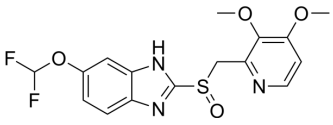
# Pantoprazole

| | |
|---|---|
| **Cat. No.:** | HY-17507 |
| **CAS No.:** | 102625-70-7 |
| **Molecular Formula:** | $C_{16}H_{15}F_2N_3O_4S$ |
| **Molecular Weight:** | 383.37 |
| **Target:** | Proton Pump; Autophagy; Apoptosis; Bacterial |
| **Pathway:** | Membrane Transporter/Ion Channel; Autophagy; Apoptosis; Anti-infection |
| **Storage:** | Please store the product under the recommended conditions in the Certificate of Analysis. |



## BIOLOGICAL ACTIVITY

| | |
|---|---|
| **Description** | Pantoprazole (BY10232) is an orally active and potent proton pump inhibitor (PPI)[1]. Pantoprazole, a substituted benzimidazole, is a potent $H^+/K^+$-ATPase inhibitor with an $IC_{50}$ of 6.8 μM. Pantoprazole improves pH stability and has anti-secretory, anti-ulcer activities. Pantoprazole significantly increased tumor growth delay combined with Doxorubicin (HY-15142)[3][4]. |
| **$IC_{50}$ & Target** | proton pump |
| **In Vitro** | Pantoprazole (BY1023; 1-10000 μM) leads to concentration-dependent increases in endosomal pH in EMT-6 and MCF7 cells[1].<br>Pantoprazole (BY10232) can block exosome release. Pantoprazole (BY10232) inhibits the activity of V-$H^+$-ATPase and impaires the ability of tumour cells (melanomas, adenocarcinomas, and lymphoma cell lines) to acidify the extracellular medium[2]<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |
| **In Vivo** | Pantoprazole (BY1023; 200 mg/kg; IP; once a week for 3 weeks) significantly increases tumor growth delay of MCF-7 xenografts combined with Doxorubicin[1].<br>Pantoprazole (0.3-3 mg/kg, p.o.) dose-dependently decreases both basal acid secretion in pylorus-ligated rats and the stimulated acid secretion induced by mepirizole in acute fistula rats[4].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

| | |
|---|---|
| Animal Model: | Mice bearing MCF-7 or A431 xenografts[1] |
| Dosage: | 200 mg/kg |
| Administration: | IP; once a week for 3 weeks; alone or 2 hours before Doxorubicin (6 mg/kg i.v.) |
| Result: | Showed even greater growth delay of MCF-7 xenografts with Doxorubicin compared with the single-dose combination.<br>Significantly increased tumor growth delay with a single dose with Doxorubicin.<br>There is no effect on growth delay alone. |

## CUSTOMER VALIDATION

- Cell Metab. 2022 Feb 7;34(3):424-440.e7.
- Front Oncol. 2021 Jul 7;11:660320.

See more customer validations on www.MedChemExpress.com

## REFERENCES


[1]. Krupa J Patel, et al. Use of the proton pump inhibitor pantoprazole to modify the distribution and activity of doxorubicin: a potential strategy to improve the therapy of solid tumors. Clin Cancer Res. 2013 Dec 15;19(24):6766-76.

[2]. Huarui Zhang, et al. Advances in the discovery of exosome inhibitors in cancer. J Enzyme Inhib Med Chem. 2020 Dec;35(1):1322-1330.

[3]. W Beil, et al. Pantoprazole: a novel H+/K(+)-ATPase inhibitor with an improved pH stability. Eur J Pharmacol. 1992 Aug 6;218(2-3):265-71.

[4]. K Takeuchi, et al. Effects of pantoprazole, a novel H+/K+-ATPase inhibitor, on duodenal ulcerogenic and healing responses in rats: a comparative study with omeprazole and lansoprazole. J Gastroenterol Hepatol. 1999 Mar;14(3):251-7.



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



Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA