

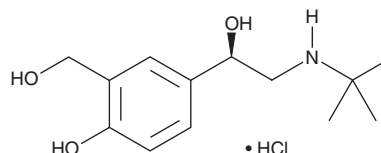
# PRODUCT INFORMATION



## Salbutamol (hydrochloride)

Item No. 23991

**CAS Registry No.:** 50293-90-8  
**Formal Name:**  $\alpha^1$ R-[[[(1,1-dimethylethyl)amino]methyl]-4-hydroxy-1,3-benzenedimethanol, monohydrochloride  
**Synonyms:** Levalbuterol, (-)-Salbutamol, (R)-Salbutamol  
**MF:**  $C_{13}H_{21}NO_3 \cdot HCl$   
**FW:** 275.8  
**Purity:**  $\geq 98\%$   
**UV/Vis.:**  $\lambda_{max}$ : 228, 276 nm  
**Supplied as:** A crystalline solid  
**Storage:**  $-20^\circ C$   
**Stability:**  $\geq 4$  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  $\beta_2$ -adrenergic receptor ( $\beta_2$ -AR;  $K_d = 759$  nM in a radioligand binding assay using CHO cells expressing the human receptor).<sup>1</sup> It is selective for  $\beta_2$ -ARs over  $\beta_1$ - and  $\beta_3$ -ARs ( $K_{d,s} = 46.8$  and  $21.9$   $\mu M$ , respectively). Salbutamol (25-50  $\mu g/kg$ , i.v.) reduces acetylcholine-induced bronchospasm in anesthetized guinea pigs.<sup>2</sup> 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  $\mu g/kg$ , respectively. Nebulized salbutamol reduces transpulmonary pressure in recurrent airway obstruction-affected horses ( $EC_{50} = 39.7$   $\mu g$ ).<sup>3</sup> 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  $\beta$ -adrenoceptor antagonists at the human  $\beta_1$ ,  $\beta_2$  and  $\beta_3$  adrenoceptors. *Br. J. Pharmacol.* **144**(3), 317-322 (2005).
2. Cullum, V.A., Farmer, J.B., Jack, D., *et al.* Salbutamol: A new, selective  $\beta$ -adrenoceptive receptor stimulant. *Br. J. Pharmacol.* **35**(1), 141-151 (1969).
3. Arroyo, M.G., Cou  til, 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).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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