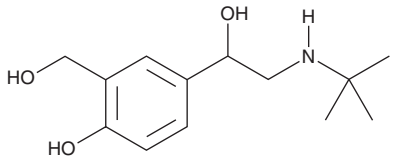
PRODUCT INFORMATION

Salbutamol

Item No. 21003

CAS Registry No.:	18559-94-9
Formal Name:	α[1]-[[(1,1-dimethylethyl)amino]methyl]-4-hydroxy-1,3-benzenedimethanol
Synonyms:	AH 3365, (±)-Salbutamol, DL-Salbutamol
MF:	$C_{13}H_{21}NO_3$
FW:	239.3
Purity:	≥98%
UV/Vis.:	λ_{max}: 226, 277 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Salbutamol is supplied as a crystalline solid. A stock solution may be made by dissolving the salbutamol in the solvent of choice. Salbutamol is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of salbutamol in ethanol and DMF is approximately 10 mg/ml and approximately 5 mg/ml in DMSO.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of salbutamol can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of salbutamol in PBS, pH 7.2, is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Salbutamol is an agonist of the β_2-adrenergic receptor (β_2-AR).[1] It induces bronchodilation in isolated guinea pig trachea rings (EC_{50} = 19 nM). Salbutamol selectively binds to the β_2-AR over the β_1-AR and β_3-AR in CHO cells expressing the human receptors (K_ds = 0.76, 21, and 46 µM, respectively).[2] Salbutamol (25 and 50 µg/kg, i.v.) reduces acetylcholine-induced bronchospasm in anesthetized guinea pigs.[3] It also reduces the response of bronchial muscle to efferent vagal stimulation in anesthetized cats and dogs. Nebulized salbutamol reduces transpulmonary pressure in recurrent airway obstruction-affected horses s(ED_{50} = 43.6 µg/animal).[4] Formulations containing salbutamol have been used in the prevention of exercise-induced asthma and the prevention or treatment of chronic obstructive pulmonary disease (COPD).

References

1. Kern, C., Meyer, T., Droux, S., *et al.* Synthesis and pharmacological characterization of *β*$_2$-adrenergic agonist enantiomers: Zilpaterol. *J. Med. Chem.* **52(6),** 1773-1777 (2009).
2. Baker, J.G. The selectivity of *β*-adrenoceptor antagonists at the human *β*1, *β*2 and *β*3 adrenoceptors. *Br. J. Pharmacol.* **144(3),** 317-322 (2005).
3. Cullum, V.A., Farmer, J.B., Jack, D., *et al.* Salbutamol: A new, selective β-adrenoceptive receptor stimulant. *Br. J. Pharmacol.* **35(1),** 141-151 (1969).
4. Arroyo, M.G., Couëtil, L.L., Nogradi, N., *et al.* Efficacy of inhaled levalbuterol compared to albuterol in horses with recurrent airway obstruction. *J. Vet. Intern. Med.* **30(4),** 1333-1337 (2016).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM