

PRODUCT INFORMATION



Formoterol-¹³C-d₃ (hemifumarate)

Item No. 25317

Formal Name: *rel*-N-[2-hydroxy-5-[(1R)-1-hydroxy-2-[[[(1R)-2-(4-(methoxy-¹³C-d₃)phenyl]-1-methylethyl)amino]ethyl]phenyl]-formamide, 2E-butenedioate (2:1)

MF: C₁₈[¹³C]H₂₁D₃N₂O₄ • 1/2C₄H₄O₄

FW: 406.5

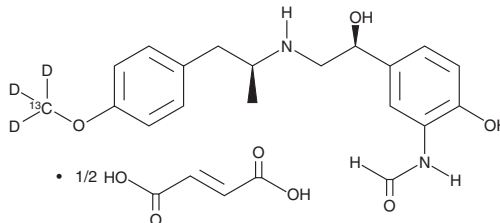
Chemical Purity: ≥90% (Formoterol)

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

Formoterol-¹³C-d₃ (hemifumarate) is intended for use as an internal standard for the quantification of formoterol (Item No. 15584) 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).

Formoterol-¹³C-d₃ (hemifumarate) is supplied as a solid. A stock solution may be made by dissolving the formoterol-¹³C-d₃ (hemifumarate) in the solvent of choice, which should be purged with an inert gas. Formoterol-¹³C-d₃ (hemifumarate) is soluble in organic solvents such as methanol and DMSO. The solubility of formoterol-¹³C-d₃ (hemifumarate) in these solvents is approximately 1 and 20 mg/ml, respectively.

Description

Formoterol is a selective agonist of the β₂-adrenergic receptor (β₂-AR; K_s = 7.58 and 2,630 nM for β₂- and β₁-ARs, respectively).¹ It is selective for β-ARs in isolated guinea pig trachea over those in atrial tissue (pD₂s = 9.29 and 6.98, respectively) and has a long duration of action.^{1,2} Aerosolized formoterol (10 μg/ml, inhaled) prevents the late asthmatic response and eosinophil and macrophage infiltration in bronchoalveolar lavage fluid (BALF), and as well as reduces bronchial reactivity in a guinea pig model of allergic asthma induced by ovalbumin.³ Formulations containing formoterol have been used, alone and in combination with other compounds, in the treatment of chronic obstructive pulmonary disease and asthma.⁴⁻⁶

References

1. Anderson, G.P. *Life Sciences* **52(26)**, 2145-2160 (1993).
2. Decker, N., Quenedey, M.C., Rouot, B., et al. *J. Pharm. Pharmacol.* **34(2)**, 107-112 (1982).
3. Sugiyama, H., Okada, C., Bewtra, A.K., et al. *J. Allergy Clin. Immunol.* **89(4)**, 858-866 (1992).
4. Decramer, M.L., Hanania, N.A., Lötvall, J.O., et al. *Int. J. Chron. Obstruct. Pulmon. Dis.* **8**, 53-64 (2013).
5. Tashkin, D.P. and Ferguson, G.T. *Respir. Res.* **14(1)**, 49 (2013).
6. Bush, A. and Saglani, S. *Lancet* **376(9743)**, 814-825 (2010).

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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