Ilaprazole sodium hydrate

Cat. No.: HY-B2145A

CAS No.: 2322264-11-7

Molecular Formula: $C_{19}H_{21}N_4NaO_4S$

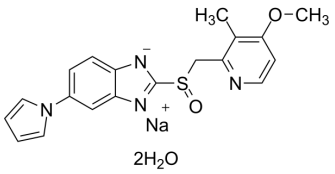
Molecular Weight: 424.45

Target: Proton Pump; TOPK

Pathway: Membrane Transporter/Ion Channel; Cell Cycle/DNA Damage

Storage: 4°C, sealed storage, away from moisture

* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



BIOLOGICAL ACTIVITY

Description

Ilaprazole (IY-81149) sodium hydrate is an orally active proton pump inhibitor. Ilaprazole sodium hydrate irreversibly inhibits H^+/K^+-ATPase in a dose-dependent manner with an IC_{50} of 6 μM in rabbit parietal cell preparation. Ilaprazole sodium hydrate is used for the research of gastric ulcers. Ilaprazole sodium hydrate is also a potent TOPK (T-lymphokine-activated killer cell-originated protein kinase) inhibitor[1][2].

In Vitro

On cumulation of 14C-aminopyrine in histamine stimulated parietal cells, the IC_{50} of Ilaprazole (IY-81149) sodium hydrate is 9 nM[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

Ilaprazole sodium hydrate (3-30 mg/kg; i.d.) dose-dependently inhibits gastric acid secretion[1].

In anesthetized rats, Ilaprazole sodium hydrate dose-dependently increases gastric pH which is lowered by histamine infusion. In the case of i.v. injection, the ED_{50} of Ilaprazole sodium hydrate and Omeprazole is 1.2 and 1.4 mg/kg and in the case of i.d. administration, the ED_{50} of Ilaprazole sodium hydrate and omeprazole is 3.9 and 4.1 mg/kg, respectively. Ilaprazole sodium hydrate also significantly inhibits pentagastrin-stimulated gastric secretion. Its ED_{50} is 2.1 mg/kg and that of Omeprazole is 3.5 mg/kg with i.d. administration. In the case of i.v. injection, Ilaprazole sodium hydrate is equipotent to Omeprazole. Ilaprazole sodium hydrate also inhibits gastric acid secretion strongly in fistular rats. The ED_{50} of Ilaprazole sodium hydrate administered intraduodenally is 0.43 mg/kg and that of Omeprazole Is 0.68 mg/kg[1].

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Animal Model:	Male SD rat (after pylorus ligation)[1]
Dosage:	3, 10, 30 mg/kg
Administration:	Intraduodenally
Result:	The acid output and volume significantly inhibited by about 60% and 46% at 3 mg/kg were s, respectively. At 30 mg/kg, it showed 93% and 73% inhibition on acid output and volume, respectively.

REFERENCES

[1]. Kwon D, et al. Effects of IY-81149, a newly developed proton pump inhibitor, on gastric acid secretion in vitro and in vivo. Arzneimittelforschung. 2001;51(3):204-213.

[2]. Zheng M, et al. Proton pump inhibitor ilaprazole suppresses cancer growth by targeting T-cell-originated protein kinase. Oncotarget. 2017;8(24):39143-39153.

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