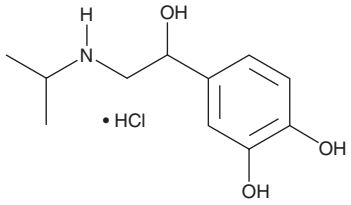
PRODUCT INFORMATION

Isoproterenol (hydrochloride)

Item No. 15592

CAS Registry No.: 51-30-9
Formal Name: 4-[1-hydroxy-2-[(1-methylethyl)amino]ethyl]-1,2-benzenediol, monohydrochloride
Synonyms: Isoprenaline, NSC 37745, NSC 89749
MF: $C_{11}H_{17}NO_3 \bullet HCl$
FW: 247.7
Purity: ≥98%
UV/Vis.: λ_{max}: 225, 282 nm
Supplied as: A crystalline 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 (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the isoproterenol (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Isoproterenol (hydrochloride) is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of isoproterenol (hydrochloride) in these solvents is approximately 10 and 2 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 isoproterenol (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of isoproterenol (hydrochloride) in PBS (pH 7.2) is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

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

1. Hoffmann, C., Leitz, M.R., Oberdorf-Maass, S., *et al*. *Naunyn Schmiedebergs Arch. Pharmacol*. **369(2)**, 151-159 (2004).
2. Lotti, V.J., Cerino, D., and Kling, P. *J. Auton. Pharmacol*. **2(3)**, 169-174 (1982).
3. Hosutt, J.A., Rowland, N., and Stricker, E.M. *Physiol. Behav*. **21(4)**, 593-598 (1978).
4. van Boom, M. and Saxena, P.R. *Clin. Exp. Pharmacol. Physiol*. **8(3)**, 227-239 (1981).
5. Wasserman, M.A. and Levy, B. *J. Pharmacol. Exp. Ther*. **189(2)**, 445-455 (1974).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM