

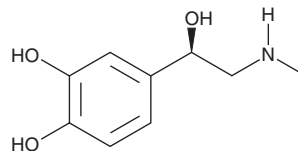
PRODUCT INFORMATION



(-)-Epinephrine

Item No. 18626

CAS Registry No.: 51-43-4
Formal Name: 4-[(1R)-1-hydroxy-2-(methylamino)ethyl]-1,2-benzenediol
Synonyms: Adrenaline, NSC 62786
MF: C₉H₁₃NO₃
FW: 183.2
Purity: ≥95%
UV/Vis.: λ_{max}: 281 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.

Description

(-)-Epinephrine is an endogenous adrenergic receptor agonist that is released from the adrenal medulla.¹ It binds to α₁-adrenergic receptors (K_i = 6 μg/L), as well as β₁-, β₂-, and β₃-adrenergic receptors (K_s = 4, 7, and 126 μM, respectively) in radioligand binding assays.^{2,3} (-)-Epinephrine inhibits forskolin-induced adenylyl cyclase activity in CHO cells expressing α₂-adrenergic receptors (EC₅₀ = 240 nM) and induces cAMP production in primary human tracheal epithelial cells, which endogenously express β₂-adrenergic receptors (EC₅₀ = 640 nM).^{4,5} (-)-Epinephrine (100 μg/kg) reduces ear hyperperfusion and decreases in body temperature and increases survival in a mouse model of anaphylaxis induced by platelet-activating factor (PAF).⁶ Formulations containing (-)-epinephrine have been used in the treatment of anaphylaxis.

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. Farley, D.B., Ford, S.P., Reynolds, L.P., et al. Quantitation of α₁-adrenergic receptors in porcine uterine and mesenteric arteries. *Am. J. Obstet. Gynecol.* **150**(5 Pt. 1), 485-491 (1984).
3. 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).
4. Eason, M.G., and Liggett, S.B. Subtype-selective desensitization of α₂-adrenergic receptors. Different mechanisms control short and long term agonist-promoted desensitization of α₂C10, α₂C4, and α₂C2. *J. Biol. Chem.* **267**(35), 25473-25479 (1992).
5. Davis, P.B., Silski, C.L., Kercksmar, C.M., et al. β-adrenergic receptors on human tracheal epithelial cells in primary culture. *Am. J. Physiol.* **258**(1 Pt. 1), C71-C76 (1990).
6. Ma, X., Xiaokaiti, Y., Lei, H., et al. Epinephrine inhibits vascular hyperpermeability during platelet-activating factor- or ovalbumin-induced anaphylaxis. *RSC Adv.* **83**(7), 52762-52771 (2017).

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.

WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 01/31/2023

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