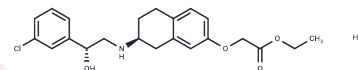


Amibegron hydrochloride

Chemical Properties

CAS No. :	121524-09-2
Formula:	C ₂₂ H ₂₇ Cl ₂ N ₂ O ₄
Molecular Weight:	440.36
Storage:	Keep away from moisture Powder: -20°C for 3 years In solvent: -80°C for 1 year <i>Actual storage temperature shall be subject to the COA.</i>



Biological Description

Description	Amibegron hydrochloride is a selective β_3 -adrenergic receptor (β_3 AR) agonist that increases energy expenditure and fat oxidation by activating β_3 ARs in brown adipose tissue; Amibegron hydrochloride is commonly used in research on metabolic disorders. Amibegron hydrochloride exhibits anxiolytic and antidepressant activity.
Targets(IC50)	Others, Adrenergic Receptor
In vitro	<p>Methods: Brain slices from SD rats (P14-P23) containing the prefrontal cortex (PFC) were perfused with 15 μM amibegron hydrochloride in a bath; the maximum effect was reached after approximately 5 minutes. Whole-cell patch-clamp recordings were used to measure AMPA receptor-mediated excitatory postsynaptic currents (AMPA-EPSCs). Results: Amibegron hydrochloride (15 μM) significantly enhanced the amplitude of AMPA-EPSCs (by approximately 30%). [1]</p> <p>Methods: Isolated brain slices from adult male Long-Evans rats were perfused with 5 μM amibegron hydrochloride (continuous) while being stimulated with LFS (1 Hz) for 15 minutes. Recordings of field excitatory postsynaptic potentials (fEPSPs) were performed continuously for 30 minutes following LFS. Results: In the presence of amibegron hydrochloride, LFS induced long-term depression of fEPSP. [2]</p>
In vivo	<p>Methods: Adult male Long-Evans rats underwent fear conditioning training. Prior to training, a microinjection of Amibegron hydrochloride (1 μg/0.5 μL per side) was administered bilaterally into the BLA. Fear-potentiated startle responses were assessed 24 hours later. Results: Fear learning was blocked in the Amibegron hydrochloride group compared to the control group. [2]</p>

Solubility Information

Solubility	DMSO: 80 mg/mL (181.67 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.2709 mL	11.3543 mL	22.7087 mL
5 mM	0.4542 mL	2.2709 mL	4.5417 mL
10 mM	0.2271 mL	1.1354 mL	2.2709 mL
50 mM	0.0454 mL	0.2271 mL	0.4542 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Wang X, Sun X, Zhou HC, Luo F. Activation of β 3-adrenoceptor increases the number of readily releasable glutamatergic vesicle via activating Ca²⁺/calmodulin/MLCK/myosin II pathway in the prefrontal cortex of juvenile rats. *Sci Rep.* 2021;11(1):18300. Published 2021 Sep 15.

Skelly MJ, Chappell AM, Ariwodola OJ, Weiner JL. Behavioral and neurophysiological evidence that lateral paracapsular GABAergic synapses in the basolateral amygdala contribute to the acquisition and extinction of fear learning. *Neurobiol Learn Mem.* 2016;127:10-16.

Claustre Y, et al. Effects of the beta3-adrenoceptor (Adrb3) agonist SR58611A (amibegron) on serotonergic and noradrenergic transmission in the rodent: relevance to its antidepressant/anxiolytic-like profile. *Neuroscience.* 2008 Oct 2;156(2):353-64.

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