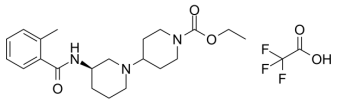
VU0364572 TFA

Cat. No.:	HY-113616A
CAS No.:	1240514-89-9
Molecular Formula:	$C_{23}H_{32}F_3N_3O_5$
Molecular Weight:	487.51
Target:	mAChR
Pathway:	GPCR/G Protein; Neuronal Signaling
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

VU0364572 TFA is an orally active and selective allosteric agonist of the M1 muscarinic receptor with an EC_{50} of 0.11 μM. VU0364572 TFA has neuroprotective potential for preventing memory impairments and reducing neuropathology in Alzheimer's Disease. VU0364572 TFA is CNS penetrant[1][3].

IC_{50} & Target

mAChR1
0.11 μM (EC50)

In Vitro

VU0364572 (30 μM; 25 min) TFA promotes KCNQ2, NR1 and MARCKS phosphorylation in striatal/NAc slices[2].

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

Western Blot Analysis[2]

Cell Line:	Striatal/NAc slices
Concentration:	30 μM
Incubation Time:	25 min
Result:	Significantly increased the phosphorylation of KCNQ2 at T217, NR1 at S890, and MARCKS at S152/156.

In Vivo

VU0364572 (10 mg/kg/day; oral; 4 months) TFA shows neuroprotective effects in 5XFAD transgenic Alzheimer's mice. VU0364572 has a half life of 45 minutes[1].

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

Animal Model:	5XFAD transgenic Alzheimer's mice[1]
Dosage:	10 mg/kg/day
Administration:	In drinking water, from 2 months of age to 6 months
Result:	Preserved hippocampal memory. Significantly reduced levels of soluble and insoluble $Aβ_{40,42}$ in the cortex and hippocampus of these animals. Significantly decreased oligomeric (oAβ) levels in the cortex.

REFERENCES

[1]. Lebois EP, et al. Disease-Modifying Effects of M1 Muscarinic Acetylcholine Receptor Activation in an Alzheimer's Disease Mouse Model. ACS Chem Neurosci. 2017 Jun 21;8(6):1177-1187.

[2]. Faruk MO, et al. Muscarinic signaling regulates voltage-gated potassium channel KCNQ2 phosphorylation in the nucleus accumbens via protein kinase C for aversive learning. J Neurochem. 2022 Feb;160(3):325-341.

[3]. Lebois EP, et al. Development of a highly selective, orally bioavailable and CNS penetrant M1 agonist derived from the MLPCN probe ML071. Bioorg Med Chem Lett. 2011 Nov 1;21(21):6451-5.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA