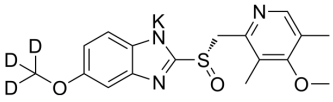
Esomeprazole-d_3 potassium

Cat. No.:	HY-17021S2
Molecular Formula:	$C_{17}H_{15}D_3KN_3O_3S$
Molecular Weight:	386.52
Target:	Bacterial; Proton Pump; Isotope-Labeled Compounds
Pathway:	Anti-infection; Membrane Transporter/Ion Channel; Others
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Esomeprazole-d_3 potassium is deuterated labeled Esomeprazole (HY-17021). Esomeprazole ((S)-Omeprazole) is a potent and orally active proton pump inhibitor and reduces acid secretion through inhibition of the H^+, K^+-ATPase in gastric parietal cells. Esomeprazole has the potential for symptomatic gastroesophageal reflux disease research[1][2][3].
In Vitro	Stable heavy isotopes of hydrogen, carbon, and other elements have been incorporated into drug molecules, largely as tracers for quantitation during the drug development process. Deuteration has gained attention because of its potential to affect the pharmacokinetic and metabolic profiles of drugs[1]. Esomeprazole (25-100 μM; 20 hours; MDA-MB-468 cells) treatment suppresses growth of triple-negative breast cancer cell in vitro in a dose-dependent manner through increase in their intracellular acidification[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Esomeprazole (30-300 mg/kg; oral gavage; daily; for 19 or 11 days; C57BL/6J mice) treatment significantly inhibits the progression of fibrosis throughout the lungs of the animals. Esomeprazole also reduces circulating markers of inflammation and fibrosis[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Wayne Goh, et al. Use of proton pump inhibitors as adjunct treatment for triple-negative breast cancers. An introductory study. J Pharm Pharm Sci. 2014;17(3):439-46.

[2]. Christina Nelson, et al. Therapeutic Efficacy of Esomeprazole in Cotton Smoke-Induced Lung Injury Model. Front Pharmacol. 2017 Jan 26;8:16.

[3]. Thomas J Johnson, et al. Esomeprazole: a clinical review. Am J Health Syst Pharm. 2002 Jul 15;59(14):1333-9.

[4]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. Ann Pharmacother. 2019 Feb;53(2):211-216.

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

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