SR59230A

Cat. No.: HY-100672

CAS No.: 174689-39-5

Molecular Formula: $C_{23}H_{29}NO_6$

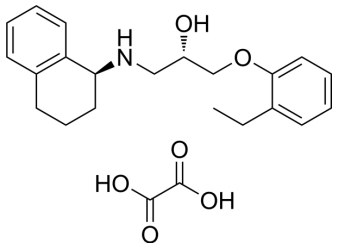
Molecular Weight: 415.48

Target: Adrenergic Receptor

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 : 31.25 mg/mL (75.21 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.4069 mL	12.0343 mL	24.0685 mL
	5 mM	0.4814 mL	2.4069 mL	4.8137 mL
	10 mM	0.2407 mL	1.2034 mL	2.4069 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: ≥ 2.08 mg/mL (5.01 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (5.01 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (5.01 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

SR59230A is a potent, selective, and blood-brain barrier penetrating β3-adrenergic receptor antagonist[1] with IC_{50}s of 40, 408, and 648 nM for β3, β1, and β2 receptors, respectively[2].

IC_{50} & Target

β adrenergic receptor

In Vitro

SR59230A (100 nM-50 μM; 24 hours) is able to reduce cell viability in a dose-dependent manner in Neuro-2A, BE(2)C and SK-N-BE(2) NB cell lines[3].

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

Cell Viability Assay[3]

Cell Line:	Three different neuroblastoma (NB) cell lines, one murine (Neuro-2A) and two human (SK-N-BE(2), BE(2)C)
Concentration:	100 nM, 1 μM, 5 μM, 10 μM, and 50 μM
Incubation Time:	24 hours
Result:	Reduced cell viability in a dose-dependent manner, with significant effect at a concentration limit over 1 μM for Neuro-2A cells and 5 μM for SK-N-BE(2) and BE(2)C).

In Vivo

MDMA (20 mg/kg) produces a slowly developing hyperthermia, reaching a maximum increase of 1.8°C at 130 min post injection. ?SR59230A (0.5 mg/kg) produces a small but significant attenuation of the slowly developing hyperthermia to MDMA. SR59230A (5 mg/kg) reveals a significant and marked early hypothermic reaction to MDMA[4].

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

Animal Model:	Male C-57BL6J wild-type mice (22-35 g)[4]
Dosage:	0.5 or 5 mg/kg
Administration:	Injected s.c.; administered 30 min prior to the injection s.c. of MDMA (20 mg/kg).
Result:	Modulated the actions of MDMA on temperature involve α1-adrenoceptor antagonism.

CUSTOMER VALIDATION

- Nat Commun. 2023 May 2;14(1):2523.
- Nat Commun. 2022 Jun 13;13(1):3394.
- J Funct Foods. 2023 Apr.
- Eur J Pharmacol. 2022 Jun 20;175110.
- Int J Obes. 2022 May 20.

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REFERENCES

[1]. Nisoli E, et al. Functional studies of the first selective beta 3-adrenergic receptor antagonist SR 59230A in rat brown adipocytes.Mol Pharmacol. 1996 Jan;49(1):7-14.

[2]. Kanzler SA, et al. Involvement of β3-adrenergic receptors in the control of food intake in rats.Braz J Med Biol Res. 2011 Nov;44(11):1141-7.

[3]. Bruno G, et al. β3-adrenoreceptor blockade reduces tumor growth and increases neuronal differentiation in neuroblastoma via SK2/S1P2 modulation.Oncogene. 2020 Jan;39(2):368-384.

[4]. Bexis S, et al. Role of alpha 1- and beta 3-adrenoceptors in the modulation by SR59230A of the effects of MDMA on body temperature in the mouse. Br J Pharmacol. 2009 Sep;158(1):259-66.

Caution: Product has not been fully validated for medical applications. For research use only.

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