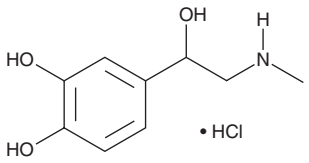
PRODUCT INFORMATION

(±)-Epinephrine (hydrochloride)

Item No. 21245

CAS Registry No.:	329-63-5
Formal Name:	4-[1-hydroxy-2-(methylamino)ethyl]-1,2-benzenediol, monohydrochloride
Synonyms:	(±)-Adrenaline, DL-Adrenaline, DL-Epinephrine
MF:	$C_9H_{13}NO_3 \bullet HCl$
FW:	219.7
Purity:	≥95%
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

(±)-Epinephrine (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the (±)-epinephrine (hydrochloride) in the solvent of choice, which should be purged with an inert gas. (±)-Epinephrine (hydrochloride) is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of (±)-epinephrine (hydrochloride) in these solvents is approximately 20 mg/ml.

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 (±)-epinephrine (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of (±)-epinephrine (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

(±)-Epinephrine is a natural neurotransmitter that is released from the adrenal medulla and activates adrenoceptors (K_is = 15, 735, and 3,970 nM for α_{1A}-, β_2-, and β_1-adrenergic receptors, respectively).[1-3] Through these receptors, (±)-epinephrine may induce either contraction or relaxation of vascular smooth muscle, depending on adrenoceptor subtype expression.[3] Formulations containing (±)-epinephrine have been used in the emergency treatment of severe allergic reactions and the induction and maintenance of mydriasis during intraocular surgery.

References

1. Rothman, R.B., Vu, N., Partilla, J.S., *et al.* In vitro characterization of ephedrine-related stereoisomers at biogenic amine transporters and the receptorome reveals selective actions as norepinephrine transporter substrates. *J. Pharmacol. Exp. Ther.* **307(1)**, 138-145 (2003).
2. Hoffmann, C., Leitz, M.R., Oberdorf-Maass, S., *et al.* Comparative pharmacology of human β-adrenergic receptor subtypes—characterization of stably transfected receptors in CHO cells. *N.-S. Arch. Pharmacol.* **369(2)**, 151-159 (2004).
3. Ahles, A. and Englehardt, S. Polymorphic variants of adrenoceptors: Pharmacology, physiology, and role in disease. *Pharmacol. Rev.* **66(3)**, 598-637 (2014).

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