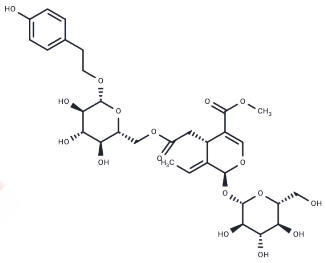
Data Sheet (Cat.No.T3803)

TargetMol

Specnuezhenide

Chemical Properties



CAS No. : 39011-92-2

Formula: C31H42O17

Molecular Weight: 686.66

Storage: Keep away from direct sunlight
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	Specnuezhenide (Nuezhenide) is isolated from the fruit of Ligustrum lucidum. It inhibits NF-κB and wnt/β-catenin signaling, thereby suppressing IL-1β-induced chondrocyte inflammation. It exerts anti-inflammatory effects in a rat model of osteoarthritis (OA).
Targets(IC50)	NF-κB,Wnt/beta-catenin
In vitro	**METHODS**: Chondrocytes were pretreated with Specnuezhenide (Nuezhenide) (0, 10, 50, 100, 200 μM) for 1 hour and then incubated with IL-1β (5 ng / ml) for 24 hours. Real-time fluorescence quantitative PCR was used to detect the mRNA expression of MMP3, MMP9, IL-6, iNOS, COX2, type II collagen and sox9; Chondrocytes were pretreated with SPN of Specnuezhenide (Nuezhenide) (0, 50, 100, 200 μM) for 1 hour and then incubated with IL-1β (5 ng / ml) for 48 hours. After harvesting the cells for protein blotting. The protein levels of MMP3, MMP9, IL-6, iNOS, COX2, type II collagen and sox9 were detected by Western blot. **RESULTS** Specnuezhenide (Nuezhenide) treatment downregulated the expression of MMP3, MMP9, IL-6, iNOS and COX2; Specnuezhenide (Nuezhenide) treatment downregulated the expression of COX2. A significant decrease in the protein levels of MMP3, MMP9, IL-6 and iNOS was observed in the high concentration group (200 μM). A significant increase in the protein levels of collagen II and sox9 was observed only in the 200 μM Specnuezhenide (Nuezhenide) treatment group. [1]
In vivo	**METHODS**: An OA model was established in SD rats by surgical transaction of ACL and MM. Rats in the Specnuezhenide (Nuezhenide) group were intra-articularly injected with 200μl Specnuezhenide (Nuezhenide) solution (200μM, 0.14mg/kg) every 7 days. Histological evaluation based on OASRI was used to evaluate the OA grade and observe the effect of Specnuezhenide (Nuezhenide) treatment on cartilage degeneration in OA rats. **RESULTS** The average OARSI grade of the SPN group was 2.95, and the level of inflammatory factors in the Specnuezhenide (Nuezhenide) group was reduced. Specnuezhenide (Nuezhenide) treatment played a chondroprotective role in the OA rat model. [1]

Solubility Information

Solubility	DMSO: 137.5 mg/mL (200.24 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: 5 mg/mL (7.28 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	1.4563 mL	7.2816 mL	14.5632 mL
5 mM	0.2913 mL	1.4563 mL	2.9126 mL
10 mM	0.1456 mL	0.7282 mL	1.4563 mL
50 mM	0.0291 mL	0.1456 mL	0.2913 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

Ma C, et al. Specnuezhenide Decreases Interleukin-1β-Induced Inflammation in Rat Chondrocytes and Reduces Joint Destruction in Osteoarthritic Rats. Front Pharmacol. 2018 Jun 28;9:700.

Sung SH,et al. A new neuroprotective compound of Ligustrum japonicum leaves. Planta Med. 2006 Jan;72(1):62-4.