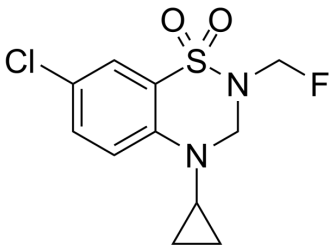
AMPA receptor modulator-4

Cat. No.:	HY-149975
CAS No.:	2917551-59-6
Molecular Formula:	$C_{11}H_{12}ClFN_2O_2S$
Molecular Weight:	290.74
Target:	iGluR
Pathway:	Membrane Transporter/Ion Channel; Neuronal Signaling
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	AMPA receptor modulator-4, a 3,4-dihydro-2H-1,2,4-benzothiadiazine 1,1-dioxide (BTD), is an orally active positive allosteric modulator of the AMPA receptors (AMPAR PAMs). AMPA receptor modulator-4 can cross the blood-brain barrier. AMPA receptor modulator-4 increases the cognition performance and improves working memory performance in mice[1].
In Vitro	AMPA receptor modulator-4 (compound 15e) has pEC_{50} of 5.66 on the calcium influx induced by 1 mM Glutamate on HEK293 cells stably expressing the GluA2(Q) subunit[1]. AMPA receptor modulator-4 has EC_{2x}=2.1 μM (FlipR)-1.5 μM (FDSS) [1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	AMPA receptor modulator-4 (compound 15e; 10 and 30 mg/kg; IP; once) increases the duration of the LTP at a dose of 10 mg/kg in rats[1]. AMPA receptor modulator-4 (1 and 3 mg/kg; po) 1 h before the three sessions significantly increases the cognition performance of CD1 mice[1]. AMPA receptor modulator-4 (0.03, 0.1 and 0.3 mg/kg; ip) improves the performance of spontaneous alternation and improves working memory performance in C57BI/6 mice[1]. AMPA receptor modulator-4 (30, 100 mg/kg; po; once) has non-pro-convulsant effect in NMRI mice[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Anesthetized rats[1]
Dosage:	10 and 30 mg/kg
Administration:	IP; once
Result:	Increased the duration of the the Long-Term Potentiation (LTP) at a dose of 10 mg/kg.

REFERENCES

[1]. Eric Goffin, et al. New insights in the development of positive allosteric modulators of α-amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid (AMPA) receptors belonging to 3,4-dihydro-2H-1,2,4-benzothiadiazine 1,1-dioxides: Introduction of (mono/difluoro)methyl groups at the 2-position of the thiadiazine ring. Eur J Med Chem. 2023 Mar 15;250:115221.

Caution: Product has not been fully validated for medical applications. For research use only.

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