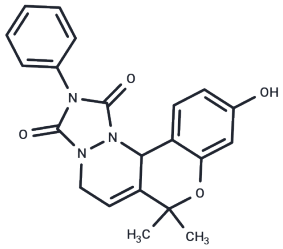
Data Sheet (Cat.No.T24167)

TargetMol

Inflachromene

Chemical Properties



CAS No. : 908568-01-4

Formula: C21H19N3O4

Molecular Weight: 377.39

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	Inflachromene (ICM) is an inhibitor of HMGB1 and HMGB expression with anti-inflammatory activity.Inflachromene reduces seizure severity in a mouse model of epilepsy by inhibiting HMGB1 translocation, inhibits endothelial proliferation through the HMGB1/2-regulated TLR4-NF-κB pathway, and inhibits autophagy by regulating Beclin 1 activity. Inflachromene can be used to study epilepsy.
Targets(IC50)	ERK,Others,NF-κB,JNK,p38 MAPK
In vitro	In BV-2 microglial cells, Inflachromene efficiently blocks LPS-induced nitrite release in a dose-dependent manner (0.01-100 μM; 24 h) without any toxicity[1]. After LPS stimulation, Inflachromene (1-10 μM) suppresses the increased levels of inflammation-related genes, such as Il6, Il1b, Nos2, and Tnf[1]. At a concentration of 5 μM, Inflachromene reduces LPS-induced secretion of the proinflammatory cytokine TNF-α[1]. In microglia, Inflachromene (5 μM; 30 min) substantially suppresses the nuclear translocation of NF-κB and the degradation of IκB[1]. The phosphorylation of ERK, JNK, and p38 MAPK in microglia induced by LPS is inhibited by Inflachromene (1-10 μM; 30 min)[1]. In the co-culture of neuroblastoma and primary neuronal cells, Inflachromene (10 μM; 30 min) completely prevents the death by inhibiting microglia-mediated neurotoxicity [1].There is no significant effect on the viability of neurons with Inflachromene (1-10 μM; 24 h)[1].
In vivo	In a dose-dependent manner (2-10 mg/kg; i.p. once daily for 4 days), Inflachromene effectively blocks LPS-mediated microglial activation[1]. For a duration of 30 days (10 mg/kg; i.p. once daily), Inflachromene significantly reduces the progression of disease, as determined by EAE clinical score[1]. When administered intravenously (i.v.) at a dose of 1 mg/kg, Inflachromene exhibits a long half-life (14.1±6.43 h) and moderate Vss (2.02±1.02 L/kg)[2]. Given orally (p.o.) at a dose of 1 mg/kg, Inflachromene shows high oral bioavailability (94%) and Cmax (0.59±0.16 g/mL)[2].

Solubility Information

Solubility	DMSO: 140 mg/mL (370.97 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: 3.3 mg/mL (8.74 mM),Sonication is recommended. *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.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.6498 mL	13.2489 mL	26.4978 mL
5 mM	0.530 mL	2.6498 mL	5.2996 mL
10 mM	0.265 mL	1.3249 mL	2.6498 mL
50 mM	0.053 mL	0.265 mL	0.530 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

Lee S, et, al. A small molecule binding HMGB1 and HMGB2 inhibits microglia-mediated neuroinflammation. Nat Chem Biol. 2014 Dec; 10(12): 1055-60.
Jiang J, Shao X, Liu W, et al.The mechano-chemical circuit in fibroblasts and dendritic cells drives basal cell proliferation in psoriasis.Cell Reports.2024, 43(7): 114513.
Lee HH, et al. A validated UPLC-MS/MS method for pharmacokinetic study of inflachromene, a novel microglia inhibitor. J Pharm Biomed Anal. 2019 Mar 20; 166: 183-188.
Cho W, Koo JY, Park Y, Oh K, Lee S, Song JS, Bae MA, Lim D, Lee DS, Park SB. Treatment of Sepsis Pathogenesis with High Mobility Group Box Protein 1-Regulating Anti-inflammatory Agents. J Med Chem. 2017 Jan 12;60(1):170-179. doi: 10.1021/acs.jmedchem.6b00954. Epub 2016 Dec 21. PubMed PMID: 28001381.
Block ML. Neuroinflammation: modulating mighty microglia. Nat Chem Biol. 2014 Dec;10(12):988-9. doi: 10.1038/nchembio.1691. PubMed PMID: 25393492.