07 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (4.07 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (4.07 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Mosapride citrate is an orally active gastroenterokinetic compound. Mosapride citrate is a 5HT4 agonist. Mosapride citrate is a CYP inducer. Mosapride citrate has a concentration-dependent inhibitory effect on Kv4.3, and its IC_{50} value is 15.2 μM. Mosapride citrate can be used in the study of gastrointestinal diseases[1][2][3][4][5][6][7].

IC_{50} & Target

5-HT_4 Receptor

In Vitro

Mosapride citrate (1-100 nM) significantly increases the average amplitude of proximal and distal colon contraction, and shortens the transport time of proximal and distal colon in guinea-pig[3].

	Mosapride citrate (869 ng/mL, 48 h) increases the induction ability of Cytochrome P450 (CYP1A2, 2B6 and 3A4) in human hepatocytes (HMC424, 478 and 493)[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Mosapride citrate (0.3-3 mg/kg or 30 mg/kg, p.o) promotes gastric empting rats in a dose-dependent manner. Gastric emptying was significantly inhibited when the dose was 30 mg/kg[5]. Mosapride citrate (0.5 mg/kg, p.o) can relieve NSAIDS induced ulcer by activating 5-HT4 receptor in rats[6]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	NSAID-induced experimental ulcer model[6]
Dosage:	0.25, 0.5 , 0.75 mg/kg
Administration:	p.o
Result:	Inhibited the mucosal damage.

CUSTOMER VALIDATION

- J Appl Microbiol. 2023 Jul 22;lxad153.
- Chin J Integr Med. 2022 Aug 31.
- Drug Metab Pharmacokinet. 2020 Feb;35(1):102-110.

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REFERENCES

[1]. Kim HS, et al. The effect of mosapride citrate on proximal and distal colonic motor function in the guinea-pig in vitro. Neurogastroenterol Motil. 2008 Feb;20(2):169-76.

[2]. Kim YH, et al. Measurement of Human Cytochrome P450 Enzyme Induction Based on Mesalazine and Mosapride Citrate Treatments Using a Luminescent Assay. Biomol Ther (Seoul). 2015 Sep;23(5):486-92.

[3]. Uchida M, et al. Dual role of mosapride citrate hydrate on the gastric emptying evaluated by the breath test in conscious rats. J Pharmacol Sci. 2013;121(4):282-7.

[4]. Fujisawa M, et al. The 5-HT4 receptor agonist mosapride attenuates NSAID-induced gastric mucosal damage. J Gastroenterol. 2010 Feb;45(2):179-86.

[5]. Sung KW, et al. Effect of mosapride on Kv4.3 potassium channels expressed in CHO cells. Naunyn Schmiedebergs Arch Pharmacol. 2013 Oct;386(10):905-16.

[6]. Tack J, et al. Systematic review: cardiovascular safety profile of 5-HT(4) agonists developed for gastrointestinal disorders. Aliment Pharmacol Ther. 2012 Apr;35(7):745-67.

[7]. Curran MP, et al. Mosapride in gastrointestinal disorders. Drugs. 2008;68(7):981-91.

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