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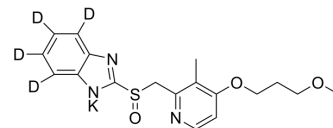
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Rabeprazole-d₄ potassium

Cat. No.:	HY-B0656AS2
Molecular Formula:	C ₁₈ H ₁₆ D ₄ KN ₃ O ₃ S
Molecular Weight:	401.56
Target:	Apoptosis; Bacterial; Proton Pump; Isotope-Labeled Compounds
Pathway:	Apoptosis; Anti-infection; Membrane Transporter/Ion Channel; Others
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Rabeprazole-d ₄ potassium is deuterated labeled Rabeprazole sodium (HY-B0656A). Rabeprazole sodium (LY307640 sodium) is a second-generation proton pump inhibitor (PPI) that irreversibly inactivates gastric H ⁺ /K ⁺ -ATPase. Rabeprazole sodium induces apoptosis. Rabeprazole sodium acts as an uridine nucleoside ribohydrolase (UNH) inhibitor with an IC ₅₀ of 0.3 μM. Rabeprazole sodium can be used for the research of gastric ulcerations and gastroesophageal reflux ^{[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]. Rabeprazole attenuates the cell viability of the human gastric cancer cells following treatment with 0.2 mM for 16 hours^[3]. 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 ERK 1/2 phosphorylation in the MKN-28 cells^[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
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^[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

- [1]. 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.
- [2]. 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.
- [3]. Mengli Gu, et al. Rabeprazole Exhibits Antiproliferative Effects on Human Gastric Cancer Cell Lines. *Oncol Lett.* 2014 Oct;8(4):1739-1744.
- [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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