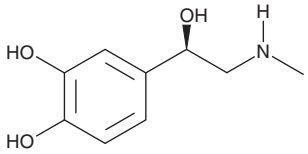
PRODUCT INFORMATION

(–)-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: $C_9H_{13}NO_3$
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 α_1-adrenergic receptors (K_i = 6 µg/L), as well as β_1-, β_2-, and β_3-adrenergic receptors (K_is = 4, 7, and 126 µM, respectively) in radioligand binding assays.[2,3] (–)-Epinephrine inhibits forskolin-induced adenylyl cyclase activity in CHO cells expressing α_2-adrenergic receptors (EC_{50} = 240 nM) and induces cAMP production in primary human tracheal epithelial cells, which endogenously express β_2-adrenergic receptors (EC_{50} = 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

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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).
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5. Davis, P.B., Silski, C.L., Kercsmar, 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).

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