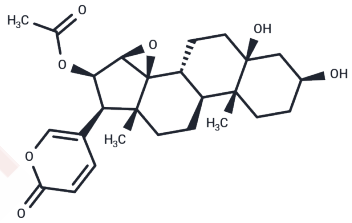
Data Sheet (Cat.No.T4A2399)

TargetMol

Cinobufotalin

Chemical Properties



CAS No. : 1108-68-5

Formula: C26H34O7

Molecular Weight: 458.54

Storage: Keep away from direct sunlight,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	Cinobufotalin is a main cardiac toxin in toad, it is a novel anti-HCC agent, it induces growth inhibition and apoptosis in cultured HCC cells through ceramide production. Cinobufotalin is also an effective reversal agent for the multidrug resistance of tumors, it can reverse the adriamycin-resistance in Raji/ADR cells and the expression of P-gp and MRP-1 proteins. Cinobufotalin can promote the dendritic cells(DCs) derived from peripheral blood of patients with chronic hepatitis B to mature and effectively enhance its(the DCs') capabilities, therefore the treatment of cinobufotalin may potentiate the antiviral immunity of the patients with chronic hepatitis B(CHB).
Targets(IC50)	Akt,IL Receptor,MRP,P-gp
In vitro	Hepatocellular carcinoma (HCC) is a highly aggressive and lethal neoplasm with poor prognosis. The aim of this study is to investigate the anticancer activity of Cinobufotalin, a bufadienolide isolated from toad venom, in cultured HCC cells, and to study the underlying mechanisms. METHODS AND RESULTS:We found that Cinobufotalin (at nmol/L) significantly inhibited HCC cell growth and survival while inducing considerable cell apoptosis. Further, Cinobufotalin inhibited sphingosine kinase 1 (SphK1) activity and induced pro-apoptotic ceramide production. Ceramide synthase-1 small hairpin RNA (shRNA)-depletion inhibited Cinobufotalin-induced ceramide production and HCC cell apoptosis. On the other hand, the glucosylceramide synthase (GCS) inhibitor 1-phenyl-2-decanoylamino-3-morpholino-1-propanol (PDMP) facilitated Cinobufotalin-induced ceramide production and cell apoptosis. SphK1 inhibitor II (SKI-II), similar to Cinobufotalin, increased cellular ceramide level and promoted HCC cell apoptosis. Finally, we observed that Cinobufotalin inactivated Akt-S6K1 signaling in HepG2 cells, which was again inhibited by ceramide synthase-1 shRNA-depletion. CONCLUSIONS:In conclusion, the results of this study suggest that Cinobufotalin induces growth inhibition and apoptosis in cultured HCC cells through ceramide production. Cinobufotalin may be investigated as a novel anti-HCC agent.

Solubility Information

Solubility	DMSO: 50 mg/mL (109.04 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 (4.36 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	2.1808 mL	10.9042 mL	21.8083 mL
5 mM	0.4362 mL	2.1808 mL	4.3617 mL
10 mM	0.2181 mL	1.0904 mL	2.1808 mL
50 mM	0.0436 mL	0.2181 mL	0.4362 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.