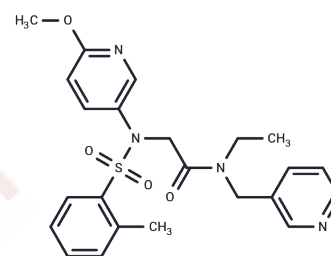


EMPA

Chemical Properties

CAS No. :	680590-49-2
Formula:	C ₂₃ H ₂₆ N ₄ O ₄ S
Molecular Weight:	454.54
Storage:	Powder: -20°C for 3 years In solvent: -80°C for 1 year Actual storage temperature shall be subject to the COA.



Biological Description

Description	EMPA is a selective, high-affinity and reversible antagonist of orexin OX2 receptor (human and rat OX2-HEK293 membranes with KD values of 1.1 and 1.4 nM respectively)
Targets(IC50)	OX Receptor
In vitro	EMPA displaces the EMPA binding from cell membranes containing human and rat OX2 receptors, with Ki values of 1.10±0.24 nM and 1.45±0.13 nM, respectively. EMPA shows an IC50=5.75 µM, Ki=2.63 µM, and IC50=12.8 µM, Ki=5.8 µM in the binding assay at human and mouse V1a receptors, respectively. In CHO(dHFr-) cells stably expressing hOX2 receptors, EMPA inhibits orexin-A-or orexin-B-evoked [Ca ²⁺] _i response with IC50s of 8.8±1.7 nM and 7.9±1.7 nM, respectively. EMPA competitively antagonizes orexin-A- and orexin-B-evoked accumulation of inositol phosphates (IP) at hOX2 receptors with pA2 values of 8.6 and 8.8 respectively.
In vivo	EMPA (3-30 mg/kg;i.p.) induces a significant and dose-dependent reduction in the baseline LMA in france and male Wistar rats. EMPA (3-30 mg/kg;i.p.) demonstrates a clear dose-dependent inhibition of spontaneous activity as compared with vehicle-treated animals. EMPA (1-300 mg/kg; i.p.) dose-dependently reverses this [Ala ¹¹ ,D-Leu ¹⁵]orexin-B-induced hyperlocomotion without itself significantly affecting locomotor activity (LMA) in male NMRI mice.

Solubility Information

Solubility	DMSO: 230 mg/mL (506.01 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 5 mg/mL (11 mM),Sonication is recommended. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i>

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.200 mL	11.0001 mL	22.0003 mL
5 mM	0.440 mL	2.200 mL	4.4001 mL
10 mM	0.220 mL	1.100 mL	2.200 mL
50 mM	0.044 mL	0.220 mL	0.440 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

P Malherbe, et al. Biochemical and behavioural characterization of EMPA, a novel high-affinity, selective antagonist for the OX

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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