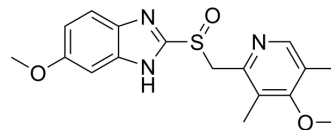


## Omeprazole

<b>Cat. No.:</b>	HY-B0113												
<b>CAS No.:</b>	73590-58-6												
<b>Molecular Formula:</b>	C <sub>17</sub> H <sub>19</sub> N <sub>3</sub> O <sub>3</sub> S												
<b>Molecular Weight:</b>	345.42												
<b>Target:</b>	Proton Pump; Autophagy; Bacterial; Phospholipase												
<b>Pathway:</b>	Membrane Transporter/Ion Channel; Autophagy; Anti-infection; Metabolic Enzyme/Protease												
<b>Storage:</b>	<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
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	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)  
 H<sub>2</sub>O : < 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<sub>i</sub> of 2 to 6 μM<sup>[1]</sup>. Omeprazole also inhibits growth of Gram-positive and Gram-negative bacteria<sup>[2]</sup>. Omeprazole is a potent brain penetrant neutral sphingomyelinase (N-SMase) inhibitor (exosome inhibitor)<sup>[3]</sup>.

IC <sub>50</sub> & Target	Proton Pump <sup>[1]</sup>
In Vitro	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 shows inhibition of gastric acid secretion which is an acid-labile compound <sup>[2]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## CUSTOMER VALIDATION

- Nat Commun. 2023 Jul 14;14(1):4217.
- Adv Sci (Weinh). 2023 Apr 24;e2207017.

See more customer validations on [www.MedChemExpress.com](http://www.MedChemExpress.com)

## 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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