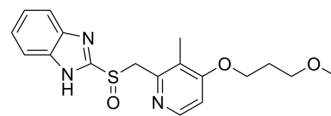


Rabeprazole

Cat. No.:	HY-B0656
CAS No.:	117976-89-3
Molecular Formula:	C ₁₈ H ₂₁ N ₃ O ₃ S
Molecular Weight:	359.44
Target:	Proton Pump; Apoptosis; Bacterial
Pathway:	Membrane Transporter/Ion Channel; Apoptosis; Anti-infection
Storage:	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro	DMSO : 20.83 mg/mL (57.95 mM; Need ultrasonic)																							
	<table border="1"> <thead> <tr> <th rowspan="2">Preparing Stock Solutions</th> <th rowspan="2">Solvent Concentration</th> <th colspan="3">Mass</th> </tr> <tr> <th>1 mg</th> <th>5 mg</th> <th>10 mg</th> </tr> </thead> <tbody> <tr> <td></td> <td>1 mM</td> <td>2.7821 mL</td> <td>13.9105 mL</td> <td>27.8211 mL</td> </tr> <tr> <td></td> <td>5 mM</td> <td>0.5564 mL</td> <td>2.7821 mL</td> <td>5.5642 mL</td> </tr> <tr> <td></td> <td>10 mM</td> <td>0.2782 mL</td> <td>1.3911 mL</td> <td>2.7821 mL</td> </tr> </tbody> </table>	Preparing Stock Solutions	Solvent Concentration	Mass			1 mg	5 mg	10 mg		1 mM	2.7821 mL	13.9105 mL	27.8211 mL		5 mM	0.5564 mL	2.7821 mL	5.5642 mL		10 mM	0.2782 mL	1.3911 mL	2.7821 mL
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	Please refer to the solubility information to select the appropriate solvent.																							
In Vivo	1. Rabeprazole was dissolved in distilled water ^[3] .																							

BIOLOGICAL ACTIVITY

Description	Rabeprazole (LY307640) is a second-generation proton pump inhibitor (PPI) that irreversibly inactivates gastric H ⁺ /K ⁺ -ATPase. Rabeprazole induces apoptosis. Rabeprazole acts as an uridine nucleoside ribohydrolase (UNH) inhibitor with an IC ₅₀ of 0.3 μM. Rabeprazole can be used for the research of gastric ulcerations and gastroesophageal reflux ^{[1][2][3]} .
IC₅₀ & Target	Pump inhibitor (PPI) ^[1] IC50: 0.3 μM (UNH) ^[1] H ⁺ /K ⁺ -ATPase ^[2] Apoptosis ^[2]
In Vitro	Rabeprazole attenuates the cell viability of the human gastric cancer cells following treatment with 0.2 mM for 16 hours ^[2] . Rabeprazole completely inhibits the phosphorylation of ERK1/2 in the MKN-28 cells. The gastric cancer cell line MKN-28 is cultured in acidic culture media (pH 5.4) for 2 hours. Pretreatment with Rabeprazole (0.2 mM for 2 hours) leads to strong inhibition of ERK1/2 phosphorylation in the MKN-28 cells ^[2] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay^[2]

Cell Line:	Three gastric cancer cell lines KATO III, MKN-28 and MKN-45
Concentration:	0.2 mM
Incubation Time:	16 hours
Result:	Treatment resulted in the attenuation of viability in all cancer cell lines tested, the cell viability of the MKN-28 cells significantly decreased compared with the KATO III and MKN-45 cells, respectively.

Cell Viability Assay^[2]

Cell Line:	Three gastric cancer cell lines (KATO III, MKN-28 and MKN-45) ^[2]
Concentration:	0.2 mM
Incubation Time:	Pretreatment for 2 hours
Result:	Led to strong inhibition of ERK 1/2 phosphorylation in the MKN-28 cells, but a similar effect was not observed in the KATO III and MKN-45 cells.

In Vivo

Rabeprazole (10 mg/kg; P.O.; every 48 h for 18 weeks) course leads to a significant decline in bone mineral density (BMD) and decreases serum calcium level and produces secondary hyperparathyroidism in female mice^[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Female Swiss albino mice (body weight equals 18-26 g) ^[3]
Dosage:	10 mg/kg
Administration:	Oral administration; every 48 h for 18 weeks
Result:	Showed significantly lower serum calcium level compared to the vehicle treated group (5.5±2.07 vs. 9.68±2.77).

CUSTOMER VALIDATION

- Nat Commun. 2023 Jul 14;14(1):4217.
- Front Immunol. 2022 Jun 21;13:895869.

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REFERENCES

- [1]. Tara A Shea, et al. Identification of Proton-Pump Inhibitor Drugs That Inhibit Trichomonas Vaginalis Uridine Nucleoside Ribohydrolase. Bioorg Med Chem Lett. 2014 Feb 15;24(4):1080-4.
- [2]. Aly A M Shaalan, et al. Supplement With Calcium or Alendronate Suppresses Osteopenia Due to Long Term Rabeprazole Treatment in Female Mice: Influence on Bone TRAP and Osteopontin Levels. Front Pharmacol. 2020 May 13;11:583.
- [3]. Mengli Gu, et al. Rabeprazole Exhibits Antiproliferative Effects on Human Gastric Cancer Cell Lines. Oncol Lett. 2014 Oct;8(4):1739-1744.

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

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