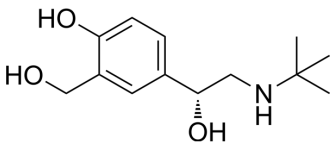
Levalbuterol

Cat. No.:	HY-B1675
CAS No.:	34391-04-3
Molecular Formula:	$C_{13}H_{21}NO_3$
Molecular Weight:	239.31
Target:	Adrenergic Receptor
Pathway:	GPCR/G Protein; Neuronal Signaling
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

Levalbuterol ((R)-Albuterol; (R)-Salbutamol) is a short-acting β2-adrenergic receptor agonist and the active (R)-enantiomer of Salbutamol. Levalbuterol 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) induces 11β-HSD1 mRNA expression, however, it does not influence 11β-HSD2expression in airway epithelial cells[1].

Levalbuterol (10 μM; 24 hours) 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) significantly decreases pulmonary inflammation in OVA mice, demonstrated a decrease in eosinophilia and IgE[3].

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Animal Model:	C57BL/6 female mice with a pulmonary allergic model[3]
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;9:3.

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