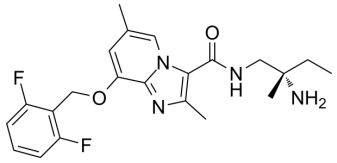
BAY-747

Cat. No.:	HY-153369
CAS No.:	1609342-18-8
Molecular Formula:	$C_{22}H_{26}F_2N_4O_2$
Molecular Weight:	416.46
Target:	Guanylate Cyclase
Pathway:	GPCR/G Protein
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	BAY-747 is an orally active and brain-penetrant stimulator of soluble guanylate cyclase (sGC). BAY-747 reverses L-NAME induced memory impairments and enhances cognition of rats in the object location task (OLT). BAY-747 also decreases blood pressure in both conscious normotensive and spontaneously hypertensive rats (SHR). BAY-747 improves function of the skeletal muscle associated with Duchenne muscular dystrophy (DMD) in mdx/mTRG2 mice model[1][2][3].
IC_{50} & Target	Soluble guanylate cyclase (sGC)[1]
In Vitro	BAY-747 (100 nM) enhances AMPA receptor dynamics in an ex vivo acquisition-like cLTP model, in combination with WS[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only. Western Blot Analysis[1]

Cell Line:	ex vivo acquisition-like cLTP model
Concentration:	100 nM
Incubation Time:	
Result:	Increased the phosphorylation levels of S845 on GluA1.

In Vivo

BAY-747 shows a brain to plasma ratio of 0.6 ± 2.0 at the investigated time frame, reflecting a relatively high brain penetration of 60%[1].
BAY-747 (0.03-1.0 mg/kg,2 mL/kg ; po; 30 min before T1 in a 24 h interval OLT) enhance long-term memory acquisition processes in rat object location task (OLT) model, and also attenuates L-NAME induced short-term memory impairments. BAY-747 does not affect GluA1-containing AMPAR dynamics in the hippocampus[1].
BAY-747 (0.003-0.3 mg/kg; po; single dose) decreases blood pressure in rats, and also (3 mg/kg; po; once daily for 35 days) increases body weight of rats in l-NAME-Treated Renin Transgenic model[2].
BAY-747 (150 mg/kg of food; po; 16 weeks) improves grip strength and running speed in male mdx/mTRG2 mice, suggesting improved skeletal muscle function[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Rat object location task (OLT) model[1]

Dosage:	0.01 mg/kg, 0.03 mg/kg, 0.1 mg/kg, 0.3 mg/kg, 1 mg/kg, 3 mg/kg
Administration:	PO; 30 min before T1 in a 24 h interval OLT
Result:	Resulted significantly higher long-term memory performance at 0.03, 0.1, 0.3 and 1.0 mg/kg dose, 30 min before T1. Attenuated L-NAME induced short-term memory impairments at 0.3 mg/kg and 1 mg/kg. Did not enhance GluA1 trafficking at 1 mg/kg 24 h after treatment.

Animal Model:	Anesthetized, conscious spontaneously hypertensive and conscious normotensive rats[2]
Dosage:	0 mg/kg, 0.003 mg/kg, 0.01 mg/kg, 0.03 mg/kg, 0.1 mg/kg, and 0.3 mg/kg
Administration:	IV; single dose
Result:	Produced a dose-dependent and long-lasting decrease in blood pressure in rats.

Animal Model:	l-NAME-Treated Renin Transgenic Rats[2]
Dosage:	0.3 mg/kg, 3 mg/kg
Administration:	PO; once daily for 35 days; l-NAME treatment: 30 mg/kg, po, for 6 days
Result:	Resulted a significant weight gain among rats. Led to a dose-dependent increase of plasma cGMP. Decreased blood pressure only at 3 mg/kg.

REFERENCES

[1]. Nelissen E, et al. The sGC stimulator BAY-747 and activator runcaciguat can enhance memory in vivo via differential hippocampal plasticity mechanisms. Sci Rep. 2022 Mar 4;12(1):3589.

[2]. Vakalopoulos A, et al. New Generation of sGC Stimulators: Discovery of Imidazo[1,2-a]pyridine Carboxamide BAY 1165747 (BAY-747), a Long-Acting Soluble Guanylate Cyclase Stimulator for the Treatment of Resistant Hypertension. J Med Chem. 2023 Apr 11.

[3]. Krishnan SM, et al. Assessing the Use of the sGC Stimulator BAY-747, as a Potential Treatment for Duchenne Muscular Dystrophy. Int J Mol Sci. 2021 Jul 27;22(15):8016.

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