Rilmenidine

Cat. No.: HY-100490

CAS No.: 54187-04-1

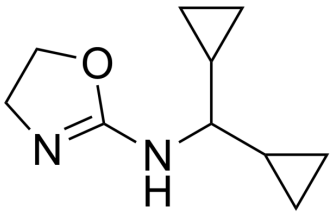
Molecular Formula: $C_{10}H_{16}N_2O$

Molecular Weight: 180.25

Target: Imidazoline Receptor; Adrenergic Receptor; Apoptosis; Autophagy

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

Storage: Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

Rilmenidine, an innovative antihypertensive agent, is an orally active, selective I1 imidazoline receptor agonist. Rilmenidine is an alpha 2-adrenoceptor agonist. Rilmenidine induces autophagy. Rilmenidine acts both centrally by reducing sympathetic overactivity and in the kidney by inhibiting the Na^+/H^+ antiport. Rilmenidine 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 (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 Viability 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-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 decreases levels of mutant huntingtin[3].

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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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