

Isoprenaline (hydrochloride)

Catalog No: tcsc2582



Available Sizes

Size: 200mg

Size: 1g



Specifications

CAS No:

51-30-9

Formula:

$C_{11}H_{18}ClNO_3$

Pathway:

GPCR/G Protein

Target:

Adrenergic Receptor

Purity / Grade:

>98%

Solubility:

DMSO : 14.5 mg/mL (58.53 mM; Need ultrasonic and warming)

Alternative Names:

Isoproterenol hydrochloride

Observed Molecular Weight:

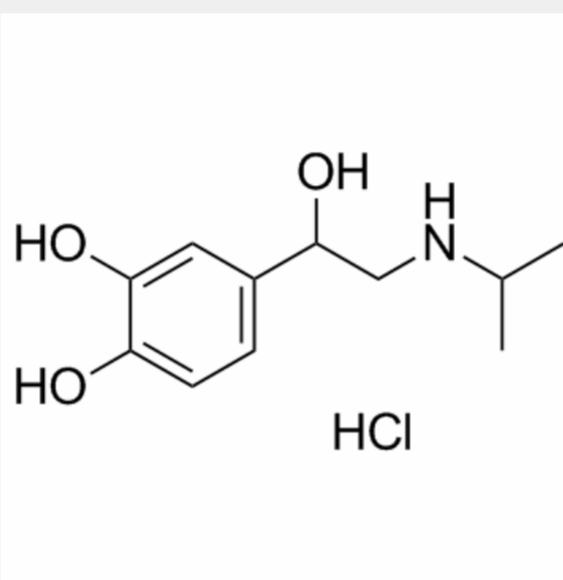
247.72

Product Description

Isoprenaline hydrochloride is a non-selective **beta-adrenergic receptor** agonist with potent peripheral vasodilator, bronchodilator, and cardiac stimulating activities.

IC50 & Target: Beta-adrenergic receptor^[1]

In Vitro: Isoprenaline (300 nM, 3 min) increases particulate cGMP- and cilostamide-inhibited, low- K_m cAMP phosphodiesterase (cAMP-PDE) activity by about 100% in intact rat fat cells^[1]. Isoprenaline inhibits insulin-stimulated glucose transport activity in rat adipocytes. Isoprenaline, in the absence of adenosine, promotes a time-dependent ($t_{1/2}$ approximately 2 min) decrease in the accessibility of insulin-stimulated cell surface GLUT4 of > 50%, which directly correlated with the observed inhibition of transport activity^[2]. Isoprenaline (5 nM and 10 mM) increases cyclic AMP levels and this effect is potentiated by cilostamide (10 mM), by rolipram, a cyclic AMP-specific PDE (PDE 4) inhibitor (10 mM) and by cyclic GMP-elevating agents (50 nM ANF or 30 nM SNP plus 100 nM DMPPO)^[3]. Isoprenaline increases the transcriptional activity of Gi alpha-2 gene to 140% of the control value, whereas gene specific hybridization for Gs alpha remains unchanged^[4]. Isoprenaline (20 nM) increases the amplitude of total iK and causes a negative shift of approximately 10 mV in the activation curve for iK, both in the absence and in the presence of 300 nM nisoldipine to block the L-type Ca^{2+} current. Isoprenaline (20 nM) increases the spontaneous pacemaker rate of sino-atrial node pacemaker cells by 16% in rabbit isolated pacemaker cells^[5].



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