

Product Data Sheet

Product Name: Tenatoprazole sodium

Cat. No.: GC37756

Chemical Properties

Cas. No. 335299-59-7

SMILES CC(C(OC)=C(C)C=N1)=C1CS(C2=NC3=NC(OC)=CC=C3N2)=O.[Na]

Formula $C_{16}H_{18}N_4NaO_3S$ M.Wt 369.39

Solubility Soluble in DMSO Storage Store at -20°C

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

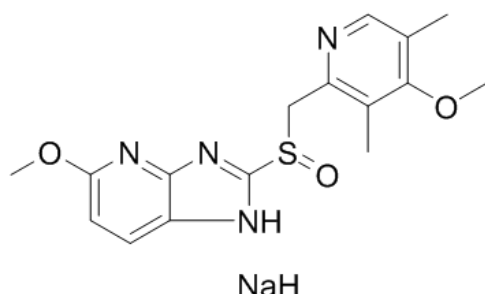
Caution: Product has not been fully validated for medical applications. For research use only.

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Structure



Background

Tenatoprazole sodium (TU-199 sodium) is a proton pump inhibitor; inhibits hog gastric H⁺/K⁺-ATPase with an IC₅₀ of 6.2 μM. IC₅₀: 6.2 μM (H⁺/K⁺-ATPase)[1]

Tenatoprazole inhibits hog gastric H⁺/K⁺-ATPase activity with almost equal potency to that of omeprazole (IC₅₀=6.2 and 4.2 microM, respectively)[1]. Tenatoprazole is a prodrug of the proton pump inhibitor class. Tenatoprazole is converted to the active sulfenamide or sulfenic acid by acid in the secretory canaliculus of the stimulated parietal cell of the stomach. This active species binds to lumenally accessible cysteines of the gastric H⁺/K⁺-ATPase resulting in disulfide formation and acid secretion inhibition. Tenatoprazole binds at the catalytic subunit of the gastric acid pump with a stoichiometry of 2.6 nmol/mg of the enzyme[2].

Tenatoprazole inhibits basal gastric acid secretion in pylorus-ligated rats in a dose-dependent

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manner (ED₅₀=4.2 mg/kg p.o.). In gastric fistula rats, tenatoprazole (2.5 and 5 mg/kg i.d.) also inhibits gastric acid secretion stimulated by histamine, carbachol or tetragastrin. Furthermore, tenatoprazole prevents the formation of water-immersion restraint stress-, pylorus ligation- and indomethacin-induced gastric lesions, and mepirizole-induced duodenal ulcer in rats[1]. Maximum binding of tenatoprazole is 2.9 nmol/mg of the enzyme at 2 h after IV administration. The binding sites of tenatoprazole are in the TM5/6 region at Cys813 and Cys822. The bioavailability of tenatoprazole is two-fold greater in the (S)-tenatoprazole sodium salt hydrate form as compared to the free form in dogs[2].

[1]. Shin JM, et al. Characterization of the inhibitory activity of tenatoprazole on the gastric H⁺,K⁺ - ATPase in vitro and in vivo. *Biochem Pharmacol.* 2006 Mar 14;71(6):837-49. [2].
<https://www.ncbi.nlm.nih.gov/pubmed/16405921>

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