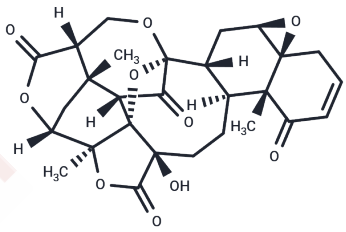
Data Sheet (Cat.No.T8716)

TargetMol

physalin F

Chemical Properties



CAS No. : 57423-71-9

Formula: C28H30O10

Molecular Weight: 526.53

Storage: Store at low temperature,Keep away from moisture
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	Physalin F is a natural blocker of CaV2.3 (R-type) and CaV2.2 (N-type) voltage-gated calcium channels.It is a secosteroid with potent anti-inflammatory and immunomodulatory activities. Physalin F induces apoptosis of PBMC, decreasing the spontaneous proliferation and cytokine production caused by Human T-lymphotropic virus type 1 (HTLV-1) infection
Targets(IC50)	Apoptosis,Calcium Channel
In vitro	**METHODS**: Three renal cancer cell lines (A498, ACHN, and UO-31) were treated with physalin F (0, 0.3, 1, 3, and 10 μg/mL, 24 h), and cell viability was determined by MTT assay. **RESULTS** Physalin F inhibited cell viability in human renal cancer cell lines A498, ACHN, and UO-31 in a concentration-dependent manner with IC50 values of 1.40 μg/mL, 2.18 μg/mL, and 2.81 μg/mL, respectively. [3] **METHODS**: A498 cells were incubated in the absence or presence of physalin F (10 μg/mL, 6, 12, 18, 24 hours) for the indicated time, and the cells were harvested and prepared for detection of (A) mitochondrial membrane potential using FACScan analysis; A498 cells were incubated in the presence of physalin F (10 μg/mL, 3, 6, 8, 12, 18, 24 hours) for the indicated time, and the cells were harvested and prepared for detection of pro-caspase-8, 9, caspase-3, PARP, and p53, p21 expression using Western blotting. **RESULTS** The expression of Bcl-2 protein family including Bcl-2 and Bcl-xL was decreased after treatment with physalin F, and physalin F induced apoptosis of A498 cells through a mitochondria-dependent pathway; physalin F induced apoptosis by inducing p53 and p21 proteins, followed by cleavage of caspase-8/-9/-3 and PARP. [3]
In vivo	Physalin F is a secosteroid with potent anti-inflammatory and immunomodulatory activities.?A concentration-dependent inhibition of spontaneous proliferation of PBMC from HAM/TSP subjects was observed in the presence of physalin F, as evaluated by (3) H-thymidine uptake.?The IC50 for physalin F was 0.97 0.11 μM.?Flow cytometry analysis using Cytometric Bead Array (CBA) showed that physalin F (10 μM) significantly reduced the levels of IL-2, IL-6, IL-10, TNF-α and IFN-γ, but not IL-17A, in supernatants of PBMC cultures.?Next, apoptosis induction was addressed by using flow cytometry to evaluate annexin V expression.?Treatment with physalin F (10 μM) increased the apoptotic population of PBMC in HAM/TSP subjects.?Transmission electron microscopy analysis of

In vivo	PBMC showed that physalin F induced ultrastructural changes, such as pyknotic nuclei, damaged mitochondria, enhanced autophagic vacuole formation, and the presence of myelin-like figures.?In conclusion, physalin F induces apoptosis of PBMC, decreasing the spontaneous proliferation and cytokine production caused by HTLV-1 infection.

Solubility Information

Solubility	DMSO: 60 mg/mL (113.95 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 (1.9 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	1.8992 mL	9.4961 mL	18.9923 mL
5 mM	0.3798 mL	1.8992 mL	3.7985 mL
10 mM	0.1899 mL	0.9496 mL	1.8992 mL
50 mM	0.038 mL	0.1899 mL	0.3798 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

Pinto LA, et al. Physalin F, a seco-steroid from Physalis angulata L., has immunosuppressive activity in peripheral blood mononuclear cells from patients with HTLV1-associated myelopathy. Biomed Pharmacother. 2016 Apr;79:129-34.

Ooi KL, et al. Physalin F from Physalis minima L. triggers apoptosis-based cytotoxic mechanism in T-47D cells through the activation caspase-3- and c-myc-dependent pathways. J Ethnopharmacol. 2013 Oct 28;150(1):382-8.

Wu SY, et al. Physalin F induces cell apoptosis in human renal carcinoma cells by targeting NF-kappaB and generating reactive oxygen species. PLoS One. 2012;7(7):e40727.