

Imeglimin hydrochloride

Chemical Properties

CAS No. : 775351-61-6

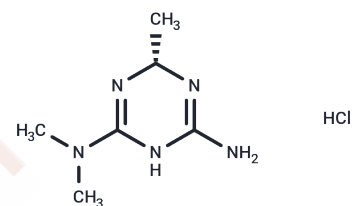
Formula: C₆H₁₄ClN₅

Molecular Weight: 191.66

Store at low temperature

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	Imeglimin hydrochloride (EMD 387008 hydrochloride) is an oral hypoglycemic agent. Imeglimin improves insulin sensitivity, inhibits the production of reactive oxygen species, increases mitochondrial DNA, and improves mitochondrial function.
Targets(IC50)	Reactive Oxygen Species, Mitochondrial Metabolism, ROS
In vitro	<p>METHODS: HMEC-1 cells were cultured in complete MCDB medium with indicated concentrations of glucose for 48 h in the absence or presence of 1 μM CsA, 250 μM N-acetylcysteine (NAC), or 100 μM Imeglimin hydrochloride (EMD 387008 hydrochloride). Cytotoxicity was assessed by staining cells with Alexa Fluor-conjugated Annexin V and PI.</p> <p>RESULTS Imeglimin hydrochloride prevented hyperglycemia-induced endothelial cell death. [1]</p> <p>METHODS: HepG2 cells were treated with 1, 3, or 10 mM Imeglimin hydrochloride for 3 h and the resulting changes in basal oxygen consumption rate (OCR) and ATP production were observed.</p> <p>RESULTS Imeglimin hydrochloride inhibited basal OCR and ATP production as well as maximal mitochondrial respiration in a concentration-dependent manner. [2]</p>
In vivo	<p>METHODS: Male C57BL/6J OlaHsd mice received imeglimin hydrochloride (EMD 387008 hydrochloride) (200 mg/kg b.i.d) by oral gavage during the last 6 weeks of HFHSD feeding to observe the antidiabetic effects of imeglimin.</p> <p>RESULTS Imeglimin hydrochloride significantly reduced blood glucose and restored normal glucose tolerance. [3]</p> <p>METHODS: C57BL/6J mice were maintained on a normal diet and a 12-h light/12-h dark cycle. At 8 weeks of age, male mice were deprived of food overnight, allowed to refeed for 5 h, and then injected intravenously with 250 mg/kg of imeglimin hydrochloride. Blood samples were collected from the tail vein 1 h after injection and blood glucose levels were measured using a glucometer.</p> <p>RESULTS Imeglimin hydrochloride significantly reduced blood glucose, while plasma insulin levels were not affected by imeglimin. [3]</p>

Solubility Information

A DRUG SCREENING EXPERT

Solubility	DMSO: 55 mg/mL (286.97 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 (10.44 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	5.2176 mL	26.0879 mL	52.1757 mL
5 mM	1.0435 mL	5.2176 mL	10.4351 mL
10 mM	0.5218 mL	2.6088 mL	5.2176 mL
50 mM	0.1044 mL	0.5218 mL	1.0435 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

- Detaille D, et al. Imeigliemin prevents human endothelial cell death by inhibiting mitochondrial permeability transition without inhibiting mitochondrial respiration. *Cell Death Discov.* 2016 Jan 18;2:15072.
- Hozumi K, et al. Effects of imegliemin on mitochondrial function, AMPK activity, and gene expression in hepatocytes. *Sci Rep.* 2023 Jan 13;13(1):746.
- Vial G, et al. Imeigliemin normalizes glucose tolerance and insulin sensitivity and improves mitochondrial function in liver of a high-fat, high-sucrose diet mice model. *Diabetes.* 2015 Jun;64(6):2254-64.

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