Solifenacin hydrochloride

Cat. No.: HY-I0230

CAS No.: 180468-39-7

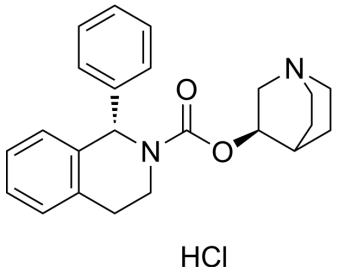
Molecular Formula: $C_{23}H_{27}ClN_2O_2$

Molecular Weight: 398.93

Target: mAChR

Pathway: GPCR/G Protein; Neuronal Signaling

Storage: 4°C, sealed storage, away from moisture
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 50 mg/mL (125.34 mM; Need ultrasonic)
H_2O : 50 mg/mL (125.34 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.5067 mL	12.5335 mL	25.0671 mL
5 mM	0.5013 mL	2.5067 mL	5.0134 mL
10 mM	0.2507 mL	1.2534 mL	2.5067 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 100 mg/mL (250.67 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.75 mg/mL (6.89 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.75 mg/mL (6.89 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.75 mg/mL (6.89 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Solifenacin hydrochloride (YM905 hydrochloride) is a muscarinic receptor antagonist, with pK_is of 7.6, 6.9 and 8.0 for M_1, M_2 and M_3 receptors, respectively.

IC_{50} & Target	mAChR2	mAChR1	mAChR3

In Vitro

Solifenacin hydrochloride (YM905 hydrochloride) is a novel muscarinic receptor antagonist with pK_is of 7.6±0.056, 6.9±0.034

	and 8.0±0.021 for M1, M2 and M3 receptors, respectively. In murine submandibular gland cells, the antagonistic effects of 100 nM Solifenacin hydrochloride and oxybutynin on Ca^{2+} mobilization evoked by varying doses of carbachol (CCh) are examined. Solifenacin hydrochloride does not shift the CCh dose-activation curve in a parallel manner whereas oxybutynin shows insurmountable antagonism. The pK_b values are obtained as 7.4±0.17 for Solifenacin hydrochloride and 8.8±0.21 for oxybutynin[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Solifenacin hydrochloride (YM905 hydrochloride) reduces bladder responses by 40% at a dose of 210 nmol/kg (0.1 mg/kg) and abolishes them at 2100 nmol/kg (1 mg/kg). In contrast, its inhibitory effects on salivary and cardiac responses are only slight at 630 nmol/kg (0.3 mg/kg), and reach 66% and 49%, respectively, at 2100 nmol/kg (1 mg/kg). At doses of 63 and 210 nmol/kg (0.03 and 0.1 mg/kg), Solifenacin hydrochloride slightly increases saliva secretion[1]. Solifenacin hydrochloride (0.01 to 0.3 mg/kg i.v.) dose-dependently increases bladder capacity and voided volume at doses of 0.03 mg/kg i.v. or more, but does not affect residual volume or micturition pressure at any dose tested[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Neurourol Urodyn. 2017 Apr;36(4):1026-1033.

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REFERENCES

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[3]. Ohtake A, Sato S, Sasamata M, Miyata K.The forefront for novel therapeutic agents based on the pathophysiology of lower urinary tract dysfunction: ameliorative effect of solifenacin succinate (Vesicare), a bladder-selective antimuscarinic agent, on overactive bladder symptoms, especially urgency episodes.J Pharmacol Sci. 2010;112(2):135-41. Epub 2010 Feb 4.

[4]. Hoffstetter S, Leong FC.Solifenacin succinate for the treatment of overactive bladder.Expert Opin Drug Metab Toxicol. 2009 Mar;5(3):345-50.

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