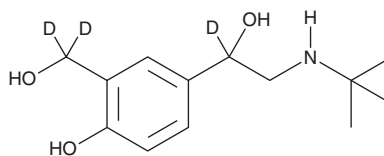


PRODUCT INFORMATION



Salbutamol-d₃ Item No. 43118

CAS Registry No.: 1219798-60-3
Formal Name: α³-[[[(1,1-dimethylethyl)amino]methyl]-6-hydroxy-1,3-benzenedimethan-α¹,α¹,α³-d₃-ol
Synonyms: (±)-Albuterol-d₃, (±)-Salbutamol-d₃, DL-Salbutamol-d₃
MF: C₁₃H₁₈D₃NO₃
FW: 242.3
Chemical Purity: ≥95% (Salbutamol)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₃); ≤1% d₀
Supplied as: A 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-d₃ is intended for use as an internal standard for the quantification of salbutamol by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

Salbutamol-d₃ is supplied as a solid. A stock solution may be made by dissolving the salbutamol-d₃ in the solvent of choice, which should be purged with an inert gas. Salbutamol-d₃ is soluble (≥10 mg/ml) in DMSO.

Description

Salbutamol is an agonist of the β₂-adrenergic receptor (β₂-AR).¹ It induces bronchodilation in isolated guinea pig trachea rings (EC₅₀ = 19 nM). Salbutamol selectively binds to the β₂-AR over the β₁-AR and β₃-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 (ED₅₀ = 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 β₂-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 β₁, β₂ and β₃ 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).

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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