Levalbuterol hydrochloride

Cat. No.: HY-B1675A

CAS No.: 50293-90-8

Molecular Formula: $C_{13}H_{22}ClNO_3$

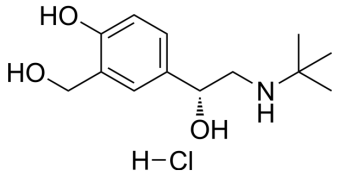
Molecular Weight: 275.77

Target: Adrenergic Receptor

Pathway: GPCR/G Protein; Neuronal Signaling

Storage: 4°C, sealed storage, away from moisture

* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

H_2O : 100 mg/mL (362.62 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	3.6262 mL	18.1311 mL	36.2621 mL
	5 mM	0.7252 mL	3.6262 mL	7.2524 mL
	10 mM	0.3626 mL	1.8131 mL	3.6262 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 100 mg/mL (362.62 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

Levalbuterol ((R)-Albuterol) hydrochloride is a short-acting β2-adrenergic receptor agonist and the active (R)-enantiomer of Salbutamol. Levalbuterol hydrochloride is a more potent bronchodilator than Salbutamol and has the potential for the treatment of COPD[1].

IC_{50} & Target

β adrenergic receptor

In Vitro

Levalbuterol (10 μM; 24 hours) hydrochloride induces 11β-HSD1 mRNA expression, however, it does not influence 11β-HSD2 expression in airway epithelial cells[1].

Levalbuterol (10 μM; 24 hours) hydrochloride significantly reduces both LPS- and TNF-α-induced NF-κB activity while increasing GRE activation in an 11β-HSD1 dependent manner in a transformed mouse airway epithelial cell line[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

RT-PCR[1]

Cell Line:	Murine Club (MTCC) cells
Concentration:	10 μM
Incubation Time:	24 hours
Result:	Increased 11β-HSD1 mRNA expression selectively.

In Vivo

Levalbuterol (subcutaneous injection; 1 mg/kg; 14 days) hydrochloride significantly decreases pulmonary inflammation in OVA mice, demonstrated a decrease in eosinophilia and IgE[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	C57BL/6 female mice with a pulmonary allergic model[2]
Dosage:	1 mg/kg
Administration:	Subcutaneous injection; 1 mg/kg; 14 days
Result:	Decreased pulmonary inflammation after OVA sensitization.

REFERENCES

[1]. Randall MJ, et, al. Anti-inflammatory effects of levalbuterol-induced 11β-hydroxysteroid dehydrogenase type 1 activity in airway epithelial cells. Front Endocrinol (Lausanne). 2015 Jan 12;5:236.

[2]. Ferrada MA, et, al. (R)-albuterol decreases immune responses: role of activated T cells. Respir Res. 2008 Jan 14;9(1):3.

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