Sumatriptan

Cat. No.: HY-B0121B

CAS No.: 103628-46-2

Molecular Formula: $C_{14}H_{21}N_3O_2S$

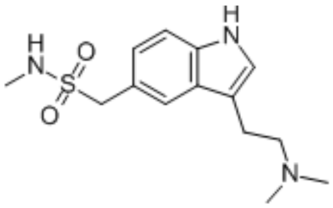
Molecular Weight: 295.4

Target: 5-HT Receptor

Pathway: GPCR/G Protein; Neuronal Signaling

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (338.52 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.3852 mL	16.9262 mL	33.8524 mL
5 mM	0.6770 mL	3.3852 mL	6.7705 mL
10 mM	0.3385 mL	1.6926 mL	3.3852 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (8.46 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (8.46 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (8.46 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Sumatriptan (GR 43175) is an orally active 5-HT1 receptor agonist with IC_{50}s of 7.3 nm, 9.3nm and 17.8 nm for 5-HT_{1D}, 5-HT_{1B} and 5-HT_{1F} receptors, respectively. Sumatriptan can be used for migraine headache research[1][2][3][4].

IC_{50} & Target

5-HT_{1D} Receptor 17 nM (Ki)	5-HT_{1B} Receptor 27 nM (Ki)	5-HT_{1A} Receptor 100 nM (Ki)	5-HT_{1D} Receptor 7.3 nM (IC_{50})
5-HT_{1B} Receptor 9.3 nM (IC_{50})	5-HT_{1F} Receptor 17.8 nM (IC_{50})		

In Vivo	Sumatriptan (600 μg/kg, i.p. or 0.06 μg in 5 μL, i.t.) reverses nitroglycerin-induced thermal hypersensitivity in mice[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Personalized Medicine Universe. 2019 May.

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REFERENCES

[1]. Razzaque Z, et al. Vasoconstriction in human isolated middle meningeal arteries: determining the contribution of 5-HT1B- and 5-HT1F-receptor activation. Br J Clin Pharmacol. 1999 Jan;47(1):75-82.

[2]. Bates EA, et al. Sumatriptan alleviates nitroglycerin-induced mechanical and thermal allodynia in mice. Cephalalgia. 2010 Feb;30(2):170-8.

[3]. K L Dechant, et al. Sumatriptan. A review of its pharmacodynamic and pharmacokinetic properties, and therapeutic efficacy in the acute treatment of migraine and cluster headache. Drugs. 1992 May;43(5):776-98.

[4]. S J Peroutka, et al. Sumatriptan (GR 43175) interacts selectively with 5-HT1B and 5-HT1D binding sites. Eur J Pharmacol. 1989 Apr 12;163(1):133-6.

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