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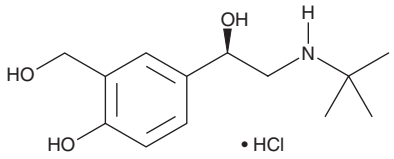
PRODUCT INFORMATION

Salbutamol (hydrochloride)

Item No. 23991

CAS Registry No.: 50293-90-8
Formal Name: α[1]R-[[(1,1-dimethylethyl)amino]methyl]-4-hydroxy-1,3-benzenedimethanol, monohydrochloride
Synonyms: Levalbuterol, (-)-Salbutamol, (R)-Salbutamol
MF: $C_{13}H_{21}NO_3 \bullet HCl$
FW: 275.8
Purity: ≥98%
UV/Vis.: λ_{max}: 228, 276 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥2 years



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

Laboratory Procedures

Salbutamol (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the salbutamol (hydrochloride) in the solvent of choice. Salbutamol (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of salbutamol (hydrochloride) in these solvents is approximately 12, 20, and 25 mg/ml, respectively.

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 (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of salbutamol (hydrochloride) in PBS, pH 7.2, is approximately 3 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; K_d = 759 nM in a radioligand binding assay using CHO cells expressing the human receptor).[1] It is selective for β_2-ARs over β_1- and β_3-ARs (K_ds = 46.8 and 21.9 µM, respectively). Salbutamol (25-50 µg/kg, i.v.) reduces acetylcholine-induced bronchospasm in anesthetized guinea pigs.[2] It also reduces response of bronchial muscle to efferent vagal stimulation in anesthetized cats and dogs when administered at doses ranging from 1 to 2.5 and 10 to 20 µg/kg, respectively. Nebulized salbutamol reduces transpulmonary pressure in recurrent airway obstruction-affected horses (EC_{50} = 39.7 µg).[3] Formulations containing salbutamol have been used in the treatment of asthma and chronic obstructive pulmonary disease (COPD).

References

1. Baker, J.G. The selectivity of β-adrenoceptor antagonists at the human β1, β2 and β3 adrenoceptors. *Br. J. Pharmacol.* **144(3)**, 317-322 (2005).
2. 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).
3. 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).

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