Vatinoxan hydrochloride

Cat. No.: HY-19057A

CAS No.: 130466-38-5

Molecular Formula: $C_{20}H_{27}ClN_4O_4S$

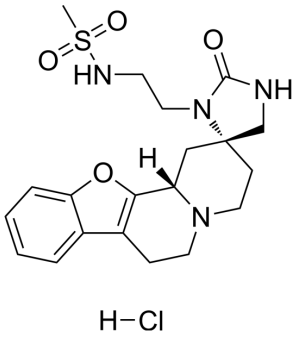
Molecular Weight: 454.97

Target: Adrenergic Receptor

Pathway: GPCR/G Protein; Neuronal Signaling

Storage: 4°C, stored under nitrogen

* In solvent : -80°C, 6 months; -20°C, 1 month (stored under nitrogen)



H−Cl

SOLVENT & SOLUBILITY

In Vitro

DMSO : 10 mg/mL (21.98 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.1979 mL	10.9897 mL	21.9795 mL
	5 mM	0.4396 mL	2.1979 mL	4.3959 mL
	10 mM	0.2198 mL	1.0990 mL	2.1979 mL

Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description

Vatinoxan hydrochloride (MK-467 hydrochloride;L-659066 hydrochloride) is a peripheral α2 adrenergic receptor antagonist.

IC_{50} & Target

α adrenergic receptor

In Vivo

Vatinoxan alone increases cardiac index and tissue oxygen delivery and has no deleterious adverse effects. Vatinoxan attenuates or prevents dexmedetomidine's systemic hemodynamic effects in a dose-dependent manner when given simultaneously i.v. but has no effect on the pulmonary outcome in conscious dogs. A 50:1 dose ratio (Vatinoxan:dexmedetomidine) induces the least alterations in cardiovascular function[1]. Vatinoxan dose-dependently attenuates the bradycardia associated with dexmedetomidine, and shortens the sedative effect without altering its quality. Vatinoxan may be useful in attenuating reductions in heart rate in conscious catsadministered dexmedetomidine[2].

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

PROTOCOL

Animal Administration [1][2]	Dogs[1] Eight dogs receive either dexmedetomidine (10 μg/kg), Vatinoxan (250 μg/kg or dexmedetomidine (10 μg/kg) with increasing doses of Vatinoxan (250 μg/kg, 500 μg/kg and 750 μg/kg). Treatments are given intravenously (i.v.) in a randomized, crossover design with a 14-day ishout period. Systemic hemodynamics and arterial blood gas analyses are recorded at baseline and at intervals up to 90 min after drugs administration[1]. Cats[2] Cats are administered seven IV treatments are administered at least 2 weeks apart, consisting of dexmedetomidine 12.5 μg/kg (D12.5) and 25 μg/kg (D25), Vatinoxan 300 μg/kg (M300), and D25 combined with 75, 150, 300 and 600 μg/kg of Vatinoxan (D25M 75, D25M150, D25M300 and D25M600, respectively). Heart rates (HR) are recorded via telemetry and sedation assessed with a simple descriptive score and a visual analogue scale prior to treatments and at intervals until 8 hours thereafter[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Honkavaara JM, et al. The effects of increasing doses of MK-467, a peripheral alpha(2)-adrenergic receptor antagonist, on the cardiopulmonary effects of intravenous dexmedetomidine in conscious dogs. J Vet Pharmacol Ther. 2011 Aug;34(4):332-7.

[2]. Honkavaara J, et al. The effect of MK-467, a peripheral α2-adrenoceptor antagonist, on dexmedetomidine-inducedsedation and bradycardia after intravenous administration in conscious cats. Vet Anaesth Analg. 2017 Feb 22. pii: S1467-2987(16)31387-3.

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