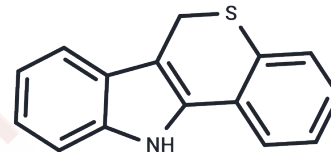


PD146176

Chemical Properties

CAS No. : 4079-26-9
 Formula: C₁₅H₁₁NS
 Molecular Weight: 237.32
 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	PD146176 (NSC-168807) is an inhibitor of 15-Lipoxygenase (15-LO), it inhibits rabbit reticulocyte 15-LO with K_i of 197 nM and IC_{50} of 0.54 μ M. PD146176 reverses cognitive impairment, brain amyloidosis, and tau pathology by stimulating autophagy in aged triple transgenic mice.
Targets(IC_{50})	Ferroptosis, Autophagy, Lipoxygenase
In vitro	15-LO by PD146176, an inhibitor of 15-LO with an IC_{50} in cells or isolated enzyme of 0.5-0.8 μ M, may limit atherosclerotic lesion development through regulation of monocyte-macrophage enrichment. Rabbits exposed to chronic endothelial denudation of the iliac-femoral artery were meal-fed a 0.25% cholesterol (C), 3% peanut oil (PNO), 3% coconut oil (CNO) diet twice daily with and without 175 mg/kg PD146176 for 12 weeks. In a second study, atherosclerotic lesions were pre-established in rabbits through chronic endothelial denudation and meal-fed a 0.5% C, 3% PNO, 3% CNO diet for 9 weeks and a 0% C/fat diet for 6 weeks prior to an 8 week administration of PD146176 at 175 mg/kg, q.d. Plasma total and lipoprotein cholesterol exposure were similar in control and PD146176-treated animals in both studies but PD146176 increased plasma triglyceride exposure 2- to 4-fold. Plasma PD146176 concentrations ranged from 99 to 214 ng/ml at 2 h post-dose. In the progression study, the iliac-femoral monocyte-macrophage area was reduced 71%, cross-sectional lesion area was unchanged and cholesteryl ester (CE) content was reduced 63%. In the regression study, size and macrophage content of iliac-femoral, fibrous plaque-like lesions were decreased 34%, CE content was reduced 19% and gross extent of thoracic aortic lesions were reduced 41%. PD146176 can limit monocyte macrophage enrichment of atherosclerotic lesions and can attenuate development of fibrofoamy and fibrous plaque lesions in the absence of changes in plasma total or lipoprotein cholesterol concentrations[1].

Solubility Information

Solubility	DMSO: 25 mg/mL (105.34 mM), Sonication is recommended. H ₂ O: < 0.1 mg/mL (insoluble), (< 1 mg/ml refers to the product slightly soluble or insoluble)
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A DRUG SCREENING EXPERT

In vivo Formulation	10% DMSO+90% Corn Oil: 2 mg/mL (8.43 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>
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	4.2137 mL	21.0686 mL	42.1372 mL
5 mM	0.8427 mL	4.2137 mL	8.4274 mL
10 mM	0.4214 mL	2.1069 mL	4.2137 mL
50 mM	0.0843 mL	0.4214 mL	0.8427 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

- Bocan TM, et al. A specific 15-lipoxygenase inhibitor limits the progression and monocyte-macrophage enrichment of hypercholesterolemia-induced atherosclerosis in the rabbit [published correction appears in *Atherosclerosis* 1998 Jul;139(1):201]. *Atherosclerosis*. 1998;136(2):203-216.
- Sendobry SM, et al. Attenuation of diet-induced atherosclerosis in rabbits with a highly selective 15-lipoxygenase inhibitor lacking significant antioxidant properties. *Br J Pharmacol*. 1997;120(7):1199-1206.
- Di Meco A, et al. 12/15-Lipoxygenase Inhibition Reverses Cognitive Impairment, Brain Amyloidosis, and Tau Pathology by Stimulating Autophagy in Aged Triple Transgenic Mice. *Biol Psychiatry*. 2017;81(2):92-100.

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