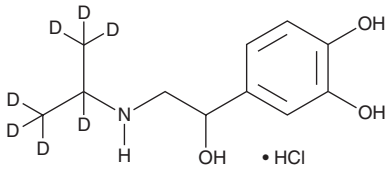
PRODUCT INFORMATION

Isoproterenol-d_7 (hydrochloride)

Item No. 34704

CAS Registry No.: 2517584-04-0
Formal Name: 4-(1-hydroxy-2-((propan-2-yl-d_7)amino)ethyl) benzene-1,2-diol, monohydrochloride
Synonym: Isoprenaline-d_7
MF: $C_{11}H_{10}D_7NO_3$ • HCl
FW: 254.8
Chemical Purity: ≥95% (Isoproterenol)
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_7); ≤1% d_0
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

Isoproterenol-d_7 (hydrochloride) is intended for use as an internal standard for the quantification of isoproterenol (Item No. 15592) 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).

Isoproterenol-d_7 (hydrochloride) is supplied as a solid. A stock solution may be made by dissolving the isoproterenol-d_7 (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Isoproterenol-d_7 (hydrochloride) is slightly soluble in DMSO and methanol.

Description

Isoproterenol is an agonist of β_1- and β_2-adrenergic receptors (β_1- and β_2-ARs; K_is = 224 and 458 nM, respectively).[1] It is selective for β_1- and β_2-ARs over β_3-ARs (K_i = 1,570 nM). Isoproterenol inhibits contractions in isolated field-stimulated rat vas deferens (EC_{50} = 45.6 nM).[2] *In vivo*, isoproterenol (0.33 mg/kg) decreases blood pressure and increases water intake in nephrectomized rats.[3] It reduces blood pressure and increases heart rate in renal hypertensive rabbits.[4] Isoproterenol inhibits histamine-induced bronchospasms in anesthetized dogs.[5] Formulations containing isoproterenol have been used in the treatment of bradydysrhythmias and to improve breathing during anesthesia.

References

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2. Lotti, V. J., Cerino, D., and Kling, P. Characterization of the adrenoreceptor activities of isoprenaline in the field stimulated rat vas deferens: Selective supersensitivity to β_2-mediated responses following reserpine treatment. *J. Auton. Pharmacol.* **2(3)**, 169-174 (1982).
3. Hosutt, J.A., Rowland, N., and Stricker, E.M. Hypotension and thirst in rats after isoproterenol treatment. *Physiol. Behav.* **21(4)**, 593-598 (1978).
4. van Boom, M. and Saxena, P.R. Systemic and regional haemodynamic responses to isoprenaline in conscious renal hypertensive rabbits. *Clin. Exp. Pharmacol. Physiol.* **8(3)**, 227-239 (1981).
5. Wasserman, M.A. and Levy, B. Cardiovascular and bronchomotor responses to selective beta adrenergic receptor agonists in the anesthetized dog. *J. Pharmacol. Exp. Ther.* **189(2)**, 445-455 (1974).

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