Rilmenidine phosphate

Cat. No.: HY-100490B

CAS No.: 85409-38-7

Molecular Formula: $C_{10}H_{19}N_2O_5P$

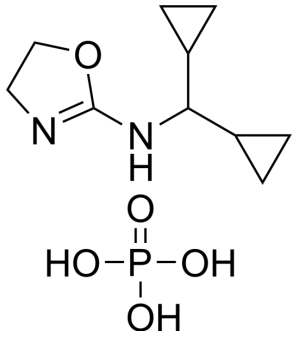
Molecular Weight: 278.24

Target: Imidazoline Receptor; Adrenergic Receptor; Apoptosis; Autophagy

Pathway: Neuronal Signaling; GPCR/G Protein; Apoptosis; Autophagy

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 : 83.33 mg/mL (299.49 mM; Need ultrasonic)

DMSO : 5 mg/mL (17.97 mM; ultrasonic and warming and heat to 80°C)

Preparing Stock Solutions

Concentration \ Solvent \ Mass	1 mg	5 mg	10 mg
1 mM	3.5940 mL	17.9701 mL	35.9402 mL
5 mM	0.7188 mL	3.5940 mL	7.1880 mL
10 mM	0.3594 mL	1.7970 mL	3.5940 mL

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

BIOLOGICAL ACTIVITY

Description

Rilmenidine phosphate, an innovative antihypertensive agent, is an orally active, selective I1 imidazoline receptor agonist. Rilmenidine phosphate is an alpha 2-adrenoceptor agonist. Rilmenidine phosphate induces autophagy. Rilmenidine phosphate acts both centrally by reducing sympathetic overactivity and in the kidney by inhibiting the Na^+/H^+ antiport. Rilmenidine phosphate modulates proliferation and stimulates the proapoptotic protein Bax thus inducing the perturbation of the mitochondrial pathway and apoptosis in human leukemic K562 cells [1][2][3].

In Vitro

Rilmenidine provides antihypertensive efficacy comparable with that of diuretics, beta-blockers, calcium channel blockers, and angiotensin-converting enzyme (ACE) inhibitors[1].

Rilmenidine phosphate (25-100 μM; 24 hours) inhibits K562 cell proliferation[2].

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

Cell Proliferation Assay[2]

Cell Line:	K562 cells
Concentration:	25, 50, 100 μM

	Incubation Time:	24 hours
	Result:	Dose-dependently inhibited K562 colony formation.
In Vivo	Rilmenidine phosphate-treated N171-82Q mice (i.p.; 4-times a week) displays significant improved forelimb grip strength and all limbs grip strength from 12 to 22 weeks of age[3]. Rilmenidine phosphate decreases levels of mutant huntingtin[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.	

REFERENCES

[1]. Reid JL. Rilmenidine: a clinical overview. Am J Hypertens. 2000;13(6 Pt 2):106S-111S.

[2]. Srdic-Rajic T, et al. Rilmenidine suppresses proliferation and promotes apoptosis via the mitochondrial pathway in human leukemic K562 cells. Eur J Pharm Sci. 2016;81:172-180.

[3]. Rose C, et al. Rilmenidine attenuates toxicity of polyglutamine expansions in a mouse model of Huntington's disease. Hum Mol Genet. 2010;19(11):2144-2153.

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