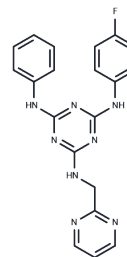


ASP2905

Chemical Properties

CAS No. :	792184-90-8
Formula:	C ₂₀ H ₁₇ FN ₈
Molecular Weight:	388.4
Storage:	Keep away from moisture Powder: -20°C for 3 years In solvent: -80°C for 1 year <i>Actual storage temperature shall be subject to the COA.</i>



Biological Description

Description	ASP-2905 is a potent and selective inhibitor of potassium channel Kv12.2 encoded by the Kcnh3/BEC1 gene. It can cross the blood-brain barrier and has antipsychotic activities
Targets(IC50)	Potassium Channel
In vitro	ASP2905 (0.1 M, 1 M) decreased the frequency of spontaneous inhibitory postsynaptic currents in cultured rat hippocampal neurons. In mice, ASP2905 reversed the disruption of spontaneous alternation behavior induced by MK-801 and scopolamine (minimum effective dose of ASP2905: 0.0625mg/kg, po). ASP2905 ameliorated the cognitive deficits of aged rats in step-through passive avoidance (0.0313 and 0.0625mg/kg, po) and Morris water-maze tasks (0.01mg/kg, po) and effectively penetrated the brain. The mean plasma and brain concentrations of ASP2905 reached their maxima (C _{max} = 0.399 ng/ml and 1.77ng/g, respectively) 1h after a single oral administration and then decreased (t _{1/2} = 1.5-1.6h) (brain plasma ratio = 2.7-4.9). ASP2905 is a selective, orally administered inhibitor of KCNH3, which can enhance cognitive performance[1].
In vivo	ASP2905 on channel activity in vitro and its neuropharmacological properties in young and aged rats as well as in mice. ASP2905 potently inhibited potassium currents in CHO cells expressing KCNH3 (IC ₅₀ = 9.0nM). In contrast, ASP2905 (10μM) minimally bound with low affinities to 55 transmembrane proteins.[1]

Solubility Information

Solubility	DMSO: 27.5 mg/mL (70.8 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: 2 mg/mL (5.15 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	2.5747 mL	12.8733 mL	25.7467 mL
5 mM	0.5149 mL	2.5747 mL	5.1493 mL
10 mM	0.2575 mL	1.2873 mL	2.5747 mL
50 mM	0.0515 mL	0.2575 mL	0.5149 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

Shinji Takahashi, et al. Neurochemical and neuropharmacological characterization of ASP2905, a novel potent selective inhibitor of the potassium channel KCNH3. *Eur J Pharmacol.* 2017 Sep 5;810:26-35.

Nomura Y, Kim N, Zhu B, et al. Optimization of Exon-Skipping Riboswitches and Their Applications to Control Mammalian Cell Fate. *ACS Synthetic Biology.* 2024

Shinji Takahashi, et al. ASP2905, a specific inhibitor of the potassium channel Kv12.2 encoded by the *Kcnh3* gene, is psychoactive in mice. *Behav Brain Res.* 2020 Jan 27;378:112315.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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