Pumaprazole

Cat. No.: HY-19223

CAS No.: 158364-59-1

Molecular Formula: $C_{19}H_{22}N_4O_2$

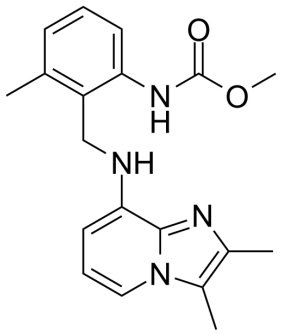
Molecular Weight: 338.4

Target: Proton Pump

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 : 100 mg/mL (295.51 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.9551 mL	14.7754 mL	29.5508 mL
5 mM	0.5910 mL	2.9551 mL	5.9102 mL
10 mM	0.2955 mL	1.4775 mL	2.9551 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 (7.39 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 2.5 mg/mL (7.39 mM); Suspended solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

Pumaprazole is a reversible proton pump antagonist.

IC_{50} & Target

proton pump[1]

In Vivo

Pumaprazole is a reversible proton pump antagonist. Basal acid secretion in the Ghosh-Schild rat is inhibited by Pumaprazole with a higher efficacy compare to ranitidine. Pumaprazole displays identical ID_{50} values on day 1 (11 μmol/kg, 95% confidence limits of 5 and 23) and on day 7 (10 μmol/kg, 95% confidence limits of 4 and 23) of a repeated dose study in this model. The lower dose of Pumaprazole (27 μmol/kg) rapidly elevates luminal pH up to almost neutrality, the higher dose (54 μmol/kg) further prolongs this pH-elevating effect[1].

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

PROTOCOL

Animal Administration [1]

The pylorus of female Sprague-Dawley rats (160 to 220 g body weight) is ligated under ether anesthesia, the abdomen is closed and 100 mg/kg of acetylsalicylic acid (ASA) in 10 mL/kg are given orally. Following ASA administration, Pumaprazole (solution) or vehicle (i.v. saline or tap water in case of oral administration) is given i.v. in 1 mL/kg or i.d. in 2.5 mL/kg. Oral drug administration (in 10 mL/kg) is 1 h before pylorus ligation. Four hours after pylorus ligation, the stomach is excised, carefully keeping the esophagus closed, opened along the greater curvature and the luminal contents are removed, centrifuged, the volume is measured and the acidity determined by titration with 0.1 N NaOH to pH 7[1].

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REFERENCES

[1]. Kromer W, et al. Animal pharmacology of reversible antagonism of the gastric acid pump, compared to standard antisecretory principles. Pharmacology. 2000 May;60(4):179-87.

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