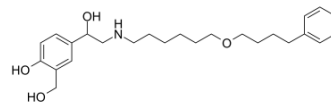


Salmeterol

Cat. No.:	HY-14302		
CAS No.:	89365-50-4		
Molecular Formula:	C ₂₅ H ₃₇ NO ₄		
Molecular Weight:	415.57		
Target:	Adrenergic 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 (240.63 mM)
 * "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	2.4063 mL	12.0317 mL	24.0633 mL
	5 mM	0.4813 mL	2.4063 mL	4.8127 mL
	10 mM	0.2406 mL	1.2032 mL	2.4063 mL

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

In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
 Solubility: ≥ 2.5 mg/mL (6.02 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
 Solubility: ≥ 2.5 mg/mL (6.02 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
 Solubility: ≥ 2.5 mg/mL (6.02 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Salmeterol (GR33343X) is a potent and selective human β₂ adrenoceptor agonist. Salmeterol shows potent stimulation of cAMP accumulation in CHO cells expressing human β₂, β₁ and β₃ adrenoceptors with pEC₅₀s of 9.6, 6.1, and 5.9, respectively [1].

IC₅₀ & Target

β ₂ adrenoceptor 9.6 (pEC ₅₀)	β ₁ adrenoceptor 6.1 (pEC ₅₀)	β ₃ adrenoceptor 5.9 (pEC ₅₀)
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In Vitro	Salmeterol (0.001-25 μ M) inhibits human T lymphocyte proliferation ^[2] . MCE has not independently confirmed the accuracy of these methods. They are for reference only. Cell Proliferation Assay ^[2]	
	Cell Line:	Human T lymphocytes (THP-1 cells)
	Concentration:	0.001, 0.01, 0.05, 0.2, 1, 5, and 25 μ M
	Incubation Time:	
	Result:	The proliferation of Th2 cells was inhibited in a concentration dependent manner.
In Vivo	Salmeterol (0.16 mg/kg), Formoterol (0.32 mg/kg) and combined treatment have therapeutic effects in mice with chronic obstructive pulmonary disease (COPD) ^[3] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.	
	Animal Model:	Male C57BL/6 mice (6-8 weeks old, body weight: 32-35 g) ^[3]
	Dosage:	Salmeterol (0.16 mg/kg) and/or Formoterol (0.32 mg/kg)
	Administration:	The therapeutic efficacy of co-treatment was investigated in this model over a 56-day-long observation period.
	Result:	COPD assessment test scores were markedly improved in mice with COPD.

CUSTOMER VALIDATION

- Nat Commun. 2020 Sep 25;11(1):4857.
- Cell Rep. 2019 Dec 3;29(10):2929-2935.e4
- Neurobiol Dis. 2020 Jul;140:104874.
- J Pharmaceut Biomed. 2020, 113870.
- Drug Test Anal. 2020 Aug 27.

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REFERENCES

- [1]. Panayiotis A Procopiou, et al. The discovery of long-acting saligenin β_2 adrenergic receptor agonists incorporating a urea group. Bioorg Med Chem. 2011 Oct 15;19(20):6026-32.
- [2]. Malcolm Johnson. Effects of beta2-agonists on resident and infiltrating inflammatory cells. J Allergy Clin Immunol. 2002 Dec;110(6 Suppl):S282-90.
- [3]. Zhiyuan Wang, et al. Efficacy of salmeterol and formoterol combination treatment in mice with chronic obstructive pulmonary disease. Exp Ther Med. 2018 Feb;15(2):1538-1545.

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

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