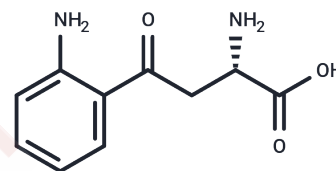


L-Kynurenine

Chemical Properties

CAS No. : 2922-83-0
 Formula: C₁₀H₁₂N₂O₃
 Molecular Weight: 208.21
 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	L-Kynurenine ((S)-Kynurenine) is an endogenous agonist of the tryptophan metabolite and the aromatic hydrocarbon receptor (AHR). L-Kynurenine can inhibit the proliferation of allogeneic T cells and increase the invasion of malignant U87 glioma cells into the collagen matrix.
Targets(IC50)	AhR,Aryl Hydrocarbon Receptor,Endogenous Metabolite
In vitro	<p>METHODS: Human corneal endothelial cells (HCEC) were treated with L-Kynurenine (10-40 μM), and apoptosis of HCECs was evaluated by flow cytometry using fluorescent isothiocyanate Annexin-V conjugates (FITC).</p> <p>RESULTS: L-Kynurenine-induced apoptosis slightly increased. [1]</p> <p>METHODS: NK92 MI cells were treated with L-Kynurenine (0-800 μM) for 72 hours. Cell viability was evaluated by trypan blue staining, and flow cytometry analysis or functional detection was performed.</p> <p>RESULTS: L-Kynurenine dose-dependently induced cell growth inhibition and apoptosis. [2]</p>
In vivo	<p>METHODS: To study the effect of L-Kynurenine on arteries, L-Kynurenine was administered to the mesenteric arteries (0.3 mM to 1 mM) and aorta (1 mM to 1 mM) of male Wistar rats.</p> <p>RESULTS: L-Kynurenine induced concentration-dependent diastolic responses in the mesenteric arteries and aorta of rats, while the selective Kv7 inhibitor aspirin and the depolarizing agent potassium chloride eliminated this diastolic effect. [3]</p> <p>METHODS: To study the neuroprotective effect of L-Kynurenine, L-Kynurenine (50-300 mg/kg) was intraperitoneally injected into neonatal rats. One hour after intraperitoneal injection, the young rats were exposed to a hypoxic environment for 1.5 hours to construct a hypoxia-ischemia neonatal rat model. L-Kynurenine (100, 200, 3000, 400 mg/kg) was intraperitoneally injected into neonatal rats. One hour after intraperitoneal injection, NMDA was injected to construct the neonatal rat model of NMDA injury.</p> <p>RESULTS: L-Kynurenine demonstrated a dose-dependent significant neuroprotective effect and had a complete protective effect at a dose of 300 mg/kg. [4]</p>

Solubility Information

A DRUG SCREENING EXPERT

Solubility	DMSO: 50 mg/mL (240.14 mM),Sonication is recommended. H2O: 4 mg/mL (19.21 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: 1 mg/mL (4.8 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	4.8028 mL	24.0142 mL	48.0284 mL
5 mM	0.9606 mL	4.8028 mL	9.6057 mL
10 mM	0.4803 mL	2.4014 mL	4.8028 mL
50 mM	0.0961 mL	0.4803 mL	0.9606 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

- Serbecic N, et al. Function of the tryptophan metabolite, L-kynurenine, in human corneal endothelial cells. *Mol Vis.* 2009 Jul 8;15:1312-24.
- Della Chiesa M, et al. The tryptophan catabolite L-kynurenine inhibits the surface expression of NKp46- and NKG2D-activating receptors and regulates NK-cell function. *Blood.* 2006 Dec 15;108(13):4118-25.
- Sakakibara K, et al. Kynurenine causes vasodilation and hypotension induced by activation of KCNQ-encoded voltage-dependent K(+) channels. *J Pharmacol Sci.* 2015 Sep;129(1):31-7.
- Nozaki K, et al. Neuroprotective effects of L-kynurenine on hypoxia-ischemia and NMDA lesions in neonatal rats. *J Cereb Blood Flow Metab.* 1992 May;12(3):400-7.
- Widner B , Sepp N , Kowald E , et al. Degradation of tryptophan in patients with systemic lupus erythematosus[J]. *Oxygen Transport to Tissue XXXIII*, 1999, 467:571-577.
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- Moyer BJ, et al. Inhibition of the aryl hydrocarbon receptor prevents Western diet-induced obesity. Model for AHR activation by kynurenine via oxidized-LDL, TLR2/4, TGFβ, and IDO1. *Toxicol Appl Pharmacol.* 2016 Jun 1;300:13-24.

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