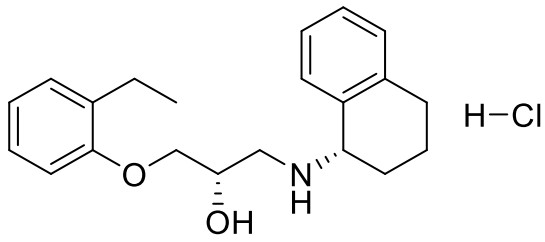
Product data sheet

MedKoo Cat#: 532789 Name: SR-59230A HCl CAS#: 1135278-41-9 (HCl) Chemical Formula: $C_{21}H_{28}ClNO_2$ Molecular Weight: 361.91	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:

SR-59230A is a potent and selective β3 adrenoceptor antagonist (IC50 values are 40, 408 and 648 nM for β3, β1 and β2 receptors respectively). SR-59230A was subsequently shown to also act at α1 adrenoceptors at high doses. It has been shown to block the hyperthermia produced by MDMA in animal studies. SR 59230A blocks MDMA-induced hyperthermia, while at high concentrations it blocks hyperthermia but also increases heat loss through an α1-AR antagonistic mechanism.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	100	276.31
Water	10	27.63

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.76 mL	13.82 mL	27.63 mL
5 mM	0.55 mL	2.76 mL	5.53 mL
10 mM	0.28 mL	1.38 mL	2.76 mL
50 mM	0.06 mL	0.28 mL	0.55 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

1. Pettersson US, Sandberg M, Jansson L. Two-week treatment with the β₃-adrenoceptor antagonist SR59230A normalizes the increased pancreatic islet blood flow in type 2 diabetic GK rats. Diabetes Obes Metab. 2012 Oct;14(10):960-2. doi: 10.1111/j.1463-1326.2012.01616.x. Epub 2012 May 28. PMID: 22564532.
2. Hutchinson DS, Sato M, Evans BA, Christopoulos A, Summers RJ. Evidence for pleiotropic signaling at the mouse beta3-adrenoceptor revealed by SR59230A [3-(2-Ethylphenoxy)-1-[(1,S)-1,2,3,4-tetrahydronapth-1-ylamino]-2S-2-propanol oxalate]. J Pharmacol Exp Ther. 2005 Mar;312(3):1064-74. doi: 10.1124/jpet.104.076901. Epub 2004 Dec 1. PMID: 15574684.

In vivo study

1. Sun J, Cheng J, Ding X, Chi J, Yang J, Li W. β3 adrenergic receptor antagonist SR59230A exerts beneficial effects on right ventricular performance in monocrotaline-induced pulmonary arterial hypertension. Exp Ther Med. 2020 Jan;19(1):489-498. doi: 10.3892/etm.2019.8236. Epub 2019 Nov 22. PMID: 31853320; PMCID: PMC6909721.
2. Zhao QQ, Jing JN, Li HQ, Liu R, Li XP, Cui XL. [Effect of β3-AR antagonist SR59230A on the tension and microRNA expression of rat thoracic aorta]. Zhongguo Ying Yong Sheng Li Xue Za Zhi. 2017 Jan 8;33(1):6-10. Chinese. doi: 10.12047/j.cjap.5448.2017.002. PMID: 29926599.

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7. Bioactivity

Biological target:

SR-59230A HCl is a β3-adrenergic receptor (β3-AR) antagonist (pA2s = 8.76, 7.31, and 6.63 in rat proximal colon, guinea pig atrium, and guinea pig trachea, respectively). It is less selective for β3-AR in cells transfected with the human β-AR subtypes (Kis = 16.4, 61.9, and 122 nM for β1-, β2-, and β3-AR, respectively).

In vitro activity

SR-59230A displayed partial agonist properties in some cells and acted as a full agonist in others. It antagonized cAMP increases in adipocytes but showed agonist effects in a microphysiometer. In mouse ileum, it relaxed smooth muscle independently of cAMP levels. These results suggest SR-59230A exhibits dual agonist and antagonist actions at mouse beta(3)-adrenoceptors, possibly through cAMP-independent pathways.

Reference: J Pharmacol Exp Ther. 2005 Mar;312(3):1064-74. https://pubmed.ncbi.nlm.nih.gov/15574684/

In vivo activity

SR-59230A exerts beneficial effects on right ventricular performance in rats with monocrotaline (MCT)-induced pulmonary arterial hypertension (PAH). Blocking β3-AR with SR-59230A may alleviate the structural changes and inflammatory infiltration to the lung as a result of reduced oxidative stress. SR-59230A suppressed the elevated expression of endothelial nitric oxide and alleviated inflammatory infiltration to the lung under PAH conditions.

Reference: Exp Ther Med. 2020 Jan;19(1):489-498. https://pubmed.ncbi.nlm.nih.gov/31853320/

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.