

## (-)-Alkannin

## Chemical Properties

CAS No. : 517-88-4

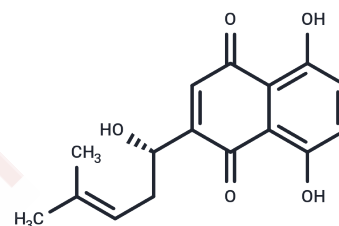
Formula: C<sub>16</sub>H<sub>16</sub>O<sub>5</sub>

Molecular Weight: 288.3

Keep away from direct sunlight

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	(-)-Alkannin (Shikonin) is a natural red naphthoquinone pigment, has antimicrobial, anti-tumor, and anti-inflammatory effects; a purified shikonin preparation is widely used for the production of medicinals, cosmetics, and some food products; shikonin also enters into the antiinflammatory ointment and cream compositions used for the treatment of burns. It can suppress the cell viability, adhesion, invasion and migratory ability of MGC-803 cells through TLR2- or NF-κB-mediated pathway.
Targets(IC50)	Apoptosis,PI3K
In vitro	3-(4,5-Dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide assay was performed for cell viability and adhesion ability of MGC-803 cells. Cell scratch repair experiments were conducted for the determination of migration ability while transwell assay for cell invasion ability. Western blot analysis and real-time polymerase chain reaction assay were used for the detection of protein and mRNA expressions. Fifty per cent inhibitory concentration of Shikonin on MGC-803 cells was 1.854 μm. Shikonin (1 μm) inhibited significantly the adhesion, invasion and migratory ability of MGC-803 cells. Interestingly, Shikonin in the presence or absence of anti-Toll-like receptor 2 (TLR2) antibody (2 μg) and nuclear factor-kappa B (NF-κB) inhibitor MG-132 (10 μm) could decrease these ability of MGC-803 cells markedly, as well as the expression levels of matrix metalloproteinases (MMP)-2, MMP-7, TLR2 and p65 NF-κB. In addition, the co-incubation of Shikonin and anti-TLR2/MG-132 has a significant stronger activity than anti-TLR2 or MG-132 alone.
Kinase Assay	Histamine release from basophils stimulated with anti-IgE antibody was analyzed fluorimetrically. Syk and Lyn kinase activities were tested in Vitro with recombinant proteins and analyzed by off-chip mobility shift assay. Shikonin dose-dependently inhibited the histamine release from basophils induced by anti-IgE antibody (IC <sub>50</sub> = 2.6 +/- 1.0 microM; mean +/- SEM). A search for the target(s) of Shikonin in the signal cascade of IgE-mediated activation showed that it strongly inhibits Syk (IC <sub>50</sub> = 7.8 microM, in the recombinant kinase assay), which plays a pivotal role in the degranulation response. A less significant inhibition was found for Lyn, which phosphorylates FcepsilonRI-beta gamma subunits and also Syk.

## Solubility Information

## A DRUG SCREENING EXPERT

Solubility	DMSO: 50 mg/mL (173.43 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: 2 mg/mL (6.94 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	3.4686 mL	17.343 mL	34.6861 mL
5 mM	0.6937 mL	3.4686 mL	6.9372 mL
10 mM	0.3469 mL	1.7343 mL	3.4686 mL
50 mM	0.0694 mL	0.3469 mL	0.6937 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

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