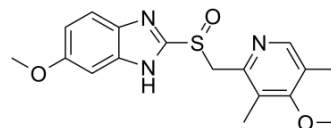


Omeprazole

Cat. No.:	HY-B0113												
CAS No.:	73590-58-6												
Molecular Formula:	C ₁₇ H ₁₉ N ₃ O ₃ S												
Molecular Weight:	345.42												
Target:	Proton Pump; Autophagy; Bacterial; Phospholipase												
Pathway:	Membrane Transporter/Ion Channel; Autophagy; Anti-infection; Metabolic Enzyme/Protease												
Storage:	<table border="0"> <tr> <td>Powder</td> <td>-20°C</td> <td>3 years</td> </tr> <tr> <td></td> <td>4°C</td> <td>2 years</td> </tr> <tr> <td>In solvent</td> <td>-80°C</td> <td>6 months</td> </tr> <tr> <td></td> <td>-20°C</td> <td>1 month</td> </tr> </table>	Powder	-20°C	3 years		4°C	2 years	In solvent	-80°C	6 months		-20°C	1 month
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 (289.50 mM)
 H₂O : < 0.1 mg/mL (insoluble)
 * "≥" means soluble, but saturation unknown.

Concentration	Solvent	Mass		
		1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM	2.8950 mL	14.4751 mL	28.9503 mL
	5 mM	0.5790 mL	2.8950 mL	5.7901 mL
	10 mM	0.2895 mL	1.4475 mL	2.8950 mL

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

In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
 Solubility: ≥ 2.5 mg/mL (7.24 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
 Solubility: ≥ 2.5 mg/mL (7.24 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
 Solubility: ≥ 2.5 mg/mL (7.24 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Omeprazole (H 16868), a proton pump inhibitor (PPI), is available for treatment of acid-related gastrointestinal disorders. Omeprazole shows competitive inhibition of CYP2C19 activity with a K_i of 2 to 6 μM^[1]. Omeprazole also inhibits growth of Gram-positive and Gram-negative bacteria^[2]. Omeprazole is a potent brain penetrant neutral sphingomyelinase (N-SMase) inhibitor (exosome inhibitor)^[3].

IC ₅₀ & Target	Proton Pump ^[1]
In Vitro	<p>Omeprazole (H 16868) is a proton pump inhibitor used in the treatment of dyspepsia, peptic ulcer disease, gastroesophageal reflux disease, laryngopharyngeal reflux, and Zollinger-Ellison syndrome. Omeprazole (H 16868) virtually eliminated intragastric acidity in all patients: the median 24 hour intragastric pH rose from 1.4 to 5.3 and the mean hourly hydrogen ion activity fell from 38.50 to 1.95 mmol(mEq)/1 (p less than 0.001). This inhibition of 24 hour intragastric acidity is more profound than that previously reported with either cimetidine 1 g daily or ranitidine 300 mg daily^[1]. The pharmacokinetics of omeprazole were studied in a group of healthy male subjects after single and repeated oral doses of 30 and 60 mg. Absorption of Omeprazole (H 16868) from its enteric-coated formulation was unpredictable. There was a highly significant increase in the area under the plasma concentration time curve (AUC) after repeated dosing. Omeprazole (H 16868) increases its own relative availability following repeated dosing. This may be due to inhibition of gastric acid secretion by omeprazole which is an acid-labile compound^[2].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>

REFERENCES

- [1]. Li XQ, et al. Comparison of inhibitory effects of the proton pump-inhibiting drugs omeprazole, esomeprazole, lansoprazole, pantoprazole, and rabeprazole on human cytochrome P450 activities. *Drug Metab Dispos.* 2004 Aug;32(8):821-7.
- [2]. Jonkers D, et al. Omeprazole inhibits growth of gram-positive and gram-negative bacteria including *Helicobacter pylori* in vitro. *J Antimicrob Chemother.* 1996 Jan;37(1):145-50.
- [3]. Huarui Zhang, et al. Advances in the discovery of exosome inhibitors in cancer. *J Enzyme Inhib Med Chem.* 2020 Dec;35(1):1322-1330.

Caution: Product has not been fully validated for medical applications. For research use only.

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