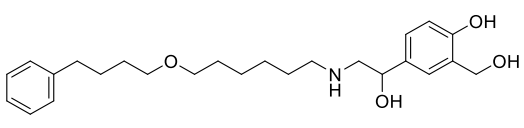


Product data sheet



MedKoo Cat#: 522405 Name: Salmeterol free base CAS#: 89365-50-4 (free base) Chemical Formula: C ₂₅ H ₃₇ NO ₄ Exact Mass: 415.2723 Molecular Weight: 415.57		
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:

Salmeterol is a long-acting beta2-adrenergic receptor agonist drug used in the maintenance and prevention of asthma symptoms and maintenance of chronic obstructive pulmonary disease (COPD) symptoms. Salmeterol is also used to prevent breathing difficulties during exercise (exercise induced bronchospasm). It is marketed as Serevent in the US.

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
To be determined	To be determined	To be determined

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.41 mL	12.03 mL	24.06 mL
5 mM	0.48 mL	2.41 mL	4.81 mL
10 mM	0.24 mL	1.20 mL	2.41 mL
50 mM	0.05 mL	0.24 mL	0.48 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

- Sharma M, Flood PM. β -arrestin2 regulates the anti-inflammatory effects of Salmeterol in lipopolysaccharide-stimulated BV2 cells. *J Neuroimmunol*. 2018 Dec 15;325:10-19. doi: 10.1016/j.jneuroim.2018.10.001. Epub 2018 Oct 4. PMID: 30352316.
- Haghi M, Traini D, Postma DS, Bebawy M, Young PM. Fluticasone uptake across Calu-3 cells is mediated by salmeterol when deposited as a combination powder inhaler. *Respirology*. 2013 Nov;18(8):1197-201. doi: 10.1111/resp.12146. PMID: 23796052.

In vivo study

- Bortolotto V, Bondi H, Cuccurazzu B, Rinaldi M, Canonico PL, Grilli M. Salmeterol, a β_2 Adrenergic Agonist, Promotes Adult Hippocampal Neurogenesis in a Region-Specific Manner. *Front Pharmacol*. 2019 Sep 12;10:1000. doi: 10.3389/fphar.2019.01000. PMID: 31572182; PMCID: PMC6751403.
- Han SO, Li S, Koeberl DD. Salmeterol enhances the cardiac response to gene therapy in Pompe disease. *Mol Genet Metab*. 2016 May;118(1):35-40. doi: 10.1016/j.ymgme.2016.03.006. Epub 2016 Mar 18. PMID: 27017193; PMCID: PMC4833676.

7. Bioactivity

Biological target:

Salmeterol shows potent stimulation of cAMP accumulation in CHO cells expressing human β_2 , β_1 and β_3 adrenoceptors with pEC₅₀s of 9.6, 6.1, and 5.9, respectively.

Product data sheet



In vitro activity

This study investigated the anti-inflammatory effects of salmeterol on LPS-activated murine microglial BV2 cells. Salmeterol inhibited LPS-induced release of TNF- α , IL-1 β , and NO in BV2 cells. Salmeterol suppressed nuclear translocation of NF- κ B p65 by inhibiting the I κ B- α degradation and TAK1 phosphorylation. Salmeterol increased the expression of β -arrestin2 and enhanced the interaction between β -arrestin2 and TAB1.

Reference: J Neuroimmunol. 2018 Dec 15;325:10-19. <https://pubmed.ncbi.nlm.nih.gov/30352316/>

In vivo activity

Salmeterol shows promise in combating stress-related disruptions in adult hippocampal neurogenesis and depressive behavior. It enhances neuroplasticity in the hippocampus, fostering the development of neuroblasts with increased complexity. These benefits are primarily observed in the ventral hippocampus, which plays a role in emotional behavior and mood regulation.

Reference: Front Pharmacol. 2019 Sep 12;10:1000. <https://pubmed.ncbi.nlm.nih.gov/31572182/>

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.