# Ilaprazole sodium hydrate

**Cat. No.:** HY-B2145A

**CAS No.:** 2322264-11-7

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

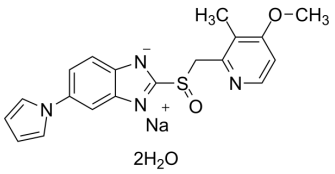
**Molecular Weight:** 424.45

**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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